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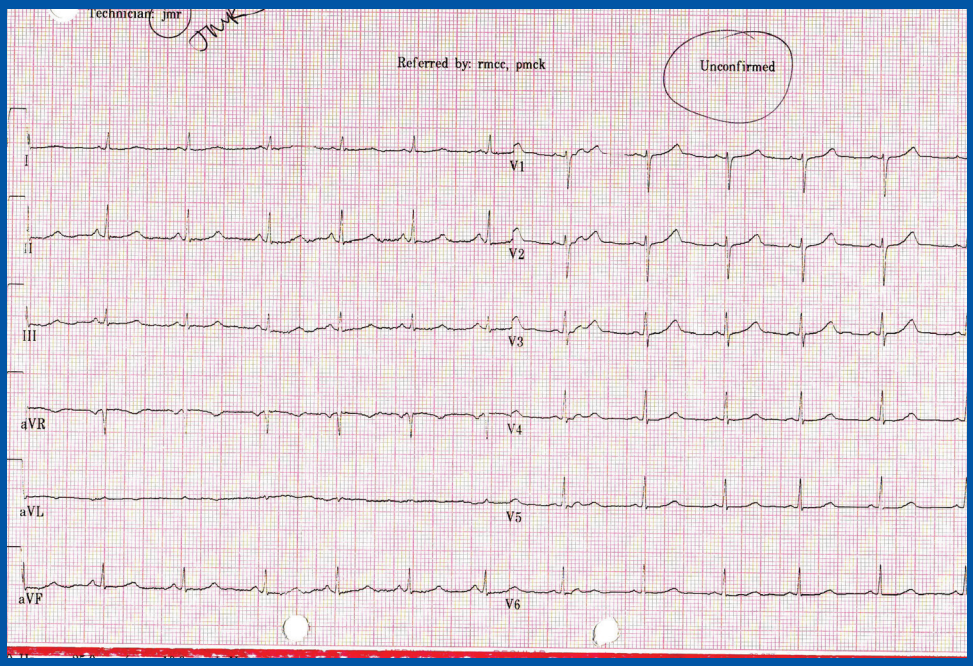

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and the Belfast Clinical and Pathological Society (founded 1853)

Editorial

Consent, communication, surgery, body donation, and the Human Tissue Act.

Consent is always a topical issue. The General Medical Council (GMC) and the Medical Defence associations are always keen to see that patients are treated carefully and in line with good medical practice. Communication is an essential part of consent and if doctor-patient communication is good and is well documented in the notes, problems do not usually occur. Knowing what to communicate, however, is not always clear. This issue of the journal contains some papers that will help answer this question. For those women having gynaecological surgery including hysterectomy and operations for incontinence[1], patients often ask how soon they can drive after surgery. The answer clearly varies depending on the gynaecologist performing the surgery[2]. National guidelines are needed for consistency.

fig. Rembrandt – 'Anatomy Lesson of Dr. Nicolaas Tulp' © Mauritshuis Museum, The Netherlands

Complications may occur after surgery and can often be predicted. A staggering nine percent of patients experience chronic pain after hernia surgery[3]. Some have mild pain, but in others, it may be severe and it impacts heavily on the quality of life. The majority can be managed well but good communication of the risks and the impact on the patient of potential complications and their potential treatments, done well before surgery, is paramount.

Even after death, the question of consent arises with communication to other family members about the wishes of the deceased[4]. The new Human Tissue Act defines what is appropriate consent as well as who may give it[5]. The act makes it unlawful to use bodies or human material for purposes other than that for which the patient gave consent (figure). Hopefully our doctors of the future will have the communication skills they need and a sound knowledge base, to help them inform patients fully under the new curriculum introduced into medical schools and monitored by the GMC.

Patrick J Morrison
Honorary Editor.

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Commentary

Pakistan, Population Programmes and Progress

Samina Mahsud-Dornan.

Accepted 20 May 2007

The Islamic Republic of Pakistan celebrated its Golden Jubilee in 1997, 50 years after the partitioning of United India from the British Raj. For Pakistan (fig 1), this was also a time to evaluate the health and population status of its people. In Pakistan, during the 1940s, population growth rates begin to accelerate as health improvements lengthened life expectancy and birth rates remained high. In 1947, at the time of independence, Pakistan's population was 31 million. By 1995 it had escalated to 140 million[1]

Fig 1. Map of Pakistan

Family planning programmes were started in the 1950s and 1960s by private and government institutions. Donors such as World Bank and the UN along with the government of Pakistan funded the programmes for family planning (FP). For years these institutions focused only on women as it was thought that FP was the preserve of women, therefore the audience was 100% female.

In 1947, the fertility rate was 7.5 per women and the population growth rate 4.5% per year. In the 1990s these were reduced to 5.1 and 2.9, respectively, but this reduction is negligible. Presently, 41% of the total population in Pakistan is under the age of 15 years. A large number of young people are about to enter their reproductive years, virtually guaranteeing continued rapid population growth for the foreseeable future (fig 2). By the year 2035, Pakistan's population is projected at 260 million (UNFPA, Pakistan).

More than 50 years have passed, millions of dollars have been

Fig 2. Rapid population growth

spent, multiple resources have been exhausted and Pakistan still adds four million people to its population each year. Contraceptive use went up from 6% in 1969 to just 18% in 1995[2]. Pakistan's average of six children per family has barely fallen since 1960s[2] and the population density is 169/km^2 (fig 3). In comparison, the USA population density is 28/km^2.

Pakistan faces a daunting challenge. With 140 million people, it is currently the world's seventh largest country and will become the

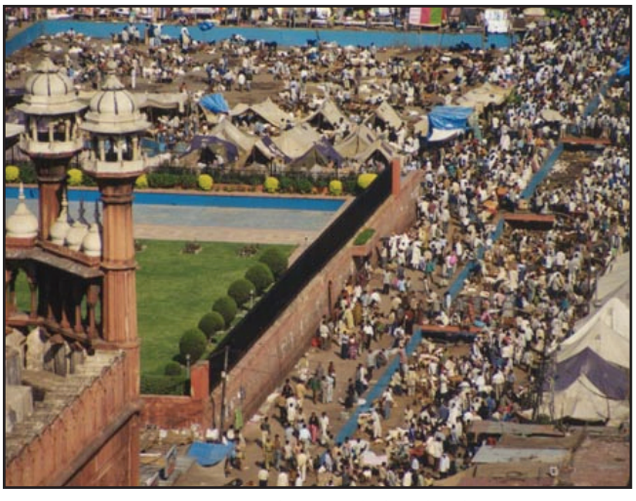

Fig 3. Increasing population density

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third biggest contributor to world population growth. According to United Nations projections, the Pakistan population will grow to over 380 million by the year 2050, surpassing the United States, Indonesia, Brazil, and Russia to become the world's third largest country behind India and China. With the highest population growth rate for any large Asian nation, Pakistan will certainly experience dramatic declines in per capita availability of arable land, water, and forest resources. Already rapid population growth at three percent per year is eroding economic gain. The question arises - what went wrong and why?

The profile above reflects the lack of success to date of Pakistan family planning programme, which is also one of the world's oldest programmes. Inconstant political support has been a prime reason for programme failure. Frequent changes in leadership have contributed to constantly shifting strategies coupled by weak implementation. Population programmes lack adequate geographical coverage and community outreach[3]. In addition, the following factors explain poor performance and make the picture of reproductive health in Pakistan grim:

- Each year, about 30,000 women die from complications of pregnancy, childbirth or unsafe abortion reflecting high maternal mortality ratio of 600 deaths/100,000 live births and frequent pregnancies, which increase the risk to maternal death. During her life time, a Pakistani woman has a 1 in 23 chance of dying from maternal causes compared to 1 in 5,000 in the industrialised world.
- Religious controversies about women's role in society have spilled over into the family planning debate. The organised religious political parties officially oppose the population programmes and many people still believe that family planning is un-Islamic thus undermining political support for family planning issues.
- The practice of purdah (public view through veiling) makes it more difficult for women to obtain social services, including family planning. In 1991, only a quarter of women could go unaccompanied to a clinic. Poor programme outreach exacerbates the problems facing women who observe purdah[3].
- A preference for sons over daughters for labour and old age security leads to higher fertility rates[4].
- Poor communication between spouses aggravates differences in family size desires. In a survey in 1991, one third of both husbands and wives did not know their spouse's attitude towards family planning. Among those women who believed their spouses disapproved, one third were mistaken – their spouses actually favoured family planning.
- Literacy rates in Pakistan of 21 percent for women and 47 percent for men are among the lowest in the world. The positive relation between education and contraceptive use holds in Pakistan as almost everywhere. Women with secondary education are more than three times as likely to use family planning as those who never attended the school as education confers women higher status with marriage and greater voice within household and reproductive decisions[5].
- In many developing countries and even in the developed world, most family planning services are still geared towards the female population. Population development and medical institutions have often neglected men's influence on decisions related to family planning.
- Uncertainty regarding government and international donor's willingness to continue to provide adequate financial support also remains. Budget deficits and economic pressures pose a constant threat to social spending especially population programmes.
- The federal and provincial population programmes with the government system has not enjoyed the same standing as most other government agencies and departments. Staff working in these agencies usually do not receive full civil service status leading to poor workers' morale and productivity because of the programmes ambiguous position within government.
- Besides the huge problem and relatively low priority of programme issues such as weak supervision, overextended training capacity, problems with contraceptive supply systems, tension in the relationship between the government and private sector family planning NGOs, and weak involvement of private physicians, all compound the problem.

CONCLUSIONS AND RECOMMENDATIONS

Despite this grim picture, we cannot afford to stop and have to move forward. Issues relating to family planning and reproductive health services are complex and intertwined. Solutions also need to be comprehensive and integrated. The government of Pakistan along with UNFPA and a host of private NGOs are working on these issues and many others, to contain the population. Population stability may eventually be achieved[6].

The Population Action International report[2] recommendations relate to strengthening organisational and management issues of family planning programmes to achieve its coverage and effectiveness; and other relate to changing approach to delivering family planning services and improving the overall status of women. The most important of actions suggested include: expanding family planning concept beyond FP to reproductive health services, generating positive attitude among high public and political officials, organizing effective media campaign through celebrity endorsements, improve existing service quality, involving men by providing vasectomy and other reproductive services, strong emphasis on women social status and education, involving religious leaders voice to endorse the programmes and the role of donor agencies to continue with their responsibility to support a struggling economy and a young nation.

The author has no conflict of interest.

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Commentary

The Human Tissue Act (2004), anatomical examination and the importance of body donation in Northern Ireland

Samantha J Taylor, David J Wilson

Accepted 28 March 2007

INTRODUCTION

The enactment of the Human Tissue Act (2004) has had a significant impact. In this commentary, we look at the legislation in terms of anatomical teaching and in doing so raise awareness of the importance of body bequeathal to medical teaching.

Following events at Alder Hey and the Bristol Royal Infirmary, in which it was revealed that there had been violations of the Human Tissue Act 1961[1], the UK government responded by initiating the so-called *Kennedy*[2] *and Redfern*[3] enquiries at the Bristol Royal Infirmary and Royal Liverpool Children's Hospital and the Northern Ireland equivalent *O'Hara* Inquiry[4]. All three enquiries found that the current law was not comprehensive or internally consistent for either professionals or families involved[5].

September 1st 2006 marked the enactment of the new Human Tissue Act (2004) legislation. This Act has far reaching implications for Clinical researchers, Pathologists, Anatomists and Surgeons. Many saw the bureaucratic burden that the new legislation imposed as both unhelpful and unwieldy. For example, the Human Tissue Authority (HTA) has stipulated that all activities are documented and followed within the framework of Standard Operating Procedures (SOPs) and Service Level Agreements (SLAs).

Perhaps the most significant change in the legislation concerned obtained consent for examination and retention of human tissue for scheduled purposes (research, transplantation, education and training). This was because removal, storage and use of organs and tissues from adults and children without proper consent were the issues that created the most public concern. The Act clearly defines appropriate consent as well as who may give it and makes it unlawful to use bodies or human material for purposes other than that for which they were consented.

HUMAN TISSUE AUTHORITY (HTA)

The HTA was established as the regulatory authority to oversee all activities which fall within the scheduled purposes. The removal, storage, use and disposal of human material have been codified by the HTA in terms of both Codes of Practice and Standard Operating Procedures (SOPs). It is hoped that this regulatory authority, by making consent the fundamental principle in the use of human tissue, will provide the necessary reassurance to the public. The HTA has issued specific codes of practice for all scheduled purposes, anatomical examination falling within the remit of education and training. This is somewhat paradoxical: anatomical examination comes under this regulatory authority for obvious reasons, but has been stringently regulated since the 1800s when grave-robbing was used as a way of supplying cadavers to medical schools[6].

ANATOMICAL LEGISLATION

The Anatomy Acts of 1832, 1871 and 1984

The part of the Act dealing with the activities associated with the traditional dissecting room, so-called 'anatomical examination', dates back over 170 years when it was argued that "a knowledge of the causes and nature of sundry diseases which affect the body and of the best methods of treating and curing such diseases and the healing and repairing diverse wounds and injuries to which the human frame is liable cannot be acquired without the aid of anatomical examination" The Anatomy Act, 1832. Whilst this assertion is still widely accepted, particularly by medical schools in Great Britain and Ireland where the majority still continue with cadaveric dissection, there are some who argue that there are alternative ways to obtain the necessary knowledge[7].

THE ANATOMY ORDER (NORTHERN IRELAND) 1992

In England and Wales the 2004 Human Tissue Act replaced the Anatomy Act of 1984, whilst in Northern Ireland it superseded the Anatomy (Northern Ireland) Order 1992. Why the 1984 legislation was not extended to Northern Ireland is something of a mystery, as there was an eight year period in which legislatively the Anatomists in Northern Ireland continued to work under the Anatomy Act of 1832 and 1871 (this later amendment of the 1832 Act was simply to make it lawful "for one of Her Majesty's Principal Secretaries of State in that part of the United Kingdom called Great Britain, and for the Chief Secretary for Ireland in that part of the United Kingdom called Ireland, from time to time, by order, to vary the period limited by section thirteen of the recited Act as the time within which certificates of interment are to be transmitted to the inspectors of districts" (copy of

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the Anatomy Act (1832) Amendment Chapter 16 generously provided by Parliamentary Archives, Houses of Parliament, London). Comparison of the Anatomy (Northern Ireland) Order 1992 with the Anatomy Act (1984) reveals that they were essentially the same: the criterion for accepting a bequest of a body was simply "if a person, either in writing at any time or orally in the presence of two or more witnesses during his last illness, has expressed a request that his body be used after death for anatomical examination". Similarly, the retention of parts of the body after the anatomical examination had been concluded was the same - there was a 'statutory period' of three years from the date of the donor's death. In both the Anatomy (Northern Ireland) Order 1992 and the Anatomy Act (1984) there was provision for the "surviving spouse or any other surviving relative of the deceased" to object to either the body being used for anatomical examination or the retention of body parts after the three year statutory period. The vagueness of this legislation led to problems for Medical Schools governed by the 1984 Act in terms of receiving bodies when there was only oral instruction on the part of the donor and disagreement within a family (in one instance the donor's wife expressed different views from those of his daughter from the first marriage). In the Human Tissue Act (2004) there is a hierarchy of qualifying relationships ranked with regard to provision of consent, so that the primacy of wishes can be determined. For example, a spouse or partner is ranked higher than a parent or child, who in turn is ranked higher than a brother or sister. The 1992 Order required written donor and witness signatures for both donation and wishes concerning retention after the statutory period.

Another feature of the 1992 Order was that it was interpreted to allow for the use of cadavers for surgical training purposes. This facility, although not extensively used, was important in that it allowed surgeons to research different approaches to procedures without putting patients at risk.

BODY DONATION IN NORTHERN IRELAND

Over the years, Anatomy in The Queen's University of Belfast has observed wide fluctuations in the number of bodies received for anatomical examination. Preliminary analysis of the numbers of bequeathals grouped in 5 year periods has revealed that between 1957 and 1962 only 55 were accepted from Northern Ireland whereas in the period 1977-1982, 196 bequeathals were accepted. The average student numbers annually (medical and dental combined) for these periods were 95 and 191 respectively.

The academic year 2005/2006 marked the first of the expanded medical student numbers with the intake of medical and dental students rising to 313 Whilst student numbers have increased, the number of bequeathals over recent months has declined. This prompted a press release from the then Inspector of Anatomy at the behest of the University to inform the public of the shortage of bodies for undergraduate teaching. She stated that "the successful training of doctors and dentists depended on body donation"[8]. By increasing the awareness of the importance of dissection for the successful training of doctors and dentists it is hoped that this will encourage individuals to consider making such a bequeathal. This issue is not new nor is it just a regional problem.

Records in the Department have revealed that in the early 1970s, the issue of body donation for dissection was discussed in the local press by the Professor of Anatomy at the time, Professor Jack Pritchard, who stated "The body is extremely useful for medical research and teaching. We can't teach our medical students without bodies". Medical Schools in England and Wales have also witnessed a reduction in the number of bodies available for undergraduate and postgraduate teaching[9].

As anatomists, we consider it essential that medical and dental students develop a sound knowledge and understanding of anatomy and anatomical relations, and the most successful way of achieving this is to dissect (fig 1). However, it is recognised that such an assertion regarding the value of dissection as a teaching method in gross anatomy lacks objective evidence[10]. Dissection also gives students the opportunity to observe pathological conditions, anatomical abnormalities and variations[11]. This need has become even greater since the General Medical Council's document *Tomorrow's Doctors* (1993) led to a reduction in anatomy teaching time in many medical schools. At Queen's, the difference between the old and new curricula (pre and post 1996) saw a reduction from 384 hours in the old course to 183 hours of anatomy in the new integrated course[12]. As a consequence, the authors found that the knowledge of surface anatomy of graduating doctors' was reduced. The knock-on effect of this has been increased demand for access to cadaveric specimens for postgraduate trainees. To meet these demands the Royal College of Surgeons of England is currently exploring the feasibility of establishing generic core skills courses throughout the UK.

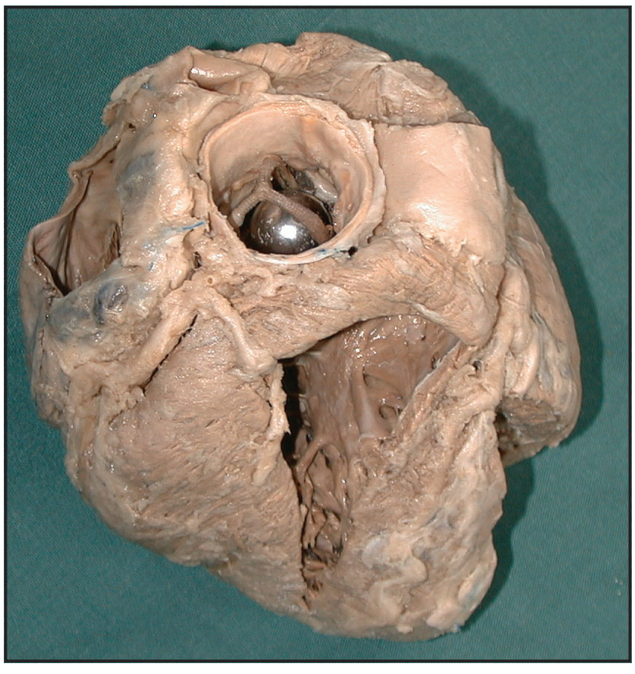

Fig 1. Retained heart specimen, plastinated as per the work of Gunther von Hagens. Of particular interest is the aortic valve replacement.

REGULATORY AUTHORITY FOR TISSUES AND EMBRYOS (RATE)

It seems that the HTA will be a transitory structure as it is

to be combined with the Human Fertilisation and Embryo Authority (HFEA, established in 1991) to become the Regulatory Authority for Tissue and Embryos (RATE)[13]. This single Authority will also take responsibility for the regulation of the supply of blood and blood products, formerly the remit of the Medicines and Healthcare Products Regulatory Agency. The provisional timetable for the formation of this single Authority is suggested as 2008, but will depend on the need for primary legislation. In doing so, the Government argues that it will bring convergence to all regulatory aspects dealing with human biological tissues.

We hope this brief account raises awareness of the important issues – the new regulatory framework imposed by the Human Tissue Act (2004) and secondly, the importance of dissection and thus body bequeathal to the training of future doctors and other health professionals.

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Review

The use of mechanical bowel preparation in elective colorectal surgery

Alison S McCoubrey

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ABSTRACT

Background: Mechanical bowel preparation (MBP) prior to elective colorectal surgery has been in use for many years. It is considered important in preventing post-operative infectious complications after colorectal surgery. The evidence to support these claims is lacking within the medical literature and yet this still remains standard practice in many hospitals. A literature search was undertaken to ascertain the evidence available regarding the use of MBP in elective colorectal surgery.

Methods: The search included the databases PubMed, Medline and Embase using the keywords "mechanical bowel preparation", "bowel cleansing" and "elective colorectal surgery", a search of recent issues of relevant journals including Diseases of the Colon and Rectum and British Journal of Surgery and backward chaining from articles obtained.

Results and Conclusion: Most authors recommend that colorectal surgery is safe without pre-operative MBP but that there may some situations in which it may be beneficial (e.g. if there is a small tumour or the possible need for intra-operative colonoscopy). The implication for clinical practice in this situation is that there is not enough strength of evidence at present to recommend a change in practice. There is a need for further higher powered trials to try to answer this question definitively.

Keywords: mechanical bowel preparation, colorectal surgery

BACKGROUND

Mechanical bowel preparation (MBP) prior to elective colorectal surgery has been in use for many years. Early observational studies and long-standing clinical experience have shown that removal of faecal matter from the bowel lumen prior to surgery has been associated with decreased patient morbidity and mortality[1]. It is still commonly used in routine practice today[2]. In fact, in a recent survey of members of the American Society of Colon & Rectum Surgeons, 99% of respondents routinely use MBP although 10% question its use[3]. This is in keeping with common belief that clinical practice often is not evidence based but is based on tradition, previous teaching and anecdote.

MBP is considered important in preventing post-operative infectious complications after colorectal surgery[2,4-10]. Important infectious complications include wound infection, intra-abdominal abscess formation and anastomotic leakage. There are a number of ways in which MBP is thought to act. It may decrease intraoperative contamination with faecal material thereby reducing the incidence of post-operative wound infection and residual intra-abdominal infection[6,7,9,10]. It may prevent mechanical disruption of the anastomosis by the passage of hard faeces[9] and improves the handling of the bowel intra-operatively[2,7]. It may reduce the bacterial count within the colon[7,10]. Conversely, it may also be associated with bacterial translocation through the bowel wall hence possibly contributing to post-operative infectious complications[5,11]. The evidence to support these claims is lacking within the medical literature and yet this still remains standard practice in many hospitals[4,12].

Primary colonic anastomosis is considered unsafe in unprepared bowel but there is little data to suggest that infectious complications are decreased by MBP[10]. Bowel preparation is unpleasant for patients and can be associated with complications such as dehydration, nausea, vomiting, mucosal lesions, hypokalaemia and other electrolyte disturbances[1,9,11]. The omission of this practice from pre-operative preparation would be welcomed by nursing staff and patients alike.

METHODS

A literature search was undertaken to ascertain the evidence available regarding the use of MBP in elective colorectal surgery. This included a search of PubMed, Medline and Embase using the keywords "mechanical bowel preparation", "bowel cleansing" and "elective colorectal surgery", a search of recent relevant journals including *Diseases of the Colon and Rectum* and *British Journal of Surgery* and backward chaining from articles obtained. The search was restricted to English language articles and a timescale of 10 years was chosen to give a balanced view of this topic.

In this review, mechanical bowel preparation will be defined as an oral preparation given prior to surgery to clear faecal material from the bowel lumen. There are a number of different preparations available including polyethylene glycol,

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mannitol and sodium picosulphate. Rectal enemas may also be administered before low anterior resections to ensure that the rectum is empty.

Elective colorectal surgery is defined as any surgery undertaken on a planned basis for any condition of the colon or rectum requiring bowel resection and primary anastomosis. This will include colorectal carcinoma and inflammatory bowel disease.

There are a number of recent randomised controlled trials (RCTs) to evaluate the use of MBP prior to elective colorectal surgery,[10,11,13,14] and specifically for left-sided resections[5]. Many of these studies are underpowered therefore introducing the possibility of a Type II error and limiting the use of these results in clinical decision-making (Table I).

This lack of power in studies is somewhat overcome by the use of meta-analyses and systematic reviews of the literature but the reader must be aware that these methods also have their limitations. A number of meta-analyses and systematic reviews were used in this review[1,2,7-9,15].

DISCUSSION

Six systematic reviews were identified in the literature assessing the role of MBP in preventing infectious complications following colorectal surgery[1,2,7-9,15].

The meta-analysis carried out by Platell & Hall[7] found a statistically significant increase in the incidence of wound infection in those patients receiving MBP when considering the three included RCTs. This may have been influenced by the rate of wound infection seen in one trial that used a five day regime of MBP. The anastomotic leakage rate was also higher in the MBP group but not significantly so. Each RCT used a different type of MBP and this lack of standardisation affects the validity of the results. The included studies were also underpowered thereby introducing a high possibility that they failed to detect a significant difference in the results (type II error). Evidence from the prospective and retrospective studies was in favour of no MBP in pre-operative period.

A subsequent review of the literature by Zmora *et al*[9] appraised four RCTs. One of the studies found an increased risk of anastomotic leakage and intra-abdominal infection but no increased risk of wound infection in the group of patients receiving MBP. The remaining RCTs found no significant difference in intra-abdominal infection rate but a slight increase in wound infection rate in the MBP group.

TABLE I:

RCTs examining MBP

	Zmora 2003	Fa-Si-Oen 2005	Ram 2005	Bucher 2005	Miettinen 2000
No. of patients included	415	250	329	153	267
No. of patients excluded	35	0	Not given	0	12
No. of pt (MBP/no MBP)	187/193	125/125	164/165	78/75	138/129
Mean age (MBP/no MBP)	68/68	68/70 (median)	68/68	63/63	61/64
Cancer % (MBP/no MBP)	78/78	90/92	75/88	32/28	46/55
L colon surgery % (MBP/ no MBP)	68/72	48/58	89/85	100/100	45/47
Type of prep	Polyethylene glycol	Polyethylene glycol	Sodium phosphate	Polyethylene glycol	Polyethylene glycol
Antibiotic	Yes	Yes	Yes	Yes	Yes
Same length of prophylaxis	No	Yes	Yes	No	Yes
Rectal enema	Yes	No	No	Yes	No
Anastomosis % (stapled / handsewn)	Not given	7/93 (MBP) 8/92 (no MBP)	94/6 (MBP) 98/2 (no MBP)	Not given	60/30 (MBP) 62/28 (no MBP)
Surgeon/trainee %	Not given	42/59 (MBP) 50/50 (no MBP)	37/63 (MBP) 32/68 (no MBP)	Not given	Not given
Anastomotic leak % (MBP / no MBP)	3.7/2.1 (NS)	5.6/4.8 (NS)	0.6/1.2 (NS)	6/1 (NS)	4/2 (NS)
Wound infection % (MBP / no MBP)	6.4/5.7 (NS)	7.2/5.6 (NS)	9.8/6.1 (NS)	13/4 (NS)	4/2 (NS)
Intra-abdominal abscess % (MBP / no MBP)	1.1/1 (NS)	Not given	0.6/0.6 (NS)	1/3 (NS)	2/3 (NS)

NS = not significant

There were conflicting results in the non-randomised studies with some showing an increased rate of infection and others reporting no difference in infection rates between the groups.

The remaining four meta-analyses only included RCTs[1,2,8,15]. All authors agreed that MBP was of no benefit in preparation for colorectal surgery and it may be detrimental to the patients' outcome[1,2,8]. Wille –Jorgensen *et al*[15] found that although initial analysis showed a significantly higher rate of anastomotic leakage in the MBP group, this significance disappears when sensitivity analyses are applied thereby weakening the conclusion that MBP leads to an increased rate of anastomotic leakage.

Slim *et al*[8] found there was significantly more anastomotic leakage in the group of patients receiving MBP and a tendency to a higher rate of wound infection but this was not statistically significant. This group repeated the analysis excluding the poor quality trials and the results still favoured a no MBP regime although this was not statistically significant.

Only two meta-analyses looked at MBP in rectal surgery specifically[1,15]. Willie-Jorgensen *et al*[15] found that when results were stratified for colonic and rectal surgery there was no trend in either direction. Guenaga *et al*[1] found that the results of stratification favoured no MBP but this was not statistically significant. This is of more clinical importance as it may be difficult to perform a low anterior resection and anastomosis with a loaded rectum[15]. Both authors suggest that further trials evaluating the use of rectal preparation with enemas may be useful. Guenaga *et al*[1] also mention that the use of pre-operative radiotherapy would be an important consideration in assessment of bowel preparation for rectal surgery as many patients with rectal cancer undergo pre-operative radiotherapy.

All but one of the five RCTs examining MBP[5,10,11,13,14] found no significant difference in the rate of anastomotic leakage and wound infection between patients receiving MBP or not[10,11,13,14]. The largest trial was undertaken by Zmora *et al*[10] with 415 patients recruited. There are several flaws in the methodology of this trial introducing bias and compromising the validity of the results.

There was no difference found in the rate of post-operative infectious complications between the two groups. The rate of diarrhoea post-operatively was significantly more common in the group receiving MBP but this is of little clinical significance, as many patients will experience an increased stool frequency once the bowels become active. The authors acknowledge that separating the role of MBP in post-operative infection rate is difficult and ideally all other measures should be constant. They also note that the study is underpowered to detect a 5% difference in infection rate.

The RCT conducted by Bucher *et al*[5] comparing MBP with no MBP in patients undergoing elective left-sided colorectal surgery found an increase in the total incidence of infectious abdominal complications in the group receiving MBP (22% v 8%; p=0.028). This led the authors to conclude that there was good evidence to suggest that the practice of MBP should be re-evaluated. They gave an enema pre-operatively to all patients undergoing an anterior resection regardless of whether they had been randomised to MBP or not, decreasing the internal validity of the results. If anastomotic leak rate (a more clinically important outcome than wound infection) were to be used as the primary end-point then the study would need 514 patients in each group.

The trial conducted by Ram *et al*[14] was not properly randomised, introducing methodological bias and limiting the value of the results of this study. There was no definition of sample size and patients with low rectal anastomosis were excluded. Again, the assessor of outcome was not blinded to the intervention, introducing another source of bias. No statistically significant difference in the frequency of infectious complications was observed between the groups yet the authors concluded that "mechanical bowel preparation is unnecessary for safe elective colonic and colorectal surgery". But they recommend MBP in selected cases including the resection of small tumours when palpation of the colon may be necessary or when intra-operative colonoscopy may be performed.

Fa-Si-Oen *et al*[13] conducted a well-designed multi-centre RCT, reported in 2005. Approximately half the resections carried out in this study were left-sided. This is important as it is now generally accepted that right-sided anastomosis is safe without MBP. This study excluded patients undergoing rectal surgery. There was no significant difference in wound infection or anastomotic leak rate but the bacterial swab results used to define wound infection in this study were only correctly obtained in 185 out of 250 patients therefore this may not be an accurate reflection of the true rate of wound infections. This study could not demonstrate an additional protective effect for MBP but it was an interim analysis and was underpowered. As a result, conclusions for clinical practice cannot be drawn from these results.

Miettinen *et al*[11] reported the results of a prospective, randomised study including patients undergoing rectal surgery. There was no significant difference in infectious complications found between the two groups but it is difficult to conclude on the influence on anastomotic leakage from these results as the study included patients who did not undergo an anastomosis.

A number of these reported trials are underpowered thereby limiting their ability to detect a clinically significant difference in outcome between the two study groups[10,11,13]. One way of overcoming the problem of small sample sizes is to carry out a multi-centre trial where a larger number of patients are easier to recruit. A limitation is that they introduce heterogeneity in operative and peri-operative techniques. This is important, as surgical technique may be the single most important factor in influencing the surgical outcome[9]. All these studies agree that elective colorectal surgery may be safely performed without MBP and that there is no evidence to continue this invasive practice with potentially negative side effects.

Memon *et al*[16] carried out a retrospective non-randomised trial based on operating surgeon preferences using a questionnaire. The validity of this questionnaire is unclear as no pilot study was carried out prior to the collection of definitive data. Follow-up of the patients was obtained using the hospital records therefore relying on accurate clinical notes, which are not always available.

One hundred and thirty six patients who underwent elective left-sided colorectal procedures for non-obstructive large bowel pathologies were identified using the hospital computer system. Coding errors may mean that some eligible patients were excluded from the analysis. This, along with the lack of randomisation, would introduce significant bias.

No statistical difference was found between the two groups for all infectious complications and mortality. The authors recognise the limitations of their results and do not recommend any changes in practice but do suggest that a prospective randomised trial should be performed to demonstrate the impact of MBP on morbidity and mortality in patients undergoing elective colorectal surgery.

A prospective, observational trial performed by van Geldere *et al*[17] assessed the outcome of 250 consecutive patients who underwent resection and primary anastomosis of the colon and upper rectum under the care of a single surgeon. None of these patients received MBP pre-operatively. Both emergency and elective procedures were included in analysis. Results were favourable with an overall wound infection rate of 3.3% and an anastomotic failure rate for left-sided resections of 1.2%. The authors recommend that more powerful randomised trials are needed but in the hands of a single surgeon, primary anastomosis of unprepared bowel is safe with relatively few complications.

A small observational study conducted by Ahmad *et al*[4] found an anastomotic leak rate of 4.2% and a wound infection rate of 8.5%. The average age of the sample was lower than that of the typical population undergoing colorectal surgery. This fact, plus the small sample size, compromises the external validity or the extent to which the results can be generalised to other samples or situations.

CONCLUSION

There are a number of meta-analyses, systematic reviews and RCTs looking at the efficacy of MBP in preventing post-operative infectious complications following elective colorectal surgery. Unfortunately many of these trials are underpowered and have a high chance of a type II error[10,11,13]. Most authors recommend that colorectal surgery is safe without pre-operative MBP but that there may some situations in which it may be beneficial (e.g. if there is a small tumour or the possible need for intra-operative colonoscopy)[14].

The implication for clinical practice in this situation is that there is not enough strength of evidence at present to recommend a change in practice. There is a need for further higher powered trials to try to answer this question definitively. The only way that this may be achieved is by multi-centre trials where it is easier to recruit a large number of patients but it must be taken into consideration that this will introduce heterogeneity in the operative and peri-operative techniques which may have an influence on overall outcome[9]. There is a need for larger clinical trials in this area to address whether MBP, with its potential side effects, is truly necessary prior to elective colorectal surgery.

Further studies are required to assess the use of rectal preparation alone prior to rectal surgery[1,15] and also to include patients who have undergone pre-operative radiotherapy[1] as this is a common occurrence in patients who have rectal carcinoma and these patients may subsequently undergo resection with primary anastomosis. It is clear that further research is needed to clarify the role of MBP in elective colorectal surgery to ensure that the patients are receiving the most appropriate treatment with the least adverse effects.

The author has no conflict of interest

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Paper

Chronic pain after hernia surgery –An Informed Consent Issue

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SUMMARY

Chronic severe pain following inguinal hernia repair is a significant post-operative problem. Its exact cause and lack of evidence-based treatment path present problems in the effective management of this surgical complication. We retrospectively reviewed the records of patients diagnosed with chronic pain following open inguinal hernia repair between November 1995 and November 2000, who were under the care of the senior author. Over the five-year period, 146 patients underwent inguinal hernia repair. 88 (60%) had suture repair (darn & modified Bassini's) and 58 (40%) underwent a Lichtenstein mesh repair. Thirteen patients (9%), (3 in suture vs. 10 in mesh group, p=0.004) developed chronic severe pain. Examination revealed maximal tenderness over the genitofemoral nerve (GF) distribution (n=5), over the medial end of the scar (n=3), over the pubic tubercle (n=1) and in the ilioinguinal nerve distribution (n=1) No abnormality was detected on clinical examination in the cases of three patients. Treatment involved GF nerve block (n=5), local injection of Chirocaine and Methylprednisolone acetate into the medial end of the scar (n=3), Chirocaine and Methylprednisolone acetate into the pubic tubercle (n=1), ilioinguinal nerve block (n=1), re-exploration with re-suturing of the mesh (n=1), and Amitriptyline (n=2). At a median follow up of 45 months (range: 24-87), 10 (77%) are completely pain free; two (15.4%) had mild pain and one patient still has significant persistent pain. To conclude, chronic severe pain occurred in nine percent of patients following primary open inguinal hernia repair. The majority of patients were successfully treated by therapeutic injection into the point of maximal tenderness.

INTRODUCTION

Chronic groin pain following inguinal hernia repair is a potentially incapacitating complication, and presents a diagnostic and therapeutic challenge to the clinician. The exact cause for the pain is not clear. However, it is believed to be due to entrapment of the ilioinguinal, iliohypogastric or genital branch of the genitofemoral nerve either in the sutures, mesh or scar tissue[1-3]. Both routine preservation and division of the genital branch of the genitofemoral nerve have been advocated to prevent pain[2,4,5]. It is not clear from the literature whether careful preservation of the ilioinguinal nerve is associated with lower incidence of chronic pain[2,.6]. To date, the evidence for the ideal management of chronic groin pain is unclear. We describe our experience of managing chronic groin pain patients with nerve blocks. This involved injection of local anaesthetic, with or without steroid, into the area of maximal tenderness on clinical examination, with or without the addition of anti-neuropathic medication.

MATERIALS AND METHODS

The records of all surgical patients who underwent an inguinal hernia (including Gilmore's groin) repair, under the care of the senior author at the City Hospital, Belfast, between November 1995 and November 2000 were reviewed. Their recorded demographic, clinical, operative, and follow-up details were analysed. Details of sporting activity, professional status, and history of injury (in the form of groin strain) were also obtained. Patients with pre-operative groin pain and obscure hernia had a herniogram to confirm the presence of hernia before surgery.

Informed consent, including explanation of the risk of chronic pain, was obtained from all patients in an outpatient setting. All patients, particularly those with groin pain due to suspected Sportsman's hernia, were informed that surgery may not relieve their symptoms. All patients were consented by either the senior author or by the senior registrar who would be performing the operation, either under the senior author's supervision or independently.

All surgery was performed under general anaesthesia. Operative techniques included nylon darn, modified Bassini's and Lichtenstein mesh repair (the latter technique was utilised in the later part of the series). Ilioinguinal nerve was identified and preserved in all patients. Patients were reviewed in the surgical outpatients' clinic four to six weeks following their hernia repair. A detailed discharge letter, with a request to contact the senior author if patients developed any post-operative complications was sent to each patient's General Practitioner. Eighteen patients were referred back to the surgical outpatient clinic because of persistent pain. Chronic pain was defined as pain persisting beyond the normal tissue healing time: 3 months[7]. Each patient was asked to describe the character, site, and severity of the pain. Patients were also asked about whether pain was interfering with their daily routine and/or physical/sporting activity. Pain severity was classified into mild, moderate, and severe on a three point verbal scale. All patients were examined either by the senior author or by a senior registrar. Examination included inspection and palpation of the operation site with the patient supine and erect, both with, and without, performing the

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Valsalva manoeuvre. All eighteen patients, following the exclusion of hernia recurrence as a cause, were referred to the pain clinic run by anaesthetists with a special interest in the management of chronic pain.

Treatment depended mainly upon the nature of the reported pain. Patients with predominantly neuropathic symptoms were treated with Amitriptyline. Patients with somatic pain and a well-defined tender area were treated with nerve blocks using either 0.5% Chirocaine® (Abbott) alone or with 20mg of Methylprednisolone acetate (Depo-Medrone®, Pharmacia). Patients with mixed nature pain were treated by the use of a nerve block, all administered by a consultant anaesthetist using the technique described by the New York School of Regional Anaesthesia (NYSORA) and Amitriptyline. All patients were evaluated by the pain clinic every three months. On the day of their last follow-up, the first author contacted all patients by telephone to determine whether they were still experiencing pain.

STATISTICAL ANALYSIS

Statistical analysis was carried out using the Statistical Package for Social Sciences (SPSS) for Windows, version 11 (SPSS, Chicago, Illinois, USA). Chi-square (χ^2) test was used to examine the association between type of repair and the presence of chronic pain. $P<0.05$ was significant.

RESULTS

There were 146 open inguinal hernia repairs performed under the care of the senior author between November 1995 and November 2000. 88 (60%) patients had suture repair (Darn & modified Bassini's) and 58 (40%) underwent mesh repair in the later part of the series. Eighteen patients (12.3%) reported persistent groin pain 3 months after surgery. Five patients were excluded from the study. Four of the five had mild groin pain and no obvious abnormal findings after physical examination and a herniogram. The use of oral analgesia alone gave complete pain relief. The fifth patient came six months after surgery, with numbness over the medial end of the scar and the lateral aspect of the upper thigh. The patient was referred to the pain clinic, but failed to attend. Of the remaining thirteen patients, 10 were male and 3 female with a median age of 58 years (range: 27-72). The median duration of chronic pain was six months (range: 4-16).

Four patients reported a history of 'groin strain' injury; three were professional footballers and the other patient's work involved the lifting of heavy weights. Of the thirteen patients, eight had indirect inguinal hernias, two direct inguinal hernias and three Gilmores' Groin - diagnosed in patients with a tear in the external oblique aponeurosis[8]. Apart from one patient with an irreducible indirect hernia, all the other hernias were repaired on an elective basis. Ten patients underwent Lichtenstein mesh repair and three had suture repair ($p=0.004$). The mean hospital stay was 1.7 (range: 1-4) days. One patient developed a wound haematoma requiring evacuation.

On examination there was tenderness over the genitofemoral nerve distribution in five patients. One of these five patients also had tenderness over the pubic tubercle on the operated side, and one had tenderness over the scar. All five patients were treated with a genitofemoral nerve block using 0.5% Chirocaine ® (Abbott) in combination with 20mg of Depo-Medrone® (Pharmacia) injection. In addition, one patient was also treated by a local injection of Chirocaine® over the pubic tubercle, and a repeat genitofemoral nerve block after two months. Two of the five patients also received Amitriptyline. Amitriptyline was started with a small dose of 10 mg/once a day and gradually increased to 50mg/day over a period of three to six months.

Three patients had tenderness over the medial end of the scar with no obvious hernia and all were treated by a local injection of Chirocaine® and Depo-Medrone® into the affected area. One patient required three repeat injections at bimonthly intervals. Another patient had tenderness over the pubic tubercle, and again, the use of a local injection of Chirocaine® and Depo-Medrone® achieved complete analgesia. Two patients, with neuropathic pain were treated by Amitriptyline alone, and had complete symptom relief at 44 and 48 months.

One patient who was still having severe pain in the wound a year after surgery was initially treated with an injection of Chirocaine® into the wound; but this was not successful. So the groin was re-explored, revealing that the prolene mesh had pulled off the inguinal ligament; causing recurrence of the hernia. The mesh was therefore re-sutured. The patient was completely pain free at 85 months.

One patient had groin pain along the distribution of the ilioinguinal nerve, and as the physical findings were normal, was treated by an ilioinguinal nerve block using Chirocaine® and Depo-Medrone®. However, no significant reduction in the intensity of the pain was experienced.

At a median follow up of 45.5 months (range: 24.1-86.7), 10 of the 13 patients (77%) had complete pain relief. Three patients still had pain at the time of their last follow up. Of the three, two had pain of mild intensity which did not affect their physical or sporting activities. The third patient still had significant pain interfering with her household duties at 45 months following the hernia repair. The details of hernia type, method of repair, nature of pain, examination findings and treatment received are summarised in Table I

DISCUSSION

The incidence of chronic pain after inguinal hernia has been estimated to be between 1% and 19%[4,9,10]. In the present study, an internationally accepted standard definition of pain (pain beyond 3 months) was used[7]. We observed chronic, severe pain in nine percent of patients. In a multicentre prospective study looking at the incidence of chronic pain, Alfieri S *et al* observed chronic severe pain in 0.5% of patients at 1-year follow-up[11]. In a questionnaire study, Cunningham *et al* noted that 12% respondents (315 of 883 patients: 36% response rate) had moderate or severe pain one year after open hernia surgery[10]. Callesen *et al* reported that 19% of patients complained of some pain and 6% of patients complained of moderate to severe pain at 1 year following hernia repair[12].

One of the major drawbacks of our study is that we have completely relied on General practitioners to refer patients with chronic pain to senior author's outpatient clinic. Regular follow up of all patients beyond three months would have given the true incidence of chronic pain in this group of

Table I.

Details of examination findings and treatment

No	Type of hernia	Type of repair	Nature of pain	Examination findings	Treatment	Response	Follow up (Months)
1	Indirect	Mesh	Burning sensation	Normal	Amitriptyline	Good	45.5
2	Gilmore's groin	Mesh	Somatic	Tender over medial end of scar	Local injection Chirocaine® and Depo-Medrone®	Good	53
3	Direct	Modified Bassini's	Tingling and hyperesthesia in the ilioinguinal nerve distribution	Normal	Amitriptyline	Good	48.8
4	Indirect	Mesh	Somatic	Normal	Re-exploration and re-suturing of mesh	Good	85.9
5	Gilmore's groin	Darn	Mixed nature	Tender in the region of *GF-area	GF block and Amitriptyline	Mild pain	68.7
6	Indirect	Mesh	Somatic	Tender in the region of GF-area and over the scar	GF block	Good	40.7
7	Indirect	Mesh	Somatic	Tender in the region of GF area and trigger point over pubic ramus	GF block and local injection over tender spot with Chirocaine®	Mild pain	45
8	Gilmore's groin	Modified Bassini's	Somatic	Tender GF area	GF-block	Good	76.9
9	Direct	Mesh	Somatic	Tender over ilio inguinal region	ilioinguinal nerve block	No relief	42
10	Obstructed indirect	Mesh	Somatic	Tender spot over medial end of scar	Local injection with Chirocaine and Depo-Medrone®	Good	42.7
11	Indirect	Mesh	Somatic	Tender spot over medial end of scar	Local injection with Chirocaine and Depo-Medrone®	Good	86.7
12	Indirect	Mesh	Somatic	Tender over pubic tubercle	Local injection with Chirocaine and Depo-Medrone®	Good	30
13	Indirect	Mesh	Mixed nature	Tender over GF area	GF block and Amitriptyline	Good	24

*GF=Genitofemoral nerve

patients. Therefore, the reported nine percent incidence of chronic pain may be an underestimation of the actual incidence of chronic pain.

It is not clear from the literature whether mesh repair is associated with increased incidence of chronic pain. Callesen *et al.* observed a non-significant increase in chronic pain in patients who had mesh repair than compared to patients who had suture repair[13]. In a randomised controlled trial of primary inguinal hernia repair by surgical trainees, Miedema *et al* compared Lichtenstein and suture repairs (McVay and Shouldice) for recurrences and chronic groin pain. The authors noted higher incidence of chronic pain following Lichtenstein repair (38%) than Shouldice repair (7%) ($P<0.05$)[14]. However, a meta-analysis study of 58 randomised controlled trials by the European Hernia Trialists Collaboration found that mesh repair was associated with lower incidence of both hernia recurrence and late post-operative pain (overall persistent

pain: 120 in 2,368 vs. 215 in 1,998; OR 0.36, 95% CI 0.29-0.46; P < 001) when compared with non-mesh repairs[15]. In a questionnaire study, Bay-Nielsen *et al* observed moderate to severe pain in 3.9 percent of patients with no significant difference between open mesh, Shouldice and Marcy repair[16]. We found an increased incidence of chronic pain in patients who had a mesh repair compared with those who had a suture repair (17.2 vs. 3.4%, p=0.004). It is difficult to explain the higher incidence of pain in our mesh group. It may partly be due to the fact that the senior author was much more experienced in performing suture repairs than Lichtenstein repair at the time of the study. Due to the small sample size and the non-randomised nature of the study it is difficult to draw any conclusions about the higher incidence of pain in the mesh group and cautious interpretation of our results is recommended.

The exact cause of the post-herniorrhaphic pain is not clear. Entrapment of the ilioinguinal, iliohypogastric or genitofemoral nerve is thought to be responsible for the pain. Both preservation and routine division of the ilioinguinal and genitofemoral nerves have been advocated[1,4,12]. In a randomised controlled trial; Mui *et al* randomly assigned one hundred patients undergoing open mesh inguinal hernia repair into two groups. One group received prophylactic ilioinguinal and iliohypogastric neurectomy, and the second group did not. The authors noted a lower incidence of chronic pain in the neurectomy group compared to the non-neurectomy group (8% vs. 28.6%; P = 0.008)[17]. In a non-randomised retrospective study, Dittrick *et al* compared the incidence and severity of neuralgia in patients who had elective ilioinguinal nerve division with patients whose ilioinguinal nerve was preserved. A significant increase was noted in the incidence of neuralgia in the non-neurectomy group[18]. However, in a small randomised controlled trial involving 20 patients with a bilateral inguinal hernia; Ravichandran *et al* evaluated the difference in the incidence of pain between the ilioinguinal nerve 'preserved' and 'divided' sides and did not find any significant difference in the pain and numbness between both sides[19].

The evidence base for the effective treatment of post-operative chronic groin pain is unclear. Surgical exploration with division of all three nerves with, or without, the removal of the mesh is associated with mixed results[20-22]. In a series of 20 patients with chronic pain following mesh repair, Heise *et al* observed favourable outcomes in 60% of patients following removal of the mesh, with or without, neurectomy[22]. Amid *et al* observed complete elimination of pain in 39 (80%) out of 49 patients within one month following a triple neurectomy in patients with chronic post-herniorraphic pain[20].

In our series, we obtained similar results with the use of inexpensive, non-operative, less invasive techniques which were performed on an outpatient basis. We achieved a 75% success rate using a combination of nerve blocks and anti-neuropathic medication. Methyl prednisolone acetate is a synthetic corticosteroid providing long-term pain relief when injected into localised areas of chronic and acute inflammation. It acts by inhibiting the inflammatory response and late effects of inflammatory reaction at the site of injection. It is used in combination with local anaesthetic to avoid the pain associated with its injection. We have used Amitriptyline either alone, or in combination with, Methylprednisolone/ Chirocaine in few patients with good results. As a tricyclic antidepressant, amitriptyline is mainly used in the treatment of depression but it is also effective in relief of neuropathic pain (although currently unlicensed) such as in post-herpetic neuralgia, phantom limb pain, trigeminal neuralgia etc. Like Methylprednisolone, the role of Amitriptyline in the use of chronic neuropathic pain following inguinal hernia repair is not fully established.

Some of the drawbacks of these non-surgical options are that the effect may not last long and some patients may require several repeated injections, as we have observed in two of our patients. Nerve blocks or local injections may not work in patients with clinically non-obvious recurrent hernia. It is important to identify patients who do not respond to the non-operative treatment earlier to avoid unnecessary delay in the surgical exploration of groin.

Chronic pain following open inguinal hernia repair can be disabling, sometimes seriously affecting quality of life. It is, therefore, very important to discuss the possibility of resulting chronic severe pain when obtaining pre-operative informed consent. Inguinal hernia surgery is one of the most common operations performed in the UK, accounting for approximately 10% of the general surgical workload[23]. In the UK nearly 80,000 inguinal hernia operations are performed every year[23]. Trainees rarely operate nowadays without supervision unless they are experienced. Trainees, particularly junior ones, may not be knowledgeable enough about the risks involved in inguinal hernia repair[24]. Angelos *et al* used a questionnaire study with 18 first year residents - who are normally asked to obtain informed consent - about their knowledge of the possible risks, benefits, and procedural alternatives for open inguinal hernia repair, laparoscopic cholecystectomy, thyroidectomy, oesophagogastrectomy, and abdominal aortic aneurysm repair. They also asked residents to answer the questions that patients may pose about the operation. It was noted that less than half of the residents were able to answer all the questions posed by the patients. Additionally, they found that only a few residents correctly listed all risks, benefits and alternatives for the above-mentioned procedures. It was concluded that even though first year residents were obtaining 'informed consent' for common operations, many are unable to provide enough information about the risks, benefits, and alternatives for consent to be informed[24]. In the UK the guidance is that consent should be taken by a trainee who is able to perform the operation, or by a consultant. This paper highlights the importance of education of junior trainees about the appropriate issues and skills needed to get informed consent. We believe that each patient must be informed about the possibility of chronic, severe pain and its impact on their quality of life should it occur.

CONCLUSIONS

Chronic severe pain following inguinal hernia repair is a significant problem which has only recently been recognised. It poses major diagnostic and therapeutic challenges to the clinician. We found chronic severe pain in nine percent of patients, mostly following mesh repair. Treatment options vary depending upon the nature of the pain and the physical findings. The majority of patients in this series were successfully managed with nerve blocks. Surgical exploration

should be reserved for patients who do not respond to non-surgical treatment (and then only after careful selection and counselling) and for patients with obvious recurrent hernia on clinical examination. All patients undergoing inguinal hernia repair, irrespective of type, should be informed about the risk of severe and chronic groin pain following a hernia repair. This should be clearly recorded on the consent form.

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Paper

'Doctor - when can I drive?' – Advice obstetricians and gynaecologists give on driving after obstetric or gynaecological surgery

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ABSTRACT

Advising patients when to drive after surgery is a common practice which gynaecologists need to do on a regular basis as a part of their duty to patients. We carried out a literature search regarding advice given on driving after gynaecological surgical procedures, and found no study or research on this area. We then carried out a questionnaire survey of 99 gynaecologists in Northern Ireland. We have identified wide variation in clinical practice, and advocate a United Kingdom wide survey and further studies to find out optimum time to drive after different gynaecological surgeries. There is a need for national guidelines on driving after surgery, which would be of great benefit to gynaecologists, patients, motor insurers, police and all other interested parties.

Key Words: Advice, Driving, Gynaecological Surgery

INTRODUCTION

The Driver and Vehicle Licensing Agency (DVLA; DVLNI in Northern Ireland) advises drivers wishing to drive after surgery should establish with their own doctors when it is safe to drive[1]. The DVLA regulation states that it is the responsibility of the driver to ensure that he/she is in control of the vehicle at all times and to be able to demonstrate that is so, if stopped by the police. It also suggests the driver to check with his/her insurance company before returning to drive after surgery. Insurance companies suggest that they would not advice on this matter and they would accept Consultant's or General Practitioner's advice on this[2,3]. Thus the onus is on doctors to give advice on driving after gynaecological surgery. However there is no evidence in the literature to guide us with this advice. In the absence of guidelines, we surveyed gynaecologists regarding the advice given on driving after surgery. It is the first survey of its kind in obstetrics and gynaecology in the United Kingdom (UK).

MATERIALS AND METHODS.

We carried out an anonymous Postal Questionnaire survey of all 99 consultants and Specialist Registrars in Obstetrics and Gynaecology in Northern Ireland. It included a prepaid reply envelope, and was based on a previous validated questionnaire survey conducted on advice on driving after inguinal hernia repair[4]. It contained questions about advice to drive after common obstetric and gynaecological surgeries including laparoscopic sterilization, operative laparoscopy, abdominal and pelvic surgeries, vaginal repair surgeries, and Caesarean section. We asked if they were aware of DVLA/DVLNI regulations regarding driving after surgery, and what the basis of their advice was, and would they like any guidelines regarding the same. No reminders were sent.

RESULTS

Of the 99 questionnaires sent, 68 were returned; a response rate of 68.69%. The majority of gynaecologists who responded were not aware of the DVLA/DVLNI regulations regarding driving after gynaecological surgeries. (72% not aware, 22 % aware and 6% didn't answer the question).

Most respondents advised their patients (56%) when to drive postoperatively. The advice given when exactly to drive after different surgeries varied (table I). Advice given on simple operative procedures such as laparoscopic sterilization would vary with one of respondents advising to wait at least 3 weeks. With major operations like abdominal or pelvic or vaginal repair surgery or caesarean section, roughly half would advise to wait until 6 weeks after operation, with others advising less than 6 weeks.

Most Respondents (n = 55, 80.9%) replied that common sense and traditional practice was the basis of their advice. 7.3% of respondents (n = 5) said advice of insurance companies was the basis of their advice.

The most common response for the reason for not driving post surgery was the inability to perform an emergency stop (70.6%, n=48). Most respondents (82.3%, n = 56) said that they would like to have guidelines on advice to be given.

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DISCUSSION

The advice given by gynaecologists regarding post operative driving after different gynaecological surgeries is inconsistent. Since gynaecological practice in NI is similar to the rest of the UK, we believe this is representative of practice in the UK.

The ability to perform an emergency stop is fundamental for safe driving. After gynaecological surgeries, the efficiency with which an emergency stop can be executed is dependent on the reaction time and unimpaired, pain free movement of the lower limbs.

Two studies performed after inguinal hernia repair suggest that the patients can drive one week after open hernia repair[5,6]. Wright *et al* carried out a randomised controlled study comparing driving reaction time after open and endoscopic tension free inguinal hernia repair. They found that patients can return to driving one week after the operation compared to earlier advice of ten days or more[5]. Colin *et al*[6] advised that patients should not drive for 10 days after hernia repair.

Considering that most gynaecological abdominal surgeries and caesarean section are done by transverse suprapubic incision, which is similar to the incision used for open inguinal hernia, it may be best practice to use that advice after gynaecological surgeries. If such advice were followed and confirmed by research it would lead to earlier driving after gynaecological surgeries with potential social and economic benefits to patients.

The only current source of advice is patient advice leaflets[7-9]. General advice from patient information sources suggests that patients can usually start driving 3-4 weeks after gynaecological surgery. The exception would be if a patient has had repair surgery in which case the advice is to postpone driving until 6 weeks after the surgery. Patients should make sure before their first journey that they are comfortable doing an emergency stop. They should be certain that they have the strength to press on the brake pedal hard enough to stop at speed. They should also be aware of the position of the seat belt in relation to the site of their surgery. Finally, patients should also check with their insurers who may have additional requirements, which might leave the driver uninsured if an accident were to occur. In our personal communication with major insurance companies and as reported by Giddins[2,3] most felt that:

a) The Patient should take the advice of their doctor if any was given. Failure to do so would probably invalidate the insurance.

b) Any disability notifiable at law should be reported to insurers

c) If the patient followed her doctor's advice, felt safe to drive and then drove in a reasonable way, she would be covered by her insurance.

Ismail[4] conducted a national survey of UK consultant surgeons on advice given regarding driving after groin hernia surgery. They had identified serious deficiencies in the advice given to patients. They had also advocated UK national guidelines. We agree with their recommendation and feel that there should be UK national guidelines for postoperative driving.

CONCLUSION

We have identified wide variation in practice on advice on post operative driving after gynaecological surgeries in NI. We

TABLE I

Gynaecologists advice regarding when to drive after different Gynaecological Procedures.

	Laparoscopic Sterilization		Operative Laparoscopy		Vaginal Repair Surgery		Abdominal /Pelvic Surgery		Caesarean Section	
As soon as they want or comfortable	*29*	42.6%	10	14.7%	03	04.4%	03	04.4%	05	07.4%
As soon as they can do emergency stop	*20*	29.4%	20	29.4%	17	25%	12	17.7%	13	19.1%
Immediately	*00*	00	01	01.5%	00	00	00	00	00	00
24-48 hours	*03*	04.4%	02	02.9%	00	00	00	00	00	00
One week	*05*	07.4%	07	10.3%	01	01.5%	00	00	02	02.9%
Two weeks	*00*	00	04	05.9%	03	04.4%	03	04.4%	02	02.9%
Three weeks	*01*	01.5%	03	04.4%	02	02.9%	02	02.9%	06	08.8%
Four to five weeks	*00*	00	03	04.4%	10	14.7%	08	11.8%	00	00
Six weeks	*00*	00	08	11.8%	27	39.7%	36	52.9%	34	50.0%
More than 6 weeks	*00*	00	00	00	01	01.5%	02	02.9%	01	01.5%
Don't advise / not applicable	*01*	01.5%	03	04.4%	00	00	00	00	01	01.5%
No Response	*03*	04.4%	04	05.9%	02	02.9%	01	01.5%	02	02.9%
More than one response	*06*	08.8%	03	04.4%	02	02.9%	01	01.5%	02	02.9%

advocate further research in the form of UK national survey of consultant gynaecologists on the advice given to find out the practice at national level. Further research should be carried out on the optimum time to drive after different surgeries. There is an urgent need for national guidelines on driving after surgery as expressed by majority of our respondents. It will be of great benefit to gynaecologists, GP's, Patients, insurers, police and other interested parties.

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Paper

Assessment of fertility control efforts in a selected area of Karachi, Pakistan

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ABSTRACT

Aims: To investigate the impact of fertility control efforts on reducing fertility and to study the contributory role of fertility inhibiting factors viz, age of the marriage, breast feeding and post-partum amenorrhea, abortion and use of contraceptives in selected area in Karachi, Pakistan. The aim was to estimate the gap between knowledge of contraceptives and its practice i.e. KAP-GAP as well as to determine the level of unmet need in the PIB colony in Karachi.

Data Source: A sample survey was conducted in PIB colony in Karachi from October 2005 to November 2005 by interviewing 340 married women in reproductive ages. The data was tabulated and John Bongaarts technique[1] was used to analyse the success of fertility control efforts in the selected area.

Results: Of the total of 340 respondents, 38% were currently using contraceptive methods with 26% using OCP's and 12% were condom users. A slight reduction in total fertility (TFR) was noticed.

Conclusion: The population policy of Pakistan envisages achieving population stabilization in 2020 by reducing the annual rate of population growth from 1.9% to 1.3% and TFR at 2.1. This target requires strenuous efforts to make the concept of small family an accepted milieu through an eagerly designed communication and education campaign. Concentration on proximate determinants of fertility particularly breast feeding and prolonging birth interval will not generate opposition from the community because these concepts are in accordance with Islamic injunctions and teachings.

INTRODUCTION:

The recent extraordinary proliferation of human species has been unparalleled in the history of mankind. It has never happened in the past and most probably will never happen in the future. It is an irony that the steep decline in mortality caused an imbalance between fertility and mortality which has resulted in a population explosion. The developed countries of world are in a position to keep pace with the level of mortality by reducing fertility but the developing countries are still confronted with the hazards of high population growth.

The high rate of population growth has socio-economic, health and demographic implications. One serious problem is heavy population pressure in rural areas with resources subsequently depleting and a resultant increase in pressure on urban areas. Karachi is one of the important cities of Asia revealing an urban agglomeration causing demographic fallout resulting in oppressive poverty, unemployment, poor health and general unrest. It has witnessed the first agglomeration of population due to a heavy influx of population in 1947 from India to Pakistan. The population of Karachi was 435,000 in 1941. The national census showed Karachi's population to be 9.856 million in 1998, an increase of more than 8 times in 47 years. The crude birth rate was 32 per 1000 and contraceptive prevalence rate (CPR) was only 22.8%[2,3]. According to United Nations urban agglomerations[4], Karachi was the 16th most populated city in the world having a population of more than 11 million.

TABLE I

Population data of PIB colony

Total population of PIB colony: 98,750
Reproductive women: 19,750
Currently married women (MWRA): 15,405
Total fertility rate (TFR): 4.3
Marital total fertility rate (MTFR): 5.7
Size of sample at 95% level of confidence: 340 respondents

METHODS

This exploratory study comprised currently married women aged 15-49 years (MWRA) living in PIB colony boundaries. An interviewing questionnaire was drawn, pre-tested and finalised. A representative sample was deployed from a selected area in Karachi with an estimated population of

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TABLE II

calculated indices

1. Index of marriage:	2. Index of contraceptive	3. Index of abortion	4. Index of breast feeding and postpartum amenorrhea
TFR = 4.3 MTFR = 5.2 Cm = 0.75	U (contraceptive prevalence rate) = 38% E (effectiveness of contraceptive) = 82% Cc = 0.66	TA= 1 Ca = 0.88	Breast feeding = 20 months Ci = 0.65

about 100,000. PIB colony has a mixed population from high, medium and low socio-economic groups, located in the heart of Karachi – table I. The data was tabulated and John Bongaarts technique[1] was used to analyse the success of fertility control efforts in the selected area.

The TFR was calculated using the formula: TFR = 15.3 x Cm x Cc x Ca x Ci

Where Cm = index of marriage = TFR/MTFR; Cc = index of contraception = 1-1.08 x u x e; (u = use of contraceptive (CPR) and e = effectiveness of contraception); Ca = index of abortion = TFR/TFR + 0.4 x (1+u) x TA; (TA = total abortion per woman in her reproductive period); and Ci = index of post-partum infecundity = 20/18.5 + i (i = length of breast feeding)

RESULTS:

Four indices were calculated – (table II):

This allowed calculation of the TFR = 15.3 x 0.75 x 0.66 x 0.88 x 0.65 = 4.3

DISCUSSION:

Breast feeding and post-partum amenorrhea seem to be influencing fertility highest (35%) followed by contraceptive use (24%) and age at marriage (25%). The lowest contribution is due to abortion (11%). Induced abortion is not permissible in Pakistan except to save the life of a woman.

KAP-GAP and unmet need: An overwhelming majority of MWRA (95%) knew about contraceptives but only 38% were practicing any methods, showing KAP-GAP to the tune of 57%. However, 75% of MWRS expressed that they did not want to have more children but only 38% were current users. This indicates unmet need to the extent of 37%.

CONCLUSION AND RECOMMENDATIONS:

The survey findings suggest that population stabilisation can be achieved in a stipulated period provided fertility inhibiting indices take the following or similar value:

Index of marriage = 0.73

Index of contraception = 0.37

Index of abortion = 0.77

Index of breast feeding = 0.67

TFR = 2.1

The above can only be achieved through an effectively implemented communication and education campaign coupled with fertility control methods universally acceptable and affordable.

The authors have no conflict of interest.

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Paper

Five Year Follow-Up Comparing Tension-Free Vaginal Tape and Colposuspension

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ABSTRACT

Burch colposuspension has been the procedure of choice for stress urinary incontinence, more recently the tension-free vaginal tape (TVT) has been used. A retrospective study on all TVT's and colposupensions was performed. The present clinical condition was assessed using the Bristol Female Lower Urinary Tract Symptoms and Short-Form 12 questionnaires. The median operating time was 50-59 minutes for TVT and 70-79 minutes for colposupension. The median number of day's hospitalization was 3 and 10 respectively. The overall success rate was 88.5% and 92% respectively. No significant difference in subjective outcome was noted at more than 5 years after surgery between the two procedures for either the BFLUTS or SF-12.

The initial surgical success for TVT surgery is maintained over a period greater than five years.

INTRODUCTION

Stress urinary incontinence (SUI) is a common pathological condition affecting women, and is associated with considerable distress and social inconvenience. A combination of stress and urge urinary incontinence has been estimated to account for up to a third of cases of female incontinence[1-2].

Many different surgical procedures are described for the treatment of SUI. One of the more recent surgical options has been the tension-free vaginal tape (TVT) described by Ulmsten[3] in 1996 as an ambulatory procedure under local anaesthesia and sedation for the treatment of female urinary incontinence. This involves insertion of a suburethral polypropylene tape. Before the introduction of the TVT for the treatment of urodynamic stress incontinence, Burch colposuspension had been the procedure of choice with a mean cure rate of 89.8% (95% CI 87.5 – 92.05)[4].

Outcomes from one prospective multicentre randomised trial at 6 month and 2 year follow-up have shown TVT to be as effective as colposuspension[5], with similar cure rates and less postoperative complications. However intraoperative complications are reported in relation to bowel, major blood vessel, bladder and urethral trauma[6-8]. There are relatively few published articles on long term follow-up greater than 3 years of patients undergoing TVT

Almost all reported data comparing TVT with colposuspension excludes patients with mixed urinary incontinence. In day to day clinical practice many women with stress urinary incontinence also complain of urge urinary incontinence. Holmgren *et al* demonstrated initial cure rates of approximately 60% following TVT for the treatment of mixed urinary incontinence. The benefit persisted for up to 4 years but then gradually decreased to only 30% by 8 years[9]. This retrospective study includes patients with mixed urinary incontinence where stress urinary incontinence is the major symptom.

The objective is to assess if the initial findings reported in the literature at 6 months and 2 years regarding the efficacy and safety of TVT and Burch colposuspension are true at 5 – 10 years after surgery.

SUBJECTS AND METHODS

A retrospective observational study of all TVT's and colposupensions performed by a single surgeon from 1994-99, in a Northern Ireland tertiary referral hospital for urogynaecology. TVT was substituted for colposuspension in May 1998 as the procedure of choice. Patients undergoing TVT or colposuspension were identified from theatre diaries and the hospital based computerised coding system. Eighty five patients were identified, 40 patients in the TVT group, two of which were deceased, and 45 in the colposuspension group. The review was undertaken in 2005. Medical records of the patients identified were reviewed; factors examined included demographic details, pre-operative diagnosis, past gynaecological surgery, type of anaesthetic, length of operation, intra-operative and post-operative complications, length of stay in hospital and findings at post-operative review (at 6-12 weeks after surgery). Sixty two hospital charts were reviewed, 32 TVT and 31 colposuspension. 21 charts had been microfilmed and the cost and time implications of retrieval was prohibitive, and these were excluded from analysis.

The patient's present clinical condition was assessed using

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TABLE I.

Distribution of patients for data collection.

	TVT (n=40)	Colposuspension (n=45)
Medical charts reviewed	32	31
Questionnaires returned	30	30
Chart and questionnaire completed	25	21
Chart only completed	7	10
Questionnaire only completed	5	9
Microfilmed charts	8	13
Medical charts unobtainable	-	1
Patient deceased	2	-

the disease specific Bristol Female Lower Urinary Tract Symptoms (BFLUTS) questionnaire and the generic quality of life questionnaire Short-Form 12 (SF-12). The questionnaires were posted in January 2005, along with a covering letter and self addressed envelope. This was repeated at two and six weeks. In total 60 questionnaires were returned, a 63% response rate, with 30 questionnaires for each procedure.

TABLE II.

Demographic characteristics and elapsed time from surgery.

	TVT (n=32)	Colposuspension (n=31)
Parity (mean)	2.4	3.3
Age		
20-29	2	0
30-39	3	4
40-49	2	9
50-59	10	12
60-69	11	6
70-79	4	0
Weight (kg)		
<50	0	1
50-69	8	7
70-89	16	11
90-109	5	10
>110	1	2
Not recorded	2	-
Time elapsed from Sx (mths)		
60-72	20	2
73-84	11	2
85-96	1	17
97-108	0	1
109-120	0	6
>120	0	3

The BFLUTS questionnaire was analysed using Fisher's exact test for contingency tables and the SF-12 questionnaire was analyzed using the non-parametric Mann-Whitney test. Table I demonstrates the distribution of patients for the chart review and postal questionnaires.

RESULTS

Demographic characteristics and elapsed time from surgery are given in table II. There was a trend towards older and heavier patients undergoing colposuspension. All the patients identified in the chart review had undergone urodynamic investigation and the findings are documented in table III. The lower urinary tract symptoms as defined by the International Continence Society (ICS)[12] are included. Approximately two thirds in each group, 19/32 and 24/31 (59% & 58% respectively) complained of mixed urinary incontinence whereas approximately a third, 10/32 and 10/31 (31% & 32%) respectively, were found to have combined detrusor overactivity and urodynamic stress incontinence at filling cystometry. Conservative treatment before surgery was undertaken in 88% (28/32) and 90% (28/31) in the TVT and colposuspension groups respectively.

TABLE III.

Pre-operative clinical diagnosis and urodynamic findings.

	TVT (n=32)	Colposuspension (n=31)
Clinical Findings		
Stress urinary incontinence	10	7
Urge urinary incontinence	1	-
Mixed urinary incontinence	19	24
Voiding disorder	1	-
MUI & voiding disorder	1	-
Urodynamic Findings		
Detrusor Overactivity	2	-
Urodynamic stress incontinence	15	21
Both	10	10
Other	5	-

TVT patients had regional anaesthesia and the colposupension patients received a general anaesthetic. The median operating time, to include anaesthesia, was 50-59 minutes for TVT and 70-79 minutes for coloposupension.

The number of patients who had previously undergone past pelvic surgical were 59% (19/32) for TVT and 71% (22/31) for colposuspension, the commonest reported previous pelvic surgery was hysterectomy with 44% (14/32) and 58% (18/31) respectively.

Intra-operative and post-operative complications before discharge are documented in table IV; the main intra-operative complication was bleeding with 19% (6/32) noted to have moderate or more vaginal loss in the TVT group and only 3% (1/31) in the colposuspension group. One patient in the colposuspension group did require a subsequent blood transfusion. No bladder or urethral perforations were

TABLE IV.

Operative complications (more than 1 complication may occur per patient).

	TVT n=32 (%)	Colposuspension n=31 (%)
Bleeding		
-significant vaginal loss	6 (19%)	1 (3%)
-blood transfusion	-	1 (3%)
Re-catheterisation	8 (22%)	3 (9%)
ISC	2 (6%)	1 (3%)
UTI	5 (16%)	4 (13%)
Pyrexia >38°C	1 (3%)	6 (19%)
Discharged with SPC or voiding problem	-	6 (19%)
Wound dehiscence	-	1(3%)
Total	22 (69%)	23 (72%

noted. Post-operatively 25% (8/32) and 9% (3/31) required re-catheterisation in the short term of one week following surgery. However only 6% (2/32) and 3% (1/31) required intermittent self catheterisation (at one week following surgery) for TVT and colposuspension respectively.

The median number of day's hospitalization was three for TVT and 10 for colposuspension. The overall success rate, defined as subjective absence of stress urinary incontinence was 88.5% (28/32) and 92% (28/31) respectively for TVT and colposuspension, at the time of discharge from the outpatient clinic. Whereas 72% (23/32) of TVT patients at discharge from the outpatient clinic were symptom free or had minimal voiding problems, One patient developed voiding problems two years later that required splitting of tape. 68% (21/31) of colposuspension patients at discharge were symptom free or had minimal voiding problems.

The BFLUTS results are summarized in Table V. Fisher's exact test was used for contingency tables. No significant difference in subjective outcome at the 5% level was noted at >5 year after initial surgery between the two procedures.

The results from the SF-12 are summarized in table VI. Statistical analysis using the non-parametric Mann-Whitney test was performed. No significant difference at the 5% level was noted.

DISCUSSION

Initial subjective cure rate at discharge from hospital care from case note review was 88.5% and 92% for TVT and colposuspension respectively, for patients with either stress urinary incontinence or mixed urinary incontinence. This is comparable with reported literature[5] for patients with urodynamic stress incontinence only. At 5-10 years postoperatively the cure rate for stress urinary incontinence was 77% (23/30) and 70% (21/30), respectively, where cure was accepted as occasional or absent leakage of urine during exercise, coughing or sneezing on the BFLUT. Although TVT appears to better than colposuspension, the length of follow

TABLE V.

Results of Bristol Female Lower Urinary Tract Symptoms.

	TVT n=30 (%)	Colposuspension n=30 (%)
Urinary Questions		
Nocturia	18 (60)	16 (54)
Urgency*	10 (33)	11 (36)
Frequency >2 hourly	8 (27)	15 (50)
Urge urinary incontinence*	5 (17)	9 (30)
Stress urinary incontinence*	5 (17)	3 (10)
Hesitancy*	1 (3)	3 (10)
Intermittency*	1 (3)	2 (6)
Sexual questions		
Sex life spoilt#	11 (37)	14 (47)
Incontinence during sex#	1 (3)	3 (10)
Lifestyle questions		
Change clothes*	2 (6)	3 (10)
Fluid restriction*	2 (6)	3 (10)
Ability to perform daily activities#	5 (17)	4 (13)
Avoiding places*	7 (23)	7 (23)
Interfering with life overall*	8 (27)	9 (30)

* most of the time or all of the time, #somewhat or a lot

up for colposuspension exceeded that for TVT. If the patients which did not complete the questionnaire are considered as failures the percentages then drop to 60.5% (23/38) and 46.67% (21/45) respectively.

TABLE VI.

Summary of Short Form-12 survey.

Dimension score	TVT (mean)	Colposuspension (mean)	P value
Change in health	41.7	42.5	.74
Energy/vitality	41.9	40.5	.754
General health perception	52.3	44.2	.248
Mental health	60.6	66.1	.472
Pain	51	49	.879
Physical function	60.1	54.8	.632
Role limitation-emotional	50.6	70.7	.159
Role limitation physical	43.8	46.2	.946
Social functioning	60.5	33.7	.4

The authors recognise that numbers are small and outcomes are not strictly comparable to other literature due to the inclusion of patients with mixed urinary incontinence. The value of this retrospective study is to provide a subjective outcome at 5-10 years after either TVT or colposuspension in patients with mixed symptoms, where stress urinary incontinence is the major complaint. This is the commonest clinical scenario in everyday practice.

For all women the type of incontinence was confirmed by urodynamic investigation. In the great majority of each group, 88 and 90% for TVT and colposuspension respectively, conservative management was tried and had failed before surgery was considered, which represents compliance with the National Institute of Clinical Excellence (NICE) guidelines regarding the use of TVT[13].

There was no significant difference between the two groups regarding the complication rate during or after surgery. All the complications in the study were minor and were resolved easily with standard care. No cases of bladder perforation or vaginal wall erosion in the TVT group were reported. There appeared to be more patients with significant blood loss at TVT, 19% (6/32), when compared with colposuspension 3% (1/31). Subjective assessment of blood loss is a deficiency of this retrospective study. Ideally pre and postoperative haemoglobin measurements would be of more value but it was not routine practice to assess haemoglobin results in TVT patients..

Re-catheterisation was required in 22% (8/32) for TVT and 9% (3/31) for colposuspension. This may be misleading. TVT patients had their catheter removed within 24 hours whereas colposuspension patients often had indwelling catheters for 7 days or more. The need for long term intermittent self catheterisation (ISC) is more relevant. This was two and one patients for TVT and colposuspension repectively.

Following anti-incontinence procedures patients may complain of symptoms associated with detrusor overactivity or outlet obstruction. Although numbers were not large enough for statistical analysis the overall trend was that urge urinary incontinence, frequency and voiding problems were more common in the colposuspension group. However the overall quality of life was similar in both groups. Three patients complained of hesitancy and two had intermittent urinary flow following colposuspension compared with one patient for each symptom after TVT. Similarly more patients complained of frequency and urge urinary incontinence symptoms in the colposuspension group. This compares with the findings at two years[2] and so further adds to the long term advantage of TVT over colposuspension.

The median operating time was approximately 20 minutes longer for colposuspension. Hospital stay was significantly different between the two groups with a seven day median difference in favour of TVT's. This has major cost implications for NHS hospitals as well as for the patients with less exposure to hospital acquired infections and probable earlier return to normal activities.

CONCLUSION

A mammoth shift in practice has occurred in the mid to late 1990s whereby Burch Colposuspension has been superseded as the surgery of choice by the Tension Free Vaginal Tape. This study tracks this change in a single handed urogynaecology practice. The authors accept that small numbers and differences in age, weight and follow up between the two groups dilutes firm conclusions

This study has shown that the initial surgical success for TVT surgery is maintained over a period greater than five years in patients with Urodynamic Stress Incontinence and Mixed Urinary Incontinence. Operating time and duration of hospital stay is less for TVT than colposuspension.

The authors have no conflict of interest

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Paper

Prospective survey of serial Troponin T requesting in an acute teaching hospital

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ABSTRACT

Background: Requests for troponin T, a biomarker for myocardial infarction, may be sent in a variety of clinical situations. In most cases, a single sample 12 hours or more after symptom onset should be sufficient for diagnosis. We chose to investigate how troponin T testing is used in our hospital with emphasis on those who had serial rather than single troponin measurements during their hospital stay.

Methods: Prospective survey of 50 patients with serial troponin T requests out of a total of 321 patients who had troponin T levels measured during the same time period.

Results: The time of symptom onset could be clearly identified in 40/50 patients. In 22 of these the first troponin was taken prior to 12 hours after symptom onset. For the 18 patients whose first troponin was taken after 12 hours, the second result remained in the same category (normal or high) as the first in all cases. This was not the case for 3/10 patients whose first troponin was sent within 12 hours and was normal. Early troponin results rarely affected immediate patient management and did not inform decisions about fibrinolytic therapy.

Conclusions: Serial troponin testing was most commonly due to a sample being sent within 12 hours of symptom onset or to unnecessary repetition of an appropriately timed sample. Patient management was rarely enhanced by early troponin testing.

Key Words: Troponin T usage, Myocardial Infarction

INTRODUCTION

Recent years have seen increasing use of troponin testing in the setting of acute chest pain. The sensitivity and specificity of troponin release as a marker of myocardial necrosis are such that the definition of acute myocardial infarction (AMI) has been rewritten to include troponin levels[1]. There has also been debate about diagnostic cut-off values and the clinical relevance of "borderline" troponin elevations[2,3], which may be found in the absence of classical symptoms of cardiac ischaemia or electrocardiographic (ECG) changes in patients who are unwell for some other reason. Guidelines emphasise that a troponin result should be interpreted in the clinical context and should be timed[1]. Troponin may not start to rise for several hours after symptom onset and although a raised troponin when the patient is first seen can be used to "rule in" AMI, there is some disparity in the recommended protocols for optimal timing of further samples if the initial one is negative[4]. However, both European and American guidelines agree that a normal troponin 12 hours after symptom onset excludes AMI[5,6].

On the basis of anecdotal observations of repeated troponin samples in the same patients, and reports of delay in some results becoming available, we chose to investigate how troponin is used in clinical practice in our hospital. A preliminary analysis showed that during a single month (October 2004) 501 patients had a single troponin T request and 167 had two or more. We decided to investigate prospectively the group of patients who had multiple requests during the same admission to answer the following questions:

1. In patients who have serial troponin requests, how are they timed in relation to patient presentation?
2. If an early measurement taken at presentation is normal is a second 12-hour test arranged?
3. How long is the average period of time between venepuncture and a clinician seeing the result?
4. Do early troponin results influence immediate clinical management?

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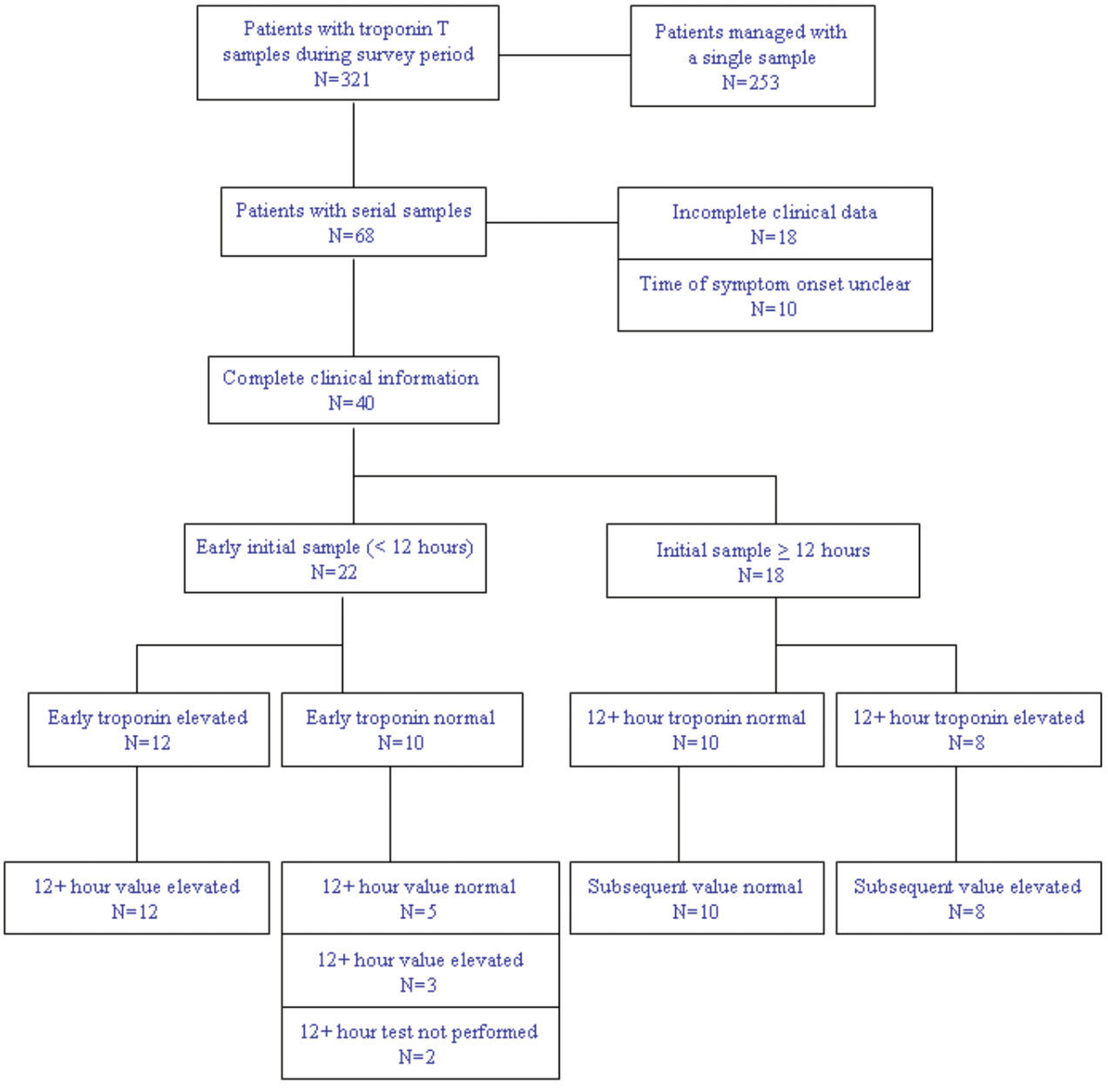

Fig 1. Flowchart illustrating usage of troponin T during survey period

METHODS

During the first 18 days of May 2005, on each weekday morning all troponin T requests from the previous 48 hours were reviewed and any patient having two or more tests were identified. Each of these patients was visited by one of the clinicians participating in the study (BL, JM or RS) and their medical notes were reviewed with a data collection sheet designed to answer the questions above. The time taken to transport the samples to the laboratory, time between laboratory receipt of the sample and report of the result, and time to look-up were obtained from the data trail on the laboratory computer system. Troponin T is measured using the Elecsys assay (Roche Diagnostics) and is available as a stat test 24 hours a day. The upper reference limit is 0.03 µg/L.

RESULTS

During the survey period, 68 patients were identified who had at least two troponin T samples sent during a single hospital admission. Complete clinical data were available for 50 and these form the study population. The total number of patients for whom troponin T requests were processed during the survey was 321.

The majority (33/50) of those who had serial troponin requests were new patients presenting via the Emergency Department (ED). First assessment of these patients was split evenly between the hospital's team of specialist chest pain nurses who are called to the ED to see any patient with acute chest pain, and ED senior house officers who tended

Table 1

Main presenting symptoms (patients may have had more than one symptom)

Symptom	Number of patients (n/50)
Chest pain	30
Dyspnoea	10
Dizziness / collapse	8
Abdominal / back pain	6
Vomiting	2
None of these	5

to see patients with alternative presenting symptoms such as dyspnoea. Presenting symptoms are detailed in Table I. The remainder were inpatients on a variety of wards throughout the hospital and were assessed first by junior doctors on those wards. Out of the 50 patients with serial requests, we noted one with a working diagnosis of ruptured abdominal aortic aneurysm and another of status epilepticus. Forty-eight had ECG's recorded on initial presentation.

In 10 of 50 patients with serial samples the time of symptom onset could not be clearly identified. Of the remaining 40, 22 had their first sample taken within 12 hours of symptom onset and 18 had it performed after 12 hours (figure 1). Of these 18, eight were patients with chest pain who did not present until after 12 hours.

Of the 22 patients whose first troponin was taken early (within 12 hours of symptom onset), 12 had elevated results. Eight of these were assessed by or discussed with the cardiology team and three were admitted to monitored cardiac beds. Two patients received fibrinolytic therapy, in both cases before the troponin T result had been seen.

In the 18 patients whose first sample was sent 12 hours or more after symptom onset, 10 had values below the reference limit and eight were high. In all 18 cases the second troponin result was in the same category (normal or high) as the first.

Seventeen of the hundred samples included in this audit were not labelled with the time of venepuncture. Those samples that were timed took a median time of 57 minutes to be transported to the laboratory (interquartile range 36-73 minutes). The median time taken for the laboratory to process a sample and release the result was 50 minutes (interquartile range 41-67 minutes), and the subsequent median time taken for non-laboratory staff to view the result on the computer system was 81 minutes (interquartile range 16-184 minutes). This excludes one telephoned result and ten results which were not looked up within 12 hours of becoming available. If these results and the untimed samples are excluded, the median total time between venepuncture and non-laboratory staff viewing the result was 221 minutes (interquartile range 118-306 minutes).

DISCUSSION

This survey provides an overview of how one of the most high profile and high-growth tests of recent years is used in clinical practice. Most patients for whom the test is requested are managed with a single sample. However a substantial minority (68/321; 21%) had two or more samples sent during a single hospital admission and these patients were the focus of the current survey to determine the clinical value of serial troponin sampling.

Early troponin requesting (within 12 hours) was a common reason for duplicate samples being performed. Of 22 patients with early samples sent, we observed three in whom clinical management was potentially affected by the result of the early sample. Early troponins may be used as part of an investigation protocol for chest pain such as the Sheffield protocol[7], which recommends a single troponin measurement at 6 hours. This protocol however also involves continual ECG monitoring and exercise stress testing and as such is applicable to specialist chest pain units rather than general medical take-in through the ED. An early level is of value if it rules in AMI in a patient whose clinical findings and ECG are equivocal, thereby facilitating earlier management. However we found that no patient received earlier thrombolytic therapy because of an early troponin T result and that only a minority (3/12) of patients who had a positive early troponin were immediately transferred to monitored cardiac beds. Such observations raise questions about the clinical value of early troponin testing, including in patients in whom it is found to be elevated.

In cases of serial troponin samples another question of interest is whether both are necessary. Guidelines state that in certain equivocal cases it is useful to demonstrate a rise and fall in troponin in order to diagnose an acute episode of cardiac ischaemia[1]. However this indication for serial testing refers to atypical cases rather than the majority and is unlikely to explain many of the serial troponin samples that we observed. There is always a degree of redundancy in requesting with any diagnostic test but it is a particularly relevant issue where troponin is concerned given that chest pain is a common and important presenting symptom in the ED. Furthermore troponin workload is difficult for laboratories to manage, as it is perceived that troponin measurements cannot be delayed or repeat troponin requests declined by the laboratory without the risk of harmful consequences to patients. However we did find that the problem of repeated troponin samples was less than it had appeared prior to the survey. We also found that although laboratory turnaround time for troponin is higher than ideal, it comprised under a quarter of the median total length of time between venepuncture and a clinician viewing the result.

Among 18 patients with serial troponin samples whose initial sample had been sent at least 12 hours from symptom onset, the subsequent result remained in the same category in every case. This is a reassuring finding and underscores the reliability of the 12 hour troponin sample and the predictive value of this troponin T assay in clinical practice. In contrast among 10 patients whose early troponin level was normal, the 12 hour result was elevated in 3, highlighting the potential for diagnostic error when troponin levels are measured within 12 hours of symptom onset.

The optimal role for troponin T sampling in the assessment of suspected acute ischaemic chest pain is as a single sample 12 hours (or later) from the onset of symptoms. We found that early samples rarely affected immediate patient management and did not inform decisions about fibrinolytic therapy. Samples taken 12 hours or more after symptom onset do not need to be repeated in the absence of further ischaemic symptoms.

The authors have no conflict of interest.

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Clinical Practice

Using estimated glomerular filtration rate (eGFR) to help manage patients with chronic kidney disease

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INTRODUCTION

Chronic kidney disease (CKD) has been considered an uncommon condition requiring specialist management. The traditional view of CKD has been of patients with end-stage renal disease (ESRD) requiring dialysis or a kidney transplant as forms of renal replacement therapy (RRT). However the prevalence of CKD is much higher than previously appreciated and this has provided a stimulus to the integration of primary and secondary care to optimise the health of persons with CKD. In particular up to 40% of ESRD patients had been referred to specialists shortly before they needed dialysis. Such late referral often results in increased morbidity and mortality for patients and poor acceptance and planning for RRT[1,2].

In 2002, in response to growing evidence confirming the benefit of early versus late renal specialist input, the UK Renal Association proposed that all patients with a serum creatinine level >150 µmol/L should be referred to a nephrologist[3]. However, it soon became apparent that the community prevalence of CKD had been grossly underestimated and strict adherence to this guideline would simply have overwhelmed existing renal services[4]. Although the majority of persons with CKD will never progress to ESRD, they do have an increased rate of cardiovascular events and risk of premature death[5].

Subsequently, in January 2005, the second part of the National Service Framework for Renal Services set standards relating to the prevention, early detection and minimisation of CKD progression[6]. The widespread adoption of a formula based estimation of glomerular filtration rate (eGFR), to be reported by all biochemical laboratories, was recommended to help achieve these goals. The traditional means of assessing renal function using serum creatinine is limited by the variability of this parameter with muscle bulk and age. The degree of renal dysfunction, especially in women and older people, can be underestimated using serum creatinine levels alone and is a major factor in delayed recognition and referral of CKD patients. An eGFR provides a more accurate measurement of kidney impairment. An internationally agreed categorisation of CKD based on a four-variable eGFR equation incorporating age, gender, race and serum creatinine, is now widely utilised (Table I).

UK Guidelines for the management of CKD, developed by the Royal College of Physicians, the Royal College of General Practitioners and the Renal Association were also published in 2005[7]. Recommendations followed suggesting that the markers for quality of care of CKD be incorporated into the Quality and Outcomes Framework (QOF) to enable full implementation of the guidelines across the National Health Service.

Consequently the updated General Practice QOF specified four indicators (accounting for 27 points) in relation to CKD. These depend on the generation of a register of patients with CKD (eGFR <60mls / min / 1.73m^2), measurement of blood pressure, treatment of blood pressure to target, and greater use (if appropriate) of angiotensin converting enzyme inhibitor or angiotensin receptor blocker medication in patients with CKD (Table II)[8].

TABLE I

International classification of chronic kidney disease

Stage	eGFR mls/ min/1.73m^2	Description	
1	90+	Normal kidney function	With urinary or structural abnormalities
2	60-89	Mildly reduced kidney function	With urinary or structural abnormalities
3*	30-59	Moderately reduced kidney function	With or without urinary abnormalities
4*	15-29	Severely reduced kidney function	With or without urinary abnormalities
5*	<15	Established renal failure	Very severe or dialysis-dependent kidney failure

* Stages 3-5 are the stages of CKD currently recognized within the General Practice Quality and Outcomes Framework and thus identified with eGFR reporting.

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TABLE II.

Quality and Outcomes Framework indicators for Chronic Kidney Disease

	Indicator	Points
Records	**CKD 1** The practice can produce a register of patients aged 18 years and over with CKD stages 3-5	**6**
Initial management	**CKD 2** The percentage of patients on the CKD register whose notes have a record of blood pressure in the previous 15 months	**6**
On-going management	**CKD 3** The percentage of patients on the CKD register in whom the last blood pressure reading, measured in the previous 15 months, is 140/85 or less	**11**
	CKD 4 The percentage of patients on the CKD register with hypertension who are treated with an angiotensin converting enzyme inhibitor (ACE-I) or angiotensin receptor blocker (ARB) (unless a contraindication or side effects are recorded)	**4**

STAGE	1	2	3	4	5
eGFR mls/min	≥ 90 + albuminuria or haematuria	60 - 89 + albuminuria or haematuria	30 - 59	15 – 29	<15
Tests	Annual U+E (including eGFR) Annual urine ACR			As before but now 6 monthly.	Check U&E 3 monthly
Treatment	• Treat BP to a target of < 130/80 (threshold to treat is 140/90) • ACEi or ARB if urine ACR ≥ 30 in non-diabetic or ACR >3 in diabetes • Statin if CVD risk ≥20% over 10 years • Aspirin 75mg (if no contraindication) • Advise lifestyle changes as appropriate				
Referral	Fall in eGFR by >15% per year Rise in serum creatinine >20% per year ± Urine ACR ≥ 100 ± Systolic BP ≥ 160 (despite treatment with multiple agents)			Discussion with or referral to renal unit is usual.	Usually automatic (Unless not for active treatment based co-morbidity)

Figure 1. The summary of chronic kidney disease management guidelines recommended by CREST

In Northern Ireland in 2006 the Clinical Resource Efficiency Support Team (CREST) published specific guidelines on CKD management[9], the General Practice QOF targets for CKD were introduced, and all laboratories began to routinely report eGFR with any creatinine measurement. These developments were coupled to local educational initiatives to explain and disseminate best practice for the care of persons with CKD. What conclusions can be drawn from this first year of eGFR reporting in Northern Ireland?

CKD IS COMMON

Patients with an eGFR <60ml/min/1.73m^2 have CKD stage 3, 4 or 5 and are the focus of guidelines and the new QOF indicators. The epidemiological evidence has confirmed that CKD is common in Northern Ireland with approximately 5% of the adult population having CKD stages 3, 4 or 5[4]. The majority of these patients are elderly and although they have minor elevation of serum creatinine they are categorized as having stage 3 CKD based on eGFR. Some clinicians are concerned that use of eGFR generates a 'disease' that may merely be age related kidney function decline. However the data supporting a high risk of cardiovascular events in CKD stage 3 patients is robust and since the growth in ESRD incidence is largely confined to the elderly we consider the benefits of this staging system outweighs this putative drawback.

CKD IS INCREASINGLY RECOGNISED

The identification of patients with CKD has increased following routine eGFR reporting coupled with implementation of CKD QOF criteria. Electronic registers of persons with an eGFR < 60 ml/min/1.73m^2 now exist in general practice and will heighten awareness of opportunities for reduction of cardiovascular risk and reduce the likelihood of prescribing problems in persons with renal impairment.

THE MAJORITY OF CKD IS MANAGED IN PRIMARY CARE

For CKD patients, the guidelines recommend targeting classical cardiovascular risk factors, including meticulous control of blood pressure and lipids, smoking cessation, lifestyle advice and, in diabetic patients, optimisation of blood sugar control. Since many of these patients' main risk is cardiovascular in nature the most relevant and cost-effective place for this to happen is primary care, as suggested by the guidelines for CKD[7]. The local guidelines provide specific advice on those who would benefit from specialist input[9], and a summary version has been distributed to GPs (fig 1).

AN IMPORTANT MINORITY PROGRESS TO END-STAGE RENAL DISEASE

Unfortunately some people with CKD stages 3 and 4 will progress to ESRD (stage 5 CKD) and require dialysis.[10] Diabetes, hypertension and proteinuria are all predictors for progressive renal failure. The number of people with ESRD requiring RRT continues to rise worldwide placing an increasing strain

on limited healthcare resources. In Northern Ireland, at the start of 2007, over 750 patients were receiving regular dialysis therapy with the absolute number of dialysis patients predicted to rise to over 1000 by the end of 2010. While the provision of RRT in Northern Ireland compares very favourably with the rest of the UK, (the dialysis take-on rate here is the higher than all other UK regions)[11], the UK has the lowest dialysis provision per million population in the developed world. It is projected that prevalent dialysis patient numbers will not reach steady state for at least a further 20 to 25 years[11].

RRT is expensive with an estimation that in the near future it will account for 2% of the total NHS budget.[7] Despite the commendable dialysis take-on rate in Northern Ireland there has been evidence of both under- and late-referral[4,12]. CKD must therefore remain a high profile public health issue. The identification and early referral of the subgroup of patients that would benefit from specialist renal input will reduce the costs incurred by late referral[2]. However before realizing this there will need to be an increase in nephrology outpatient services to support primary care colleagues in this endeavour.

There are testing times ahead for primary and secondary care health professionals managing persons with CKD. The introduction of eGFR reporting has provided a useful tool to recognise the burden of CKD in the community and to track the progression of kidney disease in an individual over time.

The authors have no conflict of interest.

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Annual Oration

ART and Prejudice

Royal Victoria Hospital, Thursday 5th October 2006

Dr Raymond D Maw

Thank you Professor Adgey for your kind words of introduction. For many years I have sat in this audience thinking this must be one of the most stressful presentations of an Orator's life - I was absolutely right. Such was my anguish when you invited me to be this year's Orator that my first reaction was to say to myself 'how on earth can I get out of this?' While considering my response I turned to Professor Richard Clarke's excellent "History of The Royal Victoria Hospital"[1]. Running my eye down the rather daunting list of previous Orators, I spotted the name of your late, distinguished, if somewhat eccentric colleague Professor JF Pantridge, The entry for the year 1971 reads 'no oration given' Prof JF Pantridge declined to give the Oration. The only other similar entry was in 1910 when Sir William Whitla also declined to give the oration. As a simple GU Medicine physician I could not have aspired to join such an exclusive club!

I have to begin with an apology to those of you mislead by my title who came to hear an erudite lecture on Art, I wish I was capable of delivering such a lecture but unfortunately it is not the case but I would like to dwell for a moment on the Arts and Environments project on the Royal Hospitals site, many of the images of which were shown as you assembled. The project was established in 1989 by Michael Swallow, former consultant neurologist in this hospital. It was my privilege to take over as Chairman in 1993 a position I have enjoyed since then, although I suspect the 'Dear Tony' letter is long overdue. The Arts Council, Hospital Trust and Chief Executive have been resolutely supportive but as my theme today is prejudice there are two particular ones the project has been subject to. Firstly "the money could have been spent on equipment or staff" we hear – in fact none of the money spent in this Project could have been utilised in that way, coming from government sources such as the National Lottery, private foundations and Trust Funds not available for clinical purposes. Even if that had not been the case I would have considered it money well spent as research into similar projects has shown the benefit to both patients and staff[2]. The other prejudice has been persons second guessing how others are likely to respond to particular works of art. Usually staff concerned how patients or their colleagues would react to pieces possibly construed as too difficult or however tangentially, depicting death or deformity.

Fig 1. Janet Mullarney - 'Touch'

An example is this sculpture piece by Janet Mullarney in the entrance to Ward 6B, to me this depicts a person in a sort of transcendental state, perhaps ill, perhaps not certainly an ethereal piece. To our artist in residence it depicts suffering and death but we agree to differ (Fig 1). My own view is that hospitals should not deny their purpose; they are places where people come to be cured but also to suffer and die. Works of art have always been valuable for contemplation and reconciliation of life's great tragedies and if they are not challenging and controversial they are not worthwhile. Undoubtedly the hospitals are now the best endowed in Ireland and among the best in the British Isles and on those bleak mornings we all have coming into work it gives me immense pleasure to see what has been achieved. I would encourage you all especially those students coming into the hospital to take note and hopefully be enriched by the many different pieces around you.

Most of you will of course have guessed that the ART in my title is of course an acronym for antiretroviral therapy, a saga which I feel incredibly privileged to have had a very small part in. I will also exercise the Orator's prerogative and paint a slightly broader picture of Sexual Health, where we have come from, where we find ourselves now, and a little bit about the future.

History is always a good place to begin from, especially as it can show us how we continually fail to learn some fairly obvious lessons.

In the year 1492 Christopher Columbus famously discovered the West Indies and set the scene for the invasion of The Americas bringing European culture, Christianity,

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unbelievable cruelty and disease to the indigenous populations. Infections to which there was no herd immunity such as measles, influenza and whooping cough along with torture and execution set the scene for what has been described as the greatest genocide in human history, leaving 95% or 100 million of the native population of the Americas dead[3]. When we come to consider the social phenomena currently associated with HIV, this should not be forgotten. In return for this the invaders brought back sugar, chocolates, tomatoes and syphilis to which there was no herd immunity, all of which have profoundly changed our culture and history. Many of his crew became infected with syphilis. In Barcelona the physician Ruiz Diaz de Isla identified the acquisition of this new disease as being related to Colombus and his crew having sex with native women and although the concept of infectious agents was not understood, its subsequent onward transmission to waterfront prostitutes and their clients in Barcelona was indeed seen as divine retribution for immorality[4], a prejudice that plagues the management of sexually transmitted infections (STI's) to this day.

Fig 2. Durer -'Syphilitic Man'

This terrifying disease depicted here by Durer with ulcerating lesions of the genitals, erupting pustular lesions of the skin and often rapid progression to death, spread like wildfire (Fig 2). In 20 years it spread through Europe and Asia each country blaming its neighbour along the way. Today we can clearly recognise the epidemiology now classically associated with all sexually transmitted infections, that is; conflict, social upheaval and travel. In those days, war, trade and colonisation, in our day commerce, economic migrants and EasyJet plane loads looking for easy sex tourism.

As we all know many famous and infamous persons became infected. The disease in many cases was said to have contributed to their genius or to their evil doings. Because of the strong prejudice associated with having the Great Pox, infection can sometimes only be inferred from medical records, often their physicians, friends and families went to extraordinary lengths to conceal the true nature of their disease. This of course is what we would today call medical confidentiality, which is fair enough. Among those who may have been victims were Goya, Manet, Van Gogh, Schubert, Abraham Lincoln, Adolf Hitler and of course our own Oscar Wilde and perhaps James Joyce[5].

In the mid 19th century the race was on to find the cause of syphilis and its natural history. The study of syphilis and research for a cure became a respectable and challenging branch of medicine. Ricord in Paris, physician to the great and the good famously said 'in the beginning God created the heavens, the earth, man and the venereal diseases.' He carried out inoculation experiments on over two thousand unsuspecting subjects - mostly felons, prostitutes, servants and medical students. He could hardly have chosen more able groups to facilitate onward transmission!

His pupil Albert Fournier (of the eponymous disease Fournier's gangrene) estimated 20% of adults in Paris were infected. He presaged modern medical ethics when he advocated informed consent in these experiments[6].

Despite Fournier's admonition, physicians as we shall hear continued to experiment on uninformed humans. He also advocated the taking of a sexual history as being an integral part of the medical history, something still ignored today even when it is an essential part of the diagnostic process.

It was only in the early 20th century that *Treponema pallidum*, a member of the genus *Spirochaetae* was identified and a blood test for diagnosis was found. Syphilis was then one of the commonest causes of death and gonorrhoea the commonest cause of blindness due to neonatal ophthalmia. In the First World War the problem for the allied forces was a huge one, with the US forces losing as many fighting days to STIs as to combat injury and other communicable diseases[7]!

The British Army decided to have a health education campaign for its soldiers going on leave to Paris. The following pamphlet was issued:-

'In this new experience you may find temptation in wine and women. You must entirely resist both temptations and while treating all women with perfect courtesy you should avoid any intimacy. Do your duty bravely; Fear God, Honour the King.'

The result was that of the first five thousand soldiers returning from leave, 20% subsequently developed an STI. Different action was needed! Soldiers at risk returning to camp were given urethral irrigation within 24hrs, of the subsequent three hundred thousand, only 3% became infected[8]. A good example of a pragmatic public health response to the problem. A lesson still to be learnt by many preachers, politicians and, I'm afraid, some physicians.

With a mounting public health crisis the government appointed a Royal Commission in 1916 under Sir William Osler to advise on what should be done[9]. One piece of evidence presented was a letter from a doctor to a patient who had pleaded for help with the pains of tertiary syphilis, and can be paraphrased as follows. 'The disgraceful disease from which you are suffering is entirely your own fault. I will certainly not come to your assistance and I hope you continue to suffer from it for many years to come'. This was typical of the attitude of many doctors of the day. The result in 1917 was the founding of the medical speciality of venereology, the establishment of Special Clinics usually housed in grim accommodation, the statutory right to confidentiality, free diagnosis and treatment, again leading ethical thinking. Unfortunately prejudice against those with STIs soon led to the stigmatisation of patients and those who worked in the clinics. Patients only attended if they were desperate and it was no longer an esteemed career to pursue.

A social paradigm of the day would have painted a picture of a society where in the middle classes, at any rate, it was permissible for young men to have sexual experience before marriage (and after in many cases) usually with a prostitute, or on his travels in Europe. For women pre-marital sex was social death and they awaited the lottery of the chastity or otherwise of their future husband. I still vividly recall one of the first tertiary syphilis patients I dealt with in my career.

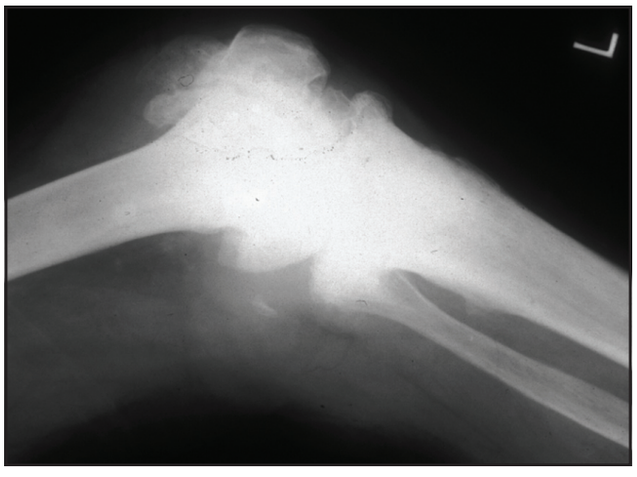

Fig 3. X-Ray of Charcot's Knee Joint

A 'society woman' then in her seventies - figure 3 is an X-Ray of her Charcot's knee. Totally disabled by Tabes Dorsalis she recounted with deep bitterness how shortly into her marriage she attended the doctors' surgery with her husband every day for weeks. It transpired he was receiving injections for syphilis, never a word was said to her. This was a formative experience for me. A parallel today would be a woman being treated for pelvic inflammatory disease (PID) with no sexual history being taken and no partner notification leading to re infection and a greatly increased risk of infertility. This social paradigm is still very much the case today in many countries outside the liberal West and one which leads to a lot of denial as to sexual health problems.

Although STIs have played a central role in the development of medical ethics, one of the most infamous episodes in 20th century Western medicine was the study of the natural history of syphilis in Black Americans. Set up in 1932 in the USA, the so-called Tuskagee Study. The population studied was that of black Americans in Alabama, where the estimated prevalence of infection was between 25 to 36%. Approximately 400 cases were recruited and 200 controls. The subjects were to be followed up without any form of treatment, to record their subsequent medical events. The full extent of the malfeasance was not exposed until 1966, when a conversation overheard in a canteen by the young investigator Peter Buckson prompted him to look into the conduct of the study. When he presented his conclusions he was ostracised by his fellow workers at the CDC Atlanta. It was only by going to the press in 1972 that the scandal became public. A Senate hearing in 1973 under the Chairmanship of Senator Ted Kennedy heard how participants were never told of their diagnosis; draft boards were contacted to prevent participants being enlisted in the military, thus having access to treatment. Despite the discovery of penicillin in the 1940s patients were not offered this. Public health service doctors were baffled when they were compared to Nazis in the press. Eventually the survivors received $10 million in compensation. A public apology was finally made by President Clinton in 1997 to the then remaining 8 survivors[10]. It is commonly accepted that a similar study would never have been contemplated by the investigating team if the participants had been white Americans, a clear case of racial prejudice in the context of sexual health.

The *Treponema pallidum* genome was sequenced in 1998[11] giving rise to some interesting theories as to the organism's antecedents. Enthusiastic evolutionary biologists have proposed that the spirochaete inhabited the air tight gut of cockroaches 100 million years ago and the wriggling spirochaete seen under the microscope are the ancestral inspiration for the whip like structures that provide locomotion to spermatozoa or even axons and dendrites of the brain are descended from spirochaetes. All of this of course gives rise to some fascinating speculation as to what effect HIV may yet have on human evolution.

It is salutary to review the time frame from the appearance of Syphilis in Europe to where we find ourselves today (Table I). After centuries of bizarre and harmful treatments the discovery of penicillin in 1942 provided a cure with few side effects. Unfortunately there remains no vaccine against the infection, most likely due to lack of any financial incentive for the pharmaceutical industry.

TABLE I

'Milestones' in Syphilis

Milestones in Syphilis

- Colombus 1492
- Mercury 1497
- Potassium Iodide 1834
- *T Pallidum* identified
- WR test discovered
- Arsenical Salvarsan 1909
- Penicillin 1943
- Genome project 1998
- Ongoing outbreaks

No resistance to penicillin has been described yet the disease still haunts us today with fresh outbreaks across Europe in the last 6 -7 years. In Northern Ireland we would hardly have seen a handful of cases in the 1990s but since 2001 we have seen over 200, now seeing more than when I started in my specialty thirty years ago.

So let us turn our attention to sexual health issues today that may be of interest to you and tell us something about our society and the world we live in and some of the prejudices that may blow things off course.

We come at last to the ART in my title. AIDS was first recognised in 1981 from an outbreak in gay men in the USA of *Pneumocystis* Pneumonia, a disease usually associated with immune suppression[12].

The first acronym for what we now call AIDS was in fact GRID, Gay Related Immune Deficiency Disorder. I presented this new syndrome at our 10 year medical graduation reunion in 1983 and made a few observations which still seem apposite. Of course gay men felt further discriminated against with the advent of this plague. There was a lot of indignation to what was portrayed as the gay lifestyle driving this new disease. It highlighted for me the centuries of discrimination suffered by men and women for their sexuality which is something which I believe they can do little about. I suggested that if we had gathered together a group of mad behavioural scientists to design a bizarre sociological experiment they would have done the following: taken a group of people and outlawed them on the basis of their sexual behaviour, alienate them from religion, family and society, not able to form loving relationships, ensuring they developed a surreptitious subculture and then after centuries we would have legalised this behaviour and then we would have been surprised that their behaviour did not fit with societies norms! The link in the Western mind of HIV/AIDS with gay men has continued to be an obstacle on many levels. But what was happening of course was the unfolding of the most dramatic epidemic with scientific and social responses to match.

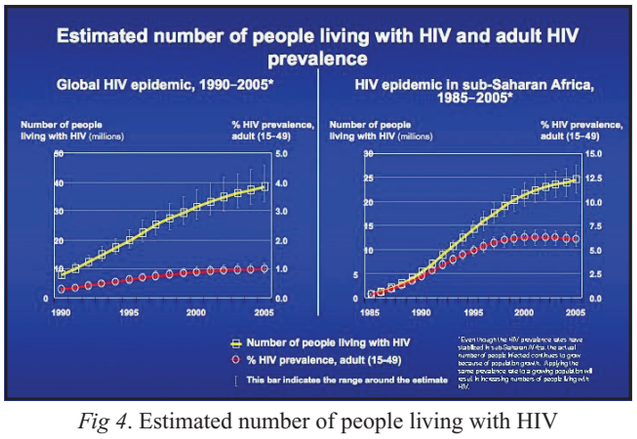

Fig 4. Estimated number of people living with HIV

The figures are common knowledge with now an estimated 40 million people worldwide living with HIV and 1.0% prevalence in the 15-49 year old age group (fig 4). The epicentre has been Sub-Saharan Africa with 25 million persons living with HIV and an overall prevalence of about 6% in 15 – 49yr[13]. The impact on life expectancy has been dramatic with all the health care gains achieved over previous decades wiped out. New epidemics are being recorded all over the world with, for example, Russia and the Ukraine rapidly accumulating new cases, India being forecast to overtake Africa with total number of cases in the next five years and the Chinese now admitting to over a million persons infected.

In the UK the major epidemiological shift has been the rise in heterosexual diagnoses with the Rubicon having been crossed in 1996 when for the first time heterosexual diagnoses overtook those in gay men (fig 5)[14]. This gap has continued to widen. When these figures are analysed more closely the heterosexual cases have been driven principally by diagnoses in persons from Sub-Saharan Africa and closely linked to the social and economic migration we are now familiar with.

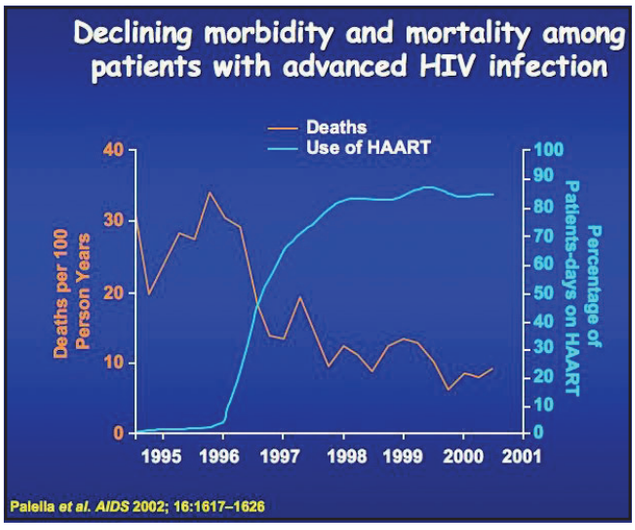

Fig 5. Survey of prevalent HIV infection diagnosed (SOPHID) data 1985 - 2003 (ref 14)

Our own experience locally has typically lagged behind Great Britain. But in 2003 a major shift occurred. Up until then we could confidently have forecast that we would have around 20 odd new cases per year with 60% being in gay men. In 2003 only 25% were in gay men and we saw the emergence of new heterosexual cases linked to persons from Sub-Saharan Africa, South East Asia and also their local partners. Last year we had 72 new registrations. All of this is being absorbed into our service with no extra support. Our cohort of over 300 patients is managed by 4-6 medical sessions per week plus our Nurse Specialist now having to devote almost all her time to these patients.

With the discovery of the virus in 1983 this time the nationalism was claiming the credit for the discovery of the virus. Recently the origin of the virus has been identified. It seems to have entered the human chain in the mid 20th century as a mutant of a virus carried by our cousin the chimpanzee *Pan troglodytes* in South Cameroon[15].

The test for detection in the next year brought with it new issues of medical ethics which still many doctors fail to understand. All I will say is that any practitioner dealing with persons with HIV should be familiar with the GMC

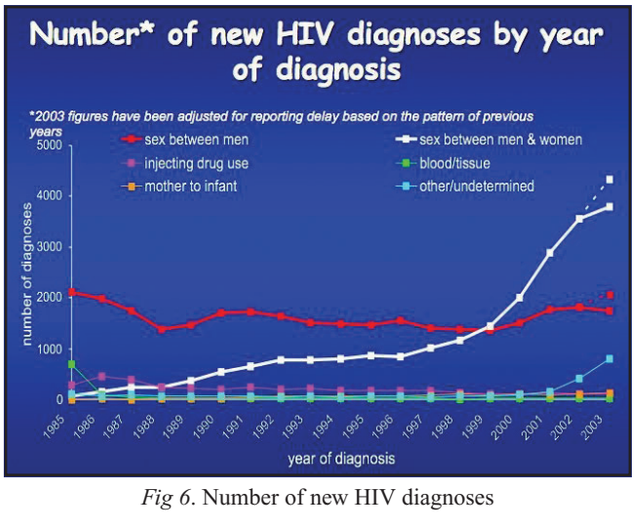

Fig 6. Number of new HIV diagnoses

guidelines on HIV testing. We continue to see medical and social disasters when these are not adhered to.

In 1987 we moved into the era of therapy at first limited to one active drug called Azidothymidine, then dual therapy and in 1996 we entered the era of Highly Active Anti Retroviral Therapy (HAART) using a combination of three or more drugs. The goal of this therapy is to suppress viral replication and allow the immune system to regenerate.

The remarkable success achieved is demonstrated by the fall in AIDS related deaths despite ever increasing numbers of new HIV diagnoses coinciding with the implementation of successful therapy in 1996 (fig 6)[16]. Yet less than 10% of the world's population have access to antiretroviral therapy, a situation finally being addressed by the world community but all too slowly.

Fig 7. Munch - 'The Inheritance'

There are of course problems, the major ones being compliance, over 95% compliance being needed for continued suppression. Resistance can rapidly emerge if the person is inadequately suppressed although the development of resistance assays can guide us to suitable alternative drugs. Side effects principally metabolic and GI tract related can make treatment unbearable for the patient.

The other remarkable aspect of care has been our ability to prevent mother to child transmission. This picture by Munch portrayed the tragedy of congenital syphilis (Fig 7). Today read HIV, yet another parallel between the two diseases. With early detection of infection we have seen transmission rates of 15 to 30 percent can be cut to less than 1% using antiretroviral therapy and Caesarean section. Our multidisciplinary team has managed about 20 pregnancies with to date no infant having become infected. Once again therapy is only available to a fraction of the affected persons worldwide. Both of these advances have recently been calculated for the USA to have saved 2.8 millions of years of life and over a hundred thousand in neonates[17].

Prevention of course must be the long term goal. Over 80 vaccines have been tested with as yet no success in humans although we are continually tantalised with reports of effective vaccines preventing infection in primates.

One of the most significant developments is likely to be vaginal microbiocides to neutralise HIV at the time of intercourse. In many countries the prevailing culture gives women little say in the control of their sexual health often making it impossible to negotiate condom usage. With an effective microbiocidal gel or cream the woman would have more control over her own destiny. Placebo controlled double blind studies are in progress in Africa. Women being infected with HIV have guaranteed access to antiretroviral therapy. Some have suggested this could be another Tuskagee but with informed consent, access to treatment and termination of the studies if efficacy is proved I don't think these parallels are justified. The truly inspiring list of achievements in only 25 years as opposed to the 500 year history of syphilis, are outlined in Table II.

TABLE II

'Milestones' of the HIV epidemic

Year	Advance
1981	Cases of *Pneumocystis carinii* pneumonia and Kaposi's sarcoma in the United States
1983	Epidemiology defined
1983	Discovery of the virus. First cases of AIDS in the United Kingdom
1984	Development of the antibody test
1987	Zidovudine approved as monotherapy for HIV
1996	Dual therapy
1996	Protease inhibitors
1998	Non nucleoside reverse transcriptase inhibitors Viral load assay
2002	Fusion inhibitors

To briefly look at other aspects of sexual health indicators. Human Papilloma Virus (HPV) is the cause of the humble wart and now known to be the commonest sexually transmitted infection. It is estimated that at least that at least 75% of the sexually adult population will carry one or more so called genital HPV type in their lifetime[18]. We know certain types of the virus are the cause of squamous cell cancer of the cervix, vulva, penis and anus. This very month a vaccine is being licensed which can potentially prevent a large proportion of cervical cancer[19]. For maximum benefit it needs to be given to girls before they start having sex. We will face an enormous task to implement a successful vaccine programme in the face of all the prejudices this is likely to raise. There is also the epidemic of chlamydia trachomatis with the inexorable rise in new cases with currently 12% of all new attendees at our clinic carrying this infection with all the implications that has for sub fertility.

It will not come as a surprise to you that I want to present all

too briefly the situation for the GUM service in N Ireland. The pressures throughout the UK have been well publicised with inexorable rises in new attenders and diagnoses in the clinics resulting in unacceptable waiting times. The situation in NI is no different with the number of first time ever attenders at the Royal Victoria Hospital GUM clinic topping 7,000 last year with an additional 5,000 re-attenders. When I first started in 1976 it was 1,600 new patients per year. Our non urgent appointment wait is now 6 weeks which has clearly been shown to lead to morbidity and spread of infection. We have precious few more medical staff and we have coped by ruthlessly 'modernising' i.e. changing working patterns, cutting reviews and recruiting the assistance of our nursing colleagues although they cannot meet their full potential because of lack of physical space and numbers.

A crude comparator for service provision but a telling one is the provision of consultants in a specialty. The Royal College of Physicians recommendation for our specialty is one consultant per 120,000 of population, this aspiration is not met in any of the four countries in the UK but we are by far the worst provided for with less than one per 500,000 leaving large geographical areas deprived of services. Recognising the situation following the Choosing Health White Paper in England a target was set of 2008 for ensuring 48 hour access[20]. There have been two significant investments in England to support GUM services. The first, in 2002– 2004, was a total of £18 million - the equivalent additional funding would have given us £400,000. No additional money was allocated in NI. The second, 'Choosing Health' allocated a further £145 million and to date no additional funding has been allocated in N. Ireland. The Department of Health is currently making a further draft of its Sexual Health Promotion Strategy to which there is likely to be little money attached for service. As with pleas to the Board and the Department the answer is always the same 'You are not a priority.' I'm sorry - I think the sexual health of our community is a priority. Our big problem of course is that we have no patient voice to shift this institutional prejudice!

TABLE III

NATSALS surveys 1990 & 2000 (ref 21)

	Gender	1990	2000
Lifetime partners	Female	3.7	6.5
	Male	8.6	12.7
Attitude to premarital Sexual Intercourse (not wrong)	Female	79.3%	84.4%
	Male	84.4%	85.2%

So ladies and gentlemen before I reach my conclusion there is just a little bit more information I would like to provide you with. This comes from The National Sexual Attitudes and Lifestyle Survey (NATSALS) carried out in England[21]. This was originally a government project but vetoed by Mrs Thatcher as too intrusive. It was carried out independently in 1990 and repeated in 2000 - a nationwide randomly selected survey of over 13,000 respondents in 1990 and over 11,000 in 2000. It has provided us with invaluable epidemiological information and I will focus on two items. Firstly the number of lifetime sex partners had risen from, in 1990, females reporting a mean of 3.7 and males 8.6, to, in 2000, 6.5 and 12.7 respectively. Peoples' attitude as to whether sexual intercourse (SI) before marriage was wrong had changed little with, in 2000, 85% of men and women saying it was not wrong or rarely wrong (table III). With this reflection of national attitudes plus the information I have already given you, let us not look for naïve solutions such as total abstinence campaigns. As President Clinton declared at the World AIDS conference they just don't work. At the end of the day education, understanding and investment in services are the ways forward for us. I cannot possibly do justice to such a huge topic now but I would point out that the Medical Curriculum of this University does not I feel provide adequate teaching of sexual health issues to enable our young doctors to provide informed and unprejudiced care for their patients.

Fig 8. 16th Century etching depicting physicians examining urine in the diagnostic process

CONCLUSION.

Ladies and gentlemen I am deeply aware of the honour accorded to me by the Staff of this great institution by asking me to give the Oration of 2006. When I entered my specialty I guess it could have been portrayed by this depiction of medieval physicians (fig 8) but the last three decades has seen us back at the forefront of medical research and ethical thinking. As with art I hope I have challenged some of your views and perhaps even offended some. I would only say in closing that sexual health is a vastly undervalued aspect of our lives and please let us not consider it in terms of banalities, clichés or worse still, personal prejudice.

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Case Report

Thorn injury mimicking a septic arthritis of the knee.

Jon D Clarke, Daniel D McCaffrey

Accepted 10 March 2007

INTRODUCTION

An 8 year old boy was admitted via the accident and emergency (A&E) department with a painful swollen right knee. He described sustaining an injury to the knee some four hours previously when he had crawled under a tree and knelt on a sharp twig, which pierced his trousers and the soft tissues of his right knee. He described also removing the offending twig from his knee.

On examination in the A&E department he had a swollen, generally tender right knee with decreased range of movement. There was a large effusion with a positive patellar tap. There was also evidence of a small puncture wound in the supero-medial aspect of his right knee. He was apyrexic (36.2^0C) and systemically well. The knee was aspirated under aseptic technique, and 8ml of turbid fluid was sampled. This was sent for direct microscopy and Gram stain as well as for culture for organisms and sensitivities, which ultimately failed to show the presence of organisms. Routine blood testing revealed Haemoglobin of 11.6g/dL, White Cell Count of $14.5x10^3$/mL, and significantly, a normal C-reactive protein (CRP) level of <5mg/L. The possibility of a septic arthritis was raised, but it was felt that on balance, given the clinical condition of the patient, the rapid onset of the effusion, his temperature, routine laboratory results and the results of the aspirate direct microscopy and Gram stain, this diagnosis was less likely. The patient was commenced on intravenous co-amoxiclav and admitted to the ward for observation.

Overnight the patients' symptoms failed to settle and the following day he underwent arthrotomy and washout of his right knee under general anaesthetic. The incision included the puncture wound and followed the track made by the plant material into the joint. Upon opening the joint there was further turbid fluid which was swabbed and sent for culture. Careful examination of the joint revealed a small piece of thorn within the joint, which was removed (fig 1). The knee joint was thoroughly washed out and closed in layers. Post-operative recovery was unremarkable. The patient was discharged home two days later on oral antibiotics.

Fig 1. Foreign body removed from knee joint at arthrotomy, measuring approximately 2.5mm.

The direct microscopy from the original aspirate revealed 3+ pus cells, occasional epithelial cells, and no organisms and the bacteriological culture yielded no growth after 48 hours. The swab taken at arthrotomy also failed to show any growth at 48 hours.

DISCUSSION

Thorn injury to joints is uncommon, but should be thought of in cases of acute monoarticular arthritis. In this case, the most salient feature of the history was that of a penetrating injury to the knee with plant material, which was readily volunteered by the patient, but is often overlooked. Additionally, the patient had removed the twig at the time of his injury, however removal had been incomplete, leaving a small piece of plant material behind. Also of worthy consideration was the rapid onset of symptoms from the time of injury (less than four hours). In a case of this type, where a history of penetrating injury is present, then arthroscopic washout or formal arthrotomy is mandatory since there are numerous examples in the literature of cases of recurrent episodes of isolated joint sepsis/synovitis. Washout of a joint but leaving plant material behind is likely to cause recurrent symptoms which can result in multiple presentations and ultimately require extensive treatments including synovectomy.

Foreign body synovitis may simulate an acute septic arthritis[1]. A history of penetrating injury to a joint may not be readily forthcoming, or may be overlooked in the history taking with consequences for long-term sequelae.

In cases of missed diagnosis, the typical presentation may often be of a transient synovitis followed by a relatively asymptomatic period and later by a chronic arthritis long after the thorn injury has been forgotten. In one report a 14 year old boy admitted to hospital 6 weeks after a palm tree injury was shown to have a foreign body on ultrasound scan (USS), with treatment subsequently including repeated arthrotomies[2].

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Suspicion of, or history of thorn injury around a joint should be treated by thorough washout of joint and inspection of the joint (with removal of any foreign body), which may be via arthroscopy or arthrotomy. Arthroscopy in theory affords the best view with lower morbidity compared with arthrotomy[3,4]. Although much of the published work comparing arthrotomy with arthroscopy in children is condition specific (for example septic arthritis, osteochondritis dessicans, diagnostic)[5], there is overwhelming evidence in the current literature favouring arthroscopy over arthrotomy. Potential disadvantages of arthroscopy of the knee include the increased technical demands and the small risk of damage to the articular surface. Additionally, the operating time of the procedure will be increased with arthroscopy[5]. However, numerous published studies have shown clearly that there is decreased morbidity with improved outcomes, as well as better visualisation of the joint using arthroscopy over arthrotomy in cases of both plant thorn injuries and true septic arthritis. Effective early treatment can also be achieved with the arthroscopic route[3]. A further consideration regarding the decision to proceed arthoscopically or via arthrotomy will be surgeon preference and familiarity. Other imaging modalities, such as USS, computed tomography, and magnetic resonance imaging (MRI) may be employed in cases where intra-articular foreign bodies have not been identified. Examples of this type of case may be where there has been a delay in diagnosis or the foreign body is extra-articular[6]. Furthermore, cases have been reported where a plant thorn synovitis was diagnosed after MRI was initially used to exclude other differential diagnoses for example septic arthritis of an elbow joint[7].

The commonest organism isolated from positive cultures (synovial fluid, blood cultures) is *Pantoea agglomerans*, a gram negative bacterium found in human and animal faeces, as well as plants[8]. It is interesting to note historically that in cases diagnosed as aseptic, the inflammatory response was attributed to plant toxin[9]. It is possible that aseptic cases are in fact *Pantoea agglomerans* septic arthritis with negative cultures. Negative cultures can be due to inappropriate culture media, or inaccuracies in the identification of organisms[2]. Awareness of the possibility of a plant thorn injury should be borne in mind, and if suspected treatment as outlined above be instigated, to avoid the possibility of long term complications.

CONCLUSION.

The possibility of penetrating injury with plant material should always be considered and excluded in cases of an apparent rapidly developing effusion, and careful attention to the history of injury must be made. A normal CRP result, as in this case, adds further weight to this differential diagnosis, as it would be considerably elevated in true infection. If an injury of this type is present then the treatment must be formal arthrotomy or arthroscopy and washout since simply washing out the joint but leaving plant material behind may lead to recurrent problems.

The authors have no conflict of interest

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Case Report

Complete laparoscopic management of cholecystocutaneous fistula.

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INTRODUCTION

Cholecysto-cutaneous fistula is very rare in modern day surgical practice and is usually dealt with by open surgery. The incidence has decreased due to prompt and early surgical management of patients with acute cholecystitis. Although 10% of patients with acute cholecystitis can develop spontaneous perforation of the gallbladder, cholecysto-cutaneous fistula is one of the rarest presentations[1]. As it is more common in elderly patients, an open procedure does increase morbidity in these patients .We report a 76 year old lady with a cholecysto-cutaneous fistula that was managed laparoscopically.

CASE REPORT

A 76 year old lady who was overweight, diabetic and hypertensive, presented with acute cholecystitis. She declined surgery but subsequently continued to have symptoms related to her gallbladder problem. A computerised tomography scan showed thick fluid around the area of the gallbladder fundus and segment 4b of the liver going into the right rectus sheath and subcutaneous tissues (fig 1). She developed an abscess on the anterior abdominal wall which later burst (fig 2). She was subsequently booked for laparoscopic cholecystectomy

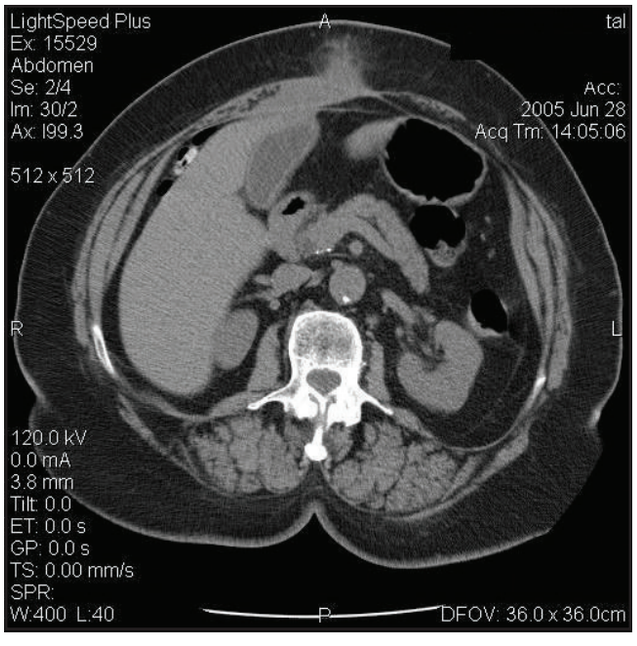

Fig 1. CT scan showing cholecystocutaneous fistula

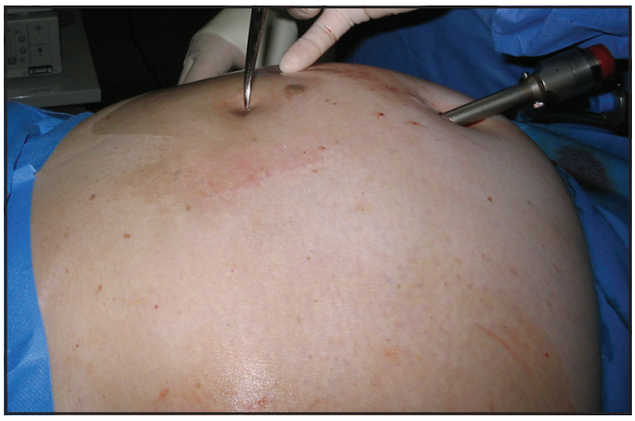

Fig 2. Photograph showing location of fistula on anterior abdominal wall

and excision of fistula. First a standard umbilical camera port was placed away from fistulous area followed by a lateral abdominal port on the right side to assess for suitability for laparoscopic dissection before inserting other standard epigastric and right mid-clavicular ports. The fistula was dissected from anterior abdominal wall followed by gall bladder removal. The fistula was not excised. The patient recovered well after the procedure and was discharged home.

DISCUSSION

Thilesus in 1670 first described the spontaneous cholecysto-cutanous fistula. Courvoisier in 1890 described a series of 499 patients with perforation of gall bladder in which 169 patients developed cholecysto-cutaneous fistulae[2].

A cholecysto-cutaneous fistula develops as a result of acute cholecystitis. Perforation usually develops in the fundus due to less vascularisation. Once perforation occurs, it may either drain freely into the peritoneal cavity or become adhered to adjacent structures like the duodenum, colon or liver which may sometimes result in a fistula between gallbladder and bowel. Rarely the gallbladder becomes adherent to the abdominal wall and results in the formation of cholecysto-

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cutanous fistula[3,4]. Typically a fistula presents as a draining sinus in the right upper quadrant of the abdomen although its presence has been reported in the umbilicus, the left sided costal margin, right iliac fossa, right groin, anterior chest wall and in the gluteal region[5]. In modern day practice, due to the prompt management of acute cholecystitis with antibiotics and early cholecystectomy, a cholecysto-cutaneous fistula has become very rare unless there is delay in diagnosis, or the patient has severe comorbidity posing high risk for anaesthesia. Rarely a patient may refuse surgery until a complication occurs as in our case. Diagnosis may either be evident as it may discharge bile and gall stones or may be difficult as it may just drain pus.

The diagnosis can be either made early in its course of development when only an abscess can be demonstrated by ultrasonography as a sonolucent mass with echogenic material adjacent to the anterior abdominal wall. A CT scan may better delineate the abscess and may demonstrate a fistula as well once it has developed (fig 1). A fistulogram may sometimes be needed to demonstrate the origin.

Management of a cholecysto-cutaneous fistula involves institution of broad-spectrum antibiotics, incision and drainage of the sinus abscess and sending samples for culture and sensitivity. Once the acute phase is over, an elective cholecystectomy and excision of fistula is performed usually by open operation[6]. Since these patients are usually elderly with some co-morbidity, an open operation does increase risks in these patients. Laparoscopic approach decreases the stress associated with surgery if the proper expertise to perform the operation is available.

CONCLUSION

Laparoscopic approach to cholecysto-cutaneous fistula is safe and associated with fewer risks to patients. We recommend this approach especially for patients with other co-morbidities.

The authors have no conflict of interest.

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Case Report

Primary Hyperparathyroidism and its management in a woman with Hereditary Long QT syndrome.

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Key Words: Hyperparathyroidism, Long QT syndrome

INTRODUCTION.

Primary hyperparathyroidism is a disease characterized by elevated serum calcium and inappropriately raised parathyroid hormone (PTH) levels. Its prevalence is 3/1000 in the general population[1]. Common symptoms include fatigue, thirst, epigastric pain, renal colic and depression. 90% of cases are caused by single parathyroid adenomas and the treatment usually involves surgical excision of the abnormal gland. Inherited long QT syndrome (LQTS) is a disorder characterized by prolonged ventricular repolarisation and a propensity for syncope, polymorphic ventricular tachycardia (torsade de pointes), and sudden death[2]. The disease is now classified as a 'channelopathy', with mutations having been reported in genes encoding cardiac ion channels[3]. We report the case of a 40 year old woman with inherited LQTS who was found to have primary hyperparathyroidism and her subsequent operative management.

CASE PRESENTATION

A 40 year old woman was diagnosed with LQTS after attending the Cardiology Department of the Royal Victoria Hospital as part of family screening. Several relatives had been identified as carrying a mutation in the KCNQ1 gene. She reported no cardiac symptoms; in particular, she had no past history of syncope. However, she did note the recent onset of fatigue. There was no other past medical history of note and clinical examination was normal. Her resting electrocardiograph (ECG) revealed a QTc interval of 472msec (Fig 1). Ambulatory ECG monitoring and exercise stress testing did not reveal any cardiac arrhythmias and she was commenced prophylactically on low dose beta-blocker to reduce her risk of fatal arrhythmias. Subsequent DNA analysis confirmed that she carried the same KCNQ1 mutation, which had been reported in other family members. Baseline serum electrolytes and thyroid function tests were normal, apart from an elevation in serum calcium of 3.3 mmol/litre [normal range 2.10-2.60 mmol/litre]. Primary hyperparathyroidism was suspected. Serum parathyroid hormone (PTH) was 197pcg/ml (normal range 12-87 pcg/ml) and parathyroid pertechnetate MIBI subtraction scanning showed a large uptake of radionuclide adjacent to the right lobe of the thyroid gland. A diagnosis of primary hyperparathyroidism was made and, in view of the marked persistent elevation of serum calcium, surgical intervention was recommended. Preoperatively, her levels of magnesium and potassium were optimised and ß blockade continued.

Anaesthesia was induced with target-controlled infusion (TCI) of propofol, remifentanil and vecuronium with full monitoring and an arterial line in place. A very large right inferior parathyroid adenoma was identified and removed (Fig 2).

Postoperatively calcium and magnesium levels and QT interval on the electrocardiogram were measured daily. She was treated with prophylactic oral calcium to prevent a precipitous fall in calcium that may predispose to arrhythmia. Her serum calcium fell to the lower limit of normal and she was discharged home on postoperative day 5 without complication, to continue on oral calcium supplements in the short-term.

DISCUSSION

Inherited LQTS is characterised by a prolonged QT interval on ECG, and is caused by delayed myocyte repolarisation. It includes a group of disorders, known as channelopathies, which result from mutations in genes encoding cardiac ion channels or ankyrin-B. Patients with this condition are predisposed to ventricular tachyarrhythmias, in particular torsade de pointes, and can present with syncope or sudden death. In certain individuals the syncope may be related to increased emotion or exercise (adrenergic stimulation). To date, over 400 mutations have been reported in eight genes (LQT1-8)[4]. Seven of the eight genes code for ion-channel proteins (potassium / sodium / calcium) and the other gene encodes ankyrin-B, a membrane-anchoring protein associated with Na/K ATPase and the Na/Ca exchanger.

Our patient had a mutation in the KCNQ1 gene (LQT1), the alpha unit of the slowly deactivating delayed rectifier potassium channel. This is one of the most common genes implicated in inherited LQTS[4]. In normal individuals ß-adrenoreceptor stimulation reduces the action potential and QT interval; however, with KCNQ1 gene mutations

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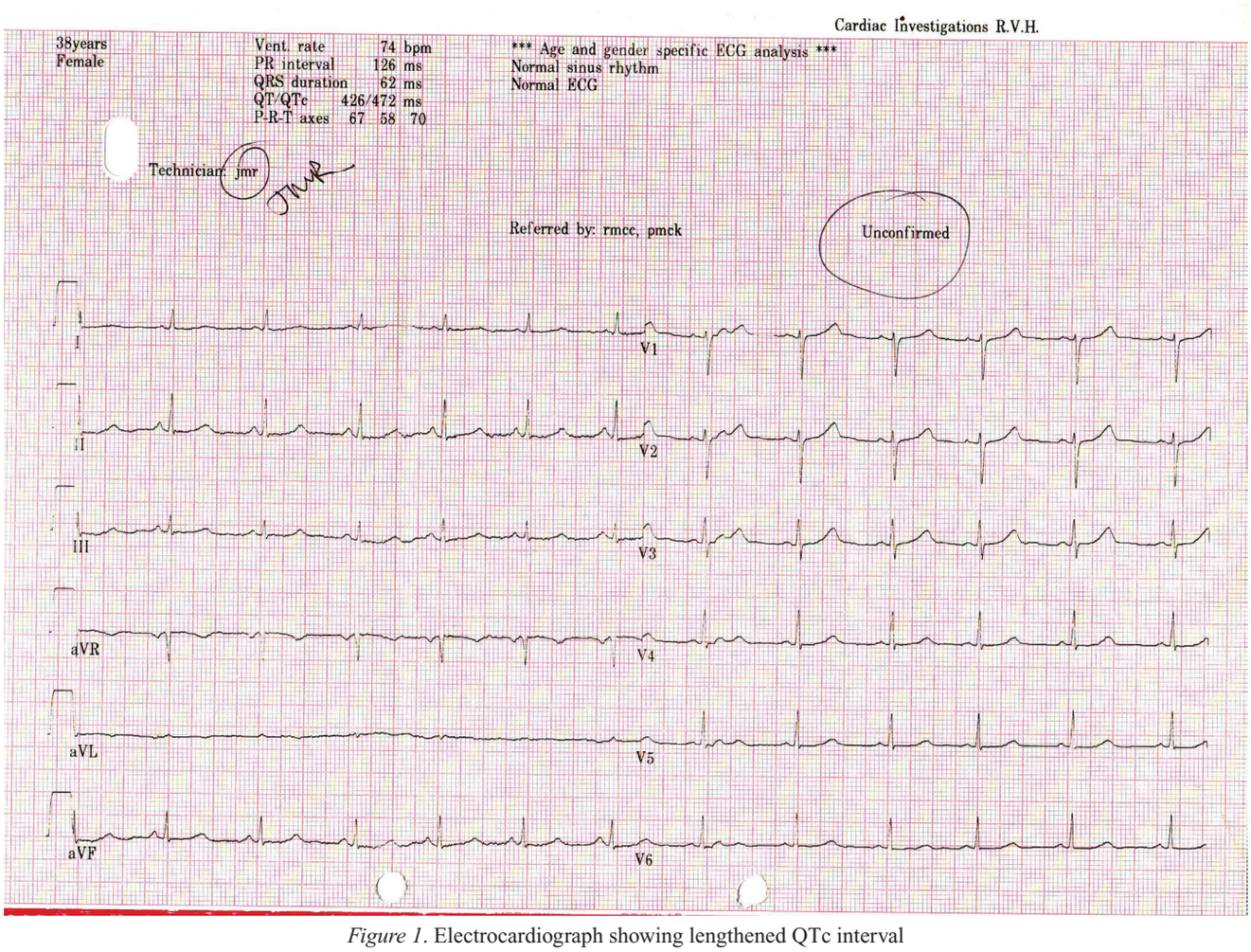

Figure 1. Electrocardiograph showing lengthened QTc interval

the channels do not respond normally, thus predisposing individuals to cardiac arrhythmias. Treatment with ß-adrenoreceptor blocking medication can be very effective for these patients[5]. There are several acquired factors that have been shown to cause or worsen QT prolongation including hypomagnesaemia, hypokalaemia, and hypocalcaemia[6].

Primary hyperparathyroidism is caused by adenomatous (87-90%) or hyperplastic (5-12%) parathyroid gland or glands releasing parathyroid hormone (PTH) autonomously. This causes serum calcium to rise. Following successful surgery PTH levels fall to within the normal range on day one[7]. The lowest serum calcium levels occur around day three when many patients may become temporarily (and asymptomatically) hypocalcaemic[8]. Our patient was prophylactically treated with calcium to avoid a sharp drop in her serum calcium.

Anaesthesia in patients with LQTS carries a risk of intra-operative ventricular arrhythmias. Maintenance of normal serum electrolyte levels is important. Alleviating patient anxiety and maintaining preoperative normoxaemia, normocarbia and normoglycaemia all minimize sympathetic activation and may reduce this risk. However the anaesthetic team should be prepared to manage cardiac arrhythmias, including torsade de pointes and ventricular fibrillation.

There are no reported cases in the medical literature of primary hyperparathyroidism and LQTS co-segregating in the same patient. Postoperative hypocalcaemia that may occur following successful surgery and anaesthetic related adrenergic stimulation are risk factors for the development of ventricular arrhythmias in this rare cohort of patients. Careful perioperative ß blockade and electrolyte management are essential. Inhalation anaesthetic agents, such as isoflurane and sevoflurane, may prolong the QT interval in unpremedicated healthy humans[9]. However, propofol may have beneficial effects on the QT interval in patients with LQTS and was thus chosen as the anaesthetic agent of choice in this case.

CONCLUSION

LQTS is a rare condition predisposing to life-threatening ventricular arrhythmias. Its importance lies in the significant morbidity and mortality associated with a failure to recognize and treat it. Our case illustrates the steps that may be taken to minimize this risk in such patients in the perioperative period. These steps include adequate ß blockade, avoidance of inhalation anaesthesia, careful attention to electrolyte balance and involvement and co-operation of a multidisciplinary team of specialists.

The authors have no conflict of interest.

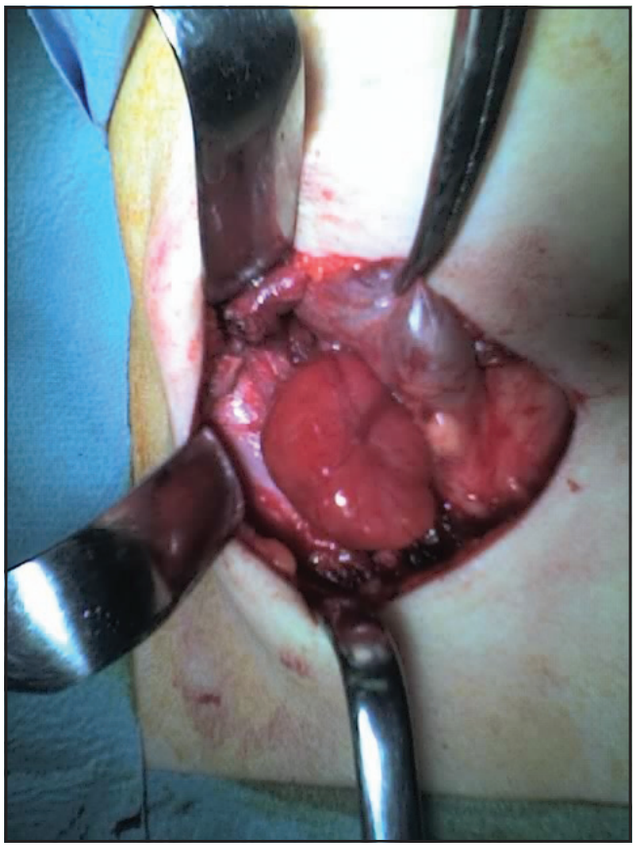

Figure 2. Large right inferior parathyroid adenoma in situ

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Letters

FOLLOW UP AFTER PEG TUBE INSERTION.

Editor,

Having a feeding tube in situ made me have more than an academic interest in the article *Who Follows Up Patients After Peg Tube Insertion?*[1]. Because of complete oesophageal blockage my gastrostomy was performed at laparotomy. However to all intents and purposes the insert is a PEG tube.

Before discharge from the Royal Victoria Hospital, Belfast, my daughter and I were well trained in the use and care of the tube and how to get help in an emergency. A dietician and a specialist nutrition nurse advised on amounts of liquid feed to use and as to the necessity for flushing the tube frequently.

My General Practitioner was informed of the date of my discharge as were the District Nursing Service, the Community Dietician and the Occupational Therapists so all necessary equipment was waiting for me at home. A District Nurse visited my daughter before my discharge and met me at her home on the day of discharge to ensure that necessary equipment had been delivered and we were fully trained in the care of the tube. During my second night at home the alarm on the feeding pump activated and feeding stopped. Next morning a District Nurse confirmed that the tube was still in the stomach and that the balloon was intact. No cause for alarm was found. It was comforting to know that expert help was available as and when required.

The Article states '*Ideally all patients should have community follow-up by a dietician, speech and language therapist, and an appropriately trained professional who can deal with problems and advise accordingly*'[1]. In the area covered by the former Ulster Community & Hospitals Trust the District Nurses are performing that duty admirably. I cannot speak too highly of my treatment in hospital and since my discharge.

Herbert Gallagher*, *Retired Surgeon*

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REFERENCE:

1. Lowry S, Johnston SD. *Who Follows Up Patients After PEG Tube Insertion? Ulster Med J* 2007;**76(2):**88-90.

Editor

The article on PEG Tubes by Lowry and Johnston[1] fails to mention if the patients in the survey were referred to the District Nursing Service which is best placed for the seamless transfer from secondary to primary care. The successful discharge of a patient requiring enteral feeding requires good forward planning and liaison between hospital and community nursing staff. Best practice would dictate the District Nurse visiting the patient in the ward for an holistic assessment but if this is not possible, a visit to the home before discharge to introduce herself, to assess the layout and equipment requirements and let the family know who to contact and what support to expect when the patient comes home.

Most families require time to adjust and need the support of the evening nursing service to help set up the night feed and a morning call to supervise disconnecting and flushing the tube until they feel confident enough to do this themselves. The time is well spent and forges the supportive, trusting relationships essential in primary care and possible palliative and terminal care at home.

This level of care is available to all patients in this trust and yet your article mentioned the District Nursing Service only in saying that we 'may not have been trained in the insertion of balloon gastrostomy replacement tubes'. Although many of us are, this is not pertinent to research looking at 'appropriate community follow up' six months following discharge from hospital when this needs to be performed in a hospital environment.

The article also mentioned '*patients attending busy Accident & Emergency departments when the PEG tube falls out'*. However it failed to mention the number of patients discharged from these units with totally inadequate Foley catheters inserted due to the lack of adequately trained personnel, which is my experience! I welcome the debate but please remember, come 5pm on a Friday, where are the Dietician and the Speech & Language Therapist!

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REFERENCE:

1. Lowry S, Johnston SD. *Who Follows Up Patients After PEG Tube Insertion? Ulster Med J* 2007;**76(2):** 88-90.

AUTHORS REPLY

It is encouraging to see that Mr. Gallagher is so positive regarding his aftercare following PEG (Percutaneous Endoscopic Gastrostomy) tube insertion. This is a real credit to those involved in his care and support.

In reply to Sr. McGivern, we would point out that the Nutrition Nurse specialists in our trust send a letter (via the patient) to the District nursing services. We recognise that in an ideal world the District Nurses would visit patients in hospital or their carers at home pre-discharge to enable a seamless transition into the community. However, this would be difficult in the Belfast City Hospital since we provide a regional PEG tube service[1] for patients being treated through the cancer centre e.g. head and neck cancer patients. For these patients the hospital stay for PEG tube insertion may only be overnight. For other patients e.g. following stroke, the holistic approach to case management should be employed. In some patients, significant consideration should be given to who will provide PEG care on discharge when assessing patients prior to PEG tube insertion.

The observation that patients are discharged from Accident and Emergency units with inadequate Foley catheters in-situ is clearly a cause for concern and does highlight the need

for more training and widespread availability of gastrostomy replacement tubes. Replacement gastrostomy tubes are expensive and it is impractical to have every size and make available. In addition, attending staff need to know what size of PEG tube was removed / dislodged in order to replace a similar size and unfortunately this information is not always available. All attending professionals caring for patients in the community following PEG tube insertion have a responsibility to be fully informed and competent.

It is our current practice that all patients being discharged with new PEG tubes are given a replacement gastrostomy tube and instructions as to what to do if the original tube becomes dislodged. This advice includes bringing it with them to Accident and Emergency unit if a hospital visit is required. Nutrition Nurse specialists in our trust send a letter to the District nursing services which also includes the requisition numbers for replacement gastrostomy tubes and the request that these are ordered and available in the patients' homes. Contact details of the Nutrition Nurse specialist are also contained in the documentation.

We would dispute that our comments regarding the ability of District Nurses to replace gastrostomy tubes are inappropriate since this "needs to be performed in a hospital environment". Ideally, trained professionals in the community are suitably situated to replace gastrostomy tubes to avoid unnecessary trips to Accident and Emergency units.

The letters have identified several areas for possible service development. We greatly appreciate the comprehensive service provided in the community by our District Nursing colleagues and others.

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SYMPTOMATIC HYPERPHOSPHATAEMIA FOLLOWING PHOSPHATE ENEMA IN A HEALTHY ADULT

Editor,

Adequate colonic cleansing is essential for accurate and safe colonic procedures[1]. Common preparations for cleansing include diet in combination with a cathartic agent (stimulants), gut lavage, and phosphate preparations (osmotics). Phosphate preparations offer an attractive alternative due to smaller volumes required for ingestion. We report an unusual case of acute hyperphosphataemia following the administration of a phosphate enema.

Case report: A 79 year lady with a six month history of lower abdominal cramps and diarrhoea including mucous per rectum underwent flexible sigmoidoscopy. She had taken one sachet of picolax (10mg sodium picosulfate) as bowel preparation the night before and reported minimal effect. As such she received a single phosphate enema at 09.30. This contained 30.8g of sodium phosphate in 118ml delivered by a standard rectal tube. She became unwell within 10-15 minutes with severe nausea and dizziness. Observations demonstrated a heart rate of 86 beats per minute and a blood pressure of 80/34mmHg. Bloods were taken for urea and electrolytes and a normal saline infusion was started. Over the subsequent 90 minutes her blood pressure improved to a systolic of 100mmHg and her heart rate fell to 60 beats per minute. Her blood results were normal with the exception of a phosphate of 2.65 mmol/L (0.8 – 1.55). Her symptoms and clinical observations continued to improve and by 11.30 she was able to undergo flexible sigmoidoscopy which was normal. Repeat blood tests two days later were normal (phosphate 1.31mmol/L). At subsequent outpatient review a small bowel series and ultrasound scan of abdomen were normal. Barium enema demonstrated mild sigmoid diverticular disease. Eight months later her gastro-intestinal symptoms had settled.

Discussion: Asymptomatic hyperphosphataemia with levels 2-3 times above normal has been reported in nearly 25% of individuals with normal renal function after administration of oral phosphate-based laxatives[2]. Current recommendations[3] simply suggest caution in the elderly and those with renal impairment. Multiple case reports exist warning of the dangers of oral phosphate-based laxatives in patients with renal disease and in paediatrics and only a handful of accounts of hyperphosphataemia have been reported in patients receiving phosphate-based enemas in similar patient groups[4,5].

The mechanism of hyperphosphataemia in renal impairment is felt to be secondary to decreased excretion of phosphate by the kidneys. In paediatrics it is believed to occur due to large volumes of phosphate containing solution, relative to the child's size. Other recognised causes following oral phosphate based laxatives include Hirschsprung's disease, faecal impaction, or functional intestinal obstruction where increased gastrointestinal phosphate absorption may occur, elderly age because of the diminished intestinal motility, and increased intestinal permeability in the presence of inflammatory intestinal disorders[6].

There are no cases in the literature of hyperphosphataemia arising due to diverticular disease following phosphate-based enema. However one could postulate that, for the reasons mentioned above, it could be an aetiological factor albeit unlikely in this instance due to the absence of significant disease or active inflammation. In summary this case report highlights the need for vigilance even in patients deemed low risk of developing hyperphosphataemia following a phosphate-based enema.

The authors have no conflict of interest.

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PERIANAL LEIOMYOMA INVOLVING THE ANAL SPHINCTER.

Editor,

Leiomyomas are benign soft tissue tumours of mesenchymal origin and can develop wherever smooth muscle is present. Their pathogenesis remains obscure. Deep soft tissue leiomyomas are rare and are further classified as somatic and retroperitoneal. Whereas the former have a predilection to occur in extremities (usually in the thigh) the latter usually occur in the pelvic retroperitoneum[1]. We report a case of perianal leiomyoma stretching the muscle fibres of the external sphincter. Reports of perianal leiomyomas are sparse in the literature. Features of deep soft tissue leiomyomas, anal leiomyomas and their management are discussed.

Clinical background: A 45-year-old female presented with a history of a painless swelling in the perianal region for 18 months, gradually increasing in size. Clinical examination revealed a 30mm diameter extrasphincteric swelling in the rectovaginal septum. Endoanal ultrasonography showed a soft tissue mass related to the anterior and lateral wall of the anal canal over its entire length. Although the mass appeared to be entirely outside the external sphincter complex there was a suspicion of sphincter involvement anteriorly. The lesion was well defined and homogeneous in texture with an intermediate to low signal intensity on T2 weighed magnetic resonance imaging (Figure 1). Fat saturation (FAT SAT) & Short Tau Inversion Recovery (STIR) sequences suggested that the lesion displaced rather than infiltrated the sphincter. There was loss of visualisation of the lower subcutaneous and superficial components of the external sphincter with a suspicion of extension to the deeper component of the anal sphincter.

An elective excision was performed with a circumanal incision. Sphincter fibres were stretched over the surface of the lesion. Complete extra capsular dissection of the lesion was performed in continuity. Sphincter fibres were divided and repaired with 2'0 PDS.

Macroscopically, the tumour was solid and well circumscribed with a whorled white cut surface without gross cystic

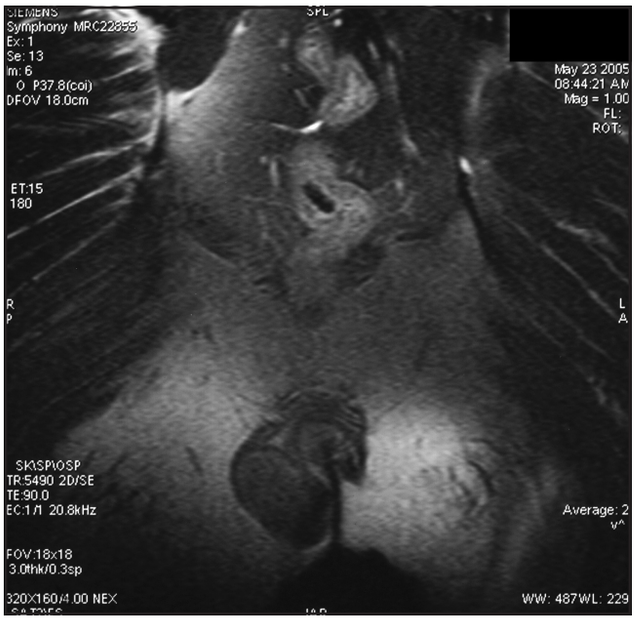

Fig 1. MR sequence with T2 weighting with fat saturation demonstrating an ovoid shaped low signal mass in relation to the right side of anal canal displacing the fibres of external sphincter.

degeneration or necrosis. The tumour measured 65mm in diameter. Histological examination revealed a circumscribed smooth muscle tumour consisting of interlacing fascicles of bland spindle cells admixed with focal areas of myxohyaline stroma. There was no cytological atypia, abnormal mitotic activity or necrosis. Only one or two mitoses were identified in the sections examined. Immunohistochemistry demonstrated strong positivity for smooth muscle markers desmin (Figure 2) and actin. Positivity for estrogen and progesterone receptors was also noted. CD117 was negative. Two months after the surgery, the patient has no incontinence with good sphincter tone.

Discussion: First described by Virchow in 1854, leiomyomas are benign soft tissue tumours that arise from smooth muscle accounting for 3.8% of all benign soft tissue tumours[1]. Kloepfer originally noted a hereditary syndrome characterised by multiple leiomyomas in 1958. Leiomyomata can develop

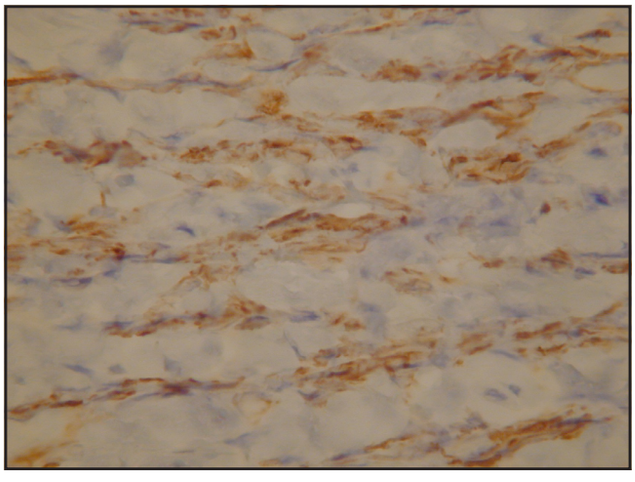

Fig 2. Immunohistochemical staining for Desmin (immunoperoxidase, x 250)

wherever smooth muscle is present, the commonest site being the uterine myometrium.

Leiomyomas are classified into superficial pilar, genital, angioleiomyoma and deep varieties. The pathological features of deep soft tissue leiomyomas were first described by Kilpatrick et al[2] and Billings et al[3]. They are further categorised as somatic and retroperitoneal types[2, 3]. Whereas somatic soft tissue leiomyomas affect the sexes equally with predilection to the extremities (usually in the thigh), retroperitoneal leiomyomas occur preferentially in women during the peri-menopausal period, usually in the pelvic retroperitoneum[1].

Somatic leiomyomas most often present as a localised mass. In addition, perianal leiomyomas tend to cause discomfort in the seated posture and also during defecation. Gastrointestinal symptoms such as constipation and bleeding are uncommon. The perianal region is a rare site and proximity to the sphincter complex can have considerable implications for operative management[1]. Examination reveals small rubbery to large lobulated firm lesions with intact mobile mucosa in those with endoluminal extension.

Macroscopically, deep soft tissue leiomyomas tend to be well defined and are usually surrounded by a fibrous pseudocapsule. They tend to be larger than superficial leiomyomas since they tend to remain occult by virtue of their site. Histologically, somatic soft tissue leiomyomas are composed of interlacing bundles of mature smooth muscle cells with abundant eosinophilic cytoplasm which, by definition, lack atypia and necrosis and are mitotically inactive (<1 mitoses/50 high power fields). Myxohyaline degeneration and regressive changes are constant features. Foci of dystrophic calcification are commonly present.

Unlike somatic soft tissue leiomyomas, 20% of retroperitoneal or abdominal leiomyomas display low levels of mitotic activity (<5 mitoses / 50 HPF[4] or <1-10 /50 HPF[3]). Leiomyomas of the anal canal arise in the muscle coat or less commonly in the muscularis mucosae. They grow slowly and the anoderm usually remains intact. Within the rectum and anal canal, leiomyomas can adopt different growth patterns, namely endoluminal, intramural or extraluminal. Most leiomyomas of the large bowel and rectum grow endoluminally whereas tumours of the anal canal tend to grow away from the lumen[5]. Sometimes they grow in both directions, forming an 'hour glass'.

Many tumours previously regarded as leiomyomas of the gastrointestinal tract are now considered as GISTs. Although the incidence of anal canal GIST is low (<2%), 10 to 30% of GISTs are malignant[6]. GISTs are more common than other mesenchymal tumours of the gastrointestinal tract except in the oesophagus where leiomyomas predominate. GISTs are differentiated from leiomyomas on the basis of immunohistochemical staining patterns including positivity for CD117, CD34, and smooth muscle actin and are usually negative for desmin that tends be expressed by the latter[6]. Currently the best indicator of malignancy in GISTs is the presence of invasion of adjacent organs or metastatic disease seen on imaging or at surgery.

The treatment of choice for anal canal leiomyomas and low grade GISTs is excision. Sphincter preservation should be possible. High grade GISTs require wide excision that might lead to considerable sphincter damage[5]. Unlike GISTs, deep soft tissue leiomyomas have a low recurrence rate if local excision is complete[2, 4] Deep soft tissue lesions that lack atypia, necrosis and mitotic activity and retroperitoneal lesions with <10 mitoses / 50 HPF can be labelled benign with reasonable confidence expecting a good outcome. Lesions falling outside this criteria and not obviously malignant (characterised by atypia and mitoses) should be considered as tumours of uncertain malignant potential in which case a regular follow up is advised[5, 6].

Conclusion: Deep soft tissue leiomyomas in the perianal region are rare. They may mimic anal leiomyomas and GISTs when they extend close to the sphincter. Despite the similarity in clinical presentation, histological features and prognosis, it is important to identify GISTs based on immunohistochemistry for CD117 since those with malignant potential require regular follow up and many of these tumours will benefit from imatinib mesylate, an inhibitor of the c-kit tyrosine kinase receptor. As with all spindle cell neoplasms, meticulous histopathological attention to the presence of significant mitotic activity, atypia and necrosis is essential since these factors would suggest potential malignant behaviour in which case a more radical surgical excision and follow up would be warranted.

The authors have no conflict of interest

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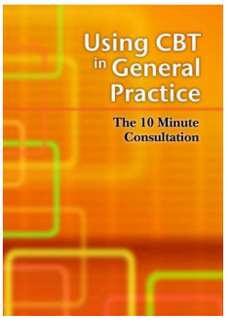
Book Reviews



Using CBT in General Practice – a 10 Minute Consultation. Lee David. Scion Publishing Ltd. August 2006. 350pp. £24.99. ISBN 978-1-90484-233-0

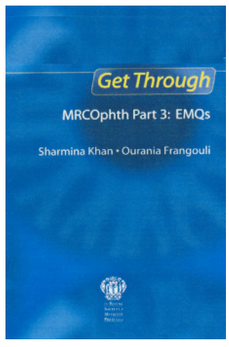
Psychological symptoms are widespread and prevalent in primary care. Overall about one quarter of GP consultations are with patients with mental disorders. Cognitive behaviour therapy (CBT) can offer an effective approach to the management of a wide variety of psychological and emotional disorders. Traditionally CBT has involved a series of one hour sessions with patients. However this book sets out to show that CBT can be applied effectively within the 10 minute primary care consultations and gives GPs a framework to do this. This is particularly apt at present as doctors are being encouraged to use non-therapeutic methods for the management of mild and moderate depression. However, the number of health professionals trained in CBT is limited, although there may be increased provision for CBT in locally enhanced services as part of the new GP contract. From this book it is clear that many of the skills involved in CBT are already being used by general practitioners in routine consultations.

There are plenty of useful tables and figures and every few pages there are key summary points. I have to say that on reading the book it is difficult to imagine CBT fitting into a 10 minute consultation. Advice that patients should receive a written record of the discussion may be helpful, but is also likely to be time consuming for the doctor in surgery or outpatients.

There is a section which covers dealing with heartsink patients, and this primarily focuses on dealing with the negative reactions a doctor may be feel towards such a patient. The chapter gives various coping strategies for doctors in this position. The chapter on dealing with depression is very useful. It gives a good background to the aetiology of depression. It questions the approaches that GPs may use to diagnose depression and then covers management including the use of CBT. Sensibly the author recognises that as the availability of CBT is limited a combination of medication and other approaches should be used. There is also a section which covers the use of CBM in physical illness and disability. This primarily concentrates on promoting the patient's independence and enjoyment of life despite the presence of a chronic disease. Many GPs would find this chapter helpful.

Overall I enjoyed reading the book and found it helpful. At times it was a bit repetitive and could perhaps have been a little shorter. After reading this book, even if you are not sold on using cognitive behaviour therapy in consultations, you will have a good awareness of what is involved and this can only be helpful for both the patient and doctor.

Drew Gilliland



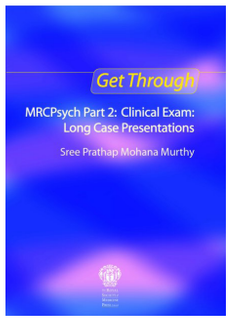
Get Through MRCOphth Part 3: EMQs. Khan S & Frangouli O. Royal Society of Medicine Press Ltd. August 2006. 208pp. £22.50. ISBN: 978-1-85315-609-0

In the world of book publication, like most things, timing is everything. It is unfortunate that we live in such transient times. This book could live or die by the shifting sands of medical training. In Ophthalmology, this has at least one relevant consequence to the success of this book. In two years' time, there will be no more MRCOphth Part 3 exams (according to the Royal College of Ophthalmologists). It will be replaced by the 'better' and more clinical FRCOphth Part 2 Exam. However, every cloud has a silver lining. With limited opportunities left to pass this exam, good books will be at a premium for Ophthalmologists currently caught between two systems.

This book benefits from addressing the current lack of EMQs available to candidates. It is simply a book of exam-based questions that cover the main topics of Ophthalmology. There is a modest section of explanations within the answer section, which serves to educate the reader, rather than simply expose them to themed questions. Unfortunately this section is not particularly extensive, and so limits its appeal to the generalist who may have read the book for the clear clinical scenarios.

In spite of this, the book is detailed enough to hold the attention of junior ophthalmologists studying for clinical exams. The various clinical scenarios used in the questions would also serve as a refresher for those who have passed these hurdles. The authors should be commended for their efforts in meeting the marked demand for exam-specific questions, as the resultant book is a fair reflection of the current format.

David Lockington



Get Through MRCPsych Part 2: Clinical Exam: Long Case Presentations. Sree Prathap Mohana Murthy. Royal Society of Medicine Press Ltd. August 2006. 164pp. £22.50. ISBN: 978-1-85315-684-7

The catchy, confidence-inspiring title of this book reflects what must surely be on the mind of all candidates preparing for the Part 2 clinical examination. It's a marketing ploy, a take on the original 'For Dummies' series, which cleverly avoids the disturbing Freudian slip that the latter title could all too easily lend itself to in that anxious pre-exam period!

The book is a revision tool specifically focused on the 'long case' component of the MRCPsych Part 2 Clinical, and as such is a welcome addition to the literature given the dearth of texts addressing this aspect of the exam. It reads as an

aide-memoir, made up of lists and bullet points reminiscent of someone else's revision notes. Perhaps this is the case – a little detective work into the author's credentials reveals that he passed the exam in autumn 2004.

It is the sort of book which is short enough to flick through the night before the exam, but (as is the case when using anyone else's notes, even if they are the sort you wish you had made yourself) it would be important to familiarise yourself with the layout of the book and to have read around the topics covered, using a core text.

The book is divided into 9 chapters each addressing a particular aspect of the long case examination. The 'History Taking' section is comprehensive, outlining a recommended format, along with useful screening questions to rule out other psychopathologies. However, the mental state examination is sparsely covered and would not equip the reader with the necessary phenomenological terms. Likewise, detail in the 'Physical examination' chapter is scant; this section is of limited usefulness other than to remind you to do one. 'Diagnosis and differential diagnosis' is essentially a reiteration of the ICD 10 diagnostic criteria for the main conditions you are likely to see; however, it also contains a really useful checklist of differentials.

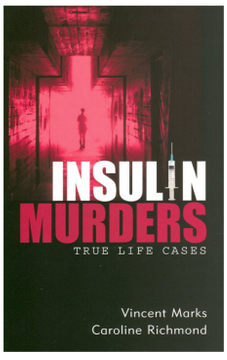
The chapter dealing with the 'Observed interview' goes through a variety of tasks that a candidate may be required to carry out in front of the examiners. It is on the whole good, but with some caveats. For each task, there are examples of verbatim questions that can be used to demonstrate the competency being assessed. However, if the questioning structure were followed too rigidly, the candidate would run the risk of repeating him/herself many times, since some of the suggestions are the same question phrased in several different ways. In addition, for some tasks the recommended questions do not demonstrate a thorough understanding of the relevant symptom or sign.

The Chapters on 'Aetiological formulation', 'Investigations' and 'Management' are excellent. Again they cover the main conditions candidates are likely to be presented with, and provide a useful structure and logical checklist that candidates can work through when presenting their case. The section on 'Prognosis' lists good and poor prognostic indicators for common conditions. Finally, there is a useful chapter which deals with 'Miscellaneous topics' such as prescribing in special populations, which may crop up during the 10 minute viva.

The book's major drawback will be the introduction in spring 2008 of the new MRCPsych assessment programme. The 'Long Case' does not feature in the new exam and the book's target audience will cease to exist. The book will become essentially defunct, although some aspects of it could still be useful in preparation for Workplace Based Assessments, Assessed Clinical Encounters and the OSCE clinical exam.

Ashling O'Hare

Insulin Murders: True Life Cases.
Vincent Marks & Caroline Richmond. Royal Society of Medicine Press. April 2007. 190pp. £12.95. ISBN: 978-1-85315-760-8



I was asked to review this book "as someone who enjoys reading sick serial killer novels" (charming), but I have to admit that it probably *is* the sort of book I would reach for should I be browsing the shelves of the RSM bookshop. The front cover shows a shadowy figure disappearing down a blood-hued corridor (which bears an uncanny resemblance to the 'Caves' in the old RVH) and you get the impression that, with a foreword by Nick Ross, this might be one for the *Crimewatch* fans among you rather than the hardcore endocrinologists. However, despite the sensationalist introduction, the two authors mean serious business: Vincent Marks is, amongst other things, a former Professor of Clinical Biochemistry at the University of Surrey, former Vice-President of the Royal College of Pathologists, and a world authority on insulin and hypoglycaemia; Caroline Richmond is described as a "science writer and medical journalist" (I presume her role is to make Marks' writing a little less 'academic textbook' and a little more 'slasher-thriller').

The book kicks off with the story of Kenneth Barlow, the first documented case of murder by insulin, which occurred in 1957 in England. Barlow was a nurse whose second wife of eleven months died by apparent drowning in the bath. In true CSI style (for the 1950s), dodgy dealings were suspected and two hypodermic injection sites where subsequently identified on each buttock of the deceased. The surrounding tissue was removed and around 84 units of insulin extracted. Marks gives a fascinating summary of some of the state-of-the-art tests becoming available in the 1950s to assay insulin – they seem hopelessly crude by present standards (radioactive glucose and rat diaphragms!) but show a creativeness and originality of method which often appears absent from today's 'black box' analysers. Needless to say, Barlow gets his comeuppance and the notion that insulin is the "perfect murder weapon", as it cannot be detected after death, is shattered.

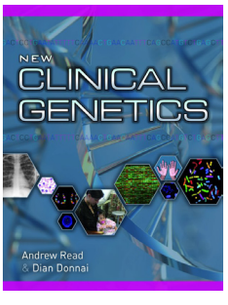
And so they gallop on through the matrimonial killing fields: Herr Breslau does away with one wife, William Archerd does away with at least two, courtesy of insulin. Just as I'm becoming a little paranoid and vowing to be nicer to my husband, they present the case of Claus von Bulow. Some of you may remember this case from the 1980s in the USA. I don't (too young!) but found it absorbing reading. I will not spoil the story for you – a slightly sensationalised version forms the basis of the film *Reversal of Fortune* – but the authors here present a very thorough review of all the scientific evidence behind this unique case (reliably reported by Marks, one of the expert witnesses in the trial). The compelling aspects of this trial from today's point of view are the expert witnesses (leading initially to wrongful conviction?) and the media circus which also helped fuel misunderstanding, conjecture and hearsay: the parallels between this and a certain very recent high-profile case involving an expert witness are striking.

The book details many more cases, including that of Maria Whiston – the "insulin between the toes" trial. By far the most disturbing, however, is that of the notorious Beverly Allitt. Marks gives a first-hand account of how he became involved in the Allitt case in 1991 and lends a fascinating insight into how the case against her was gradually built. The actual details of the cases and her young victims make for very disturbing reading. The fact that these heinous murders went on in a quiet DGH is quite sobering and also suggests the question: Shouldn't insulin be a controlled drug on the ward? (Astoundingly, it didn't even become a prescription-only medicine until 1998, being added to the POM register only because of widespread abuse by bodybuilders, who believed it helped build muscle bulk). It is hardly surprising that, with few exceptions, the killers in this book were all from a medical or nursing background and therefore equipped with the easy means to acquire their chosen 'poison' and to inject it in a lethal dose.

Which brings me to my final point. I read this book on the plane coming home from a conference in Manchester and was aware of some odd glances from my fellow passengers (particularly as I took notes and underlined parts furiously). I half expected the PSNI to be waiting for me in Belfast! So, a word of caution here: by all means buy this book; but don't display it too prominently on your office bookcase – your colleagues might just start to wonder.

Joanne Murdock

New Clinical Genetics. Andrew Read & Dian Donnai. Scion Publishing Ltd. Jan 2007. 450pp. £27.99. ISBN: 978-1-90484-231-6



New Clinical Genetics, published this year, is a comprehensive textbook. It is written by a clinician, Professor Dian Donnai, and a scientist, Professor Andrew Read, both from the University of Manchester. It is aimed primarily at medical students and, although only a few of these will go on to specialise in genetics, they all need to understand genetic principles, since genetic knowledge will underpin so much of medical practice in the future. This book will also be useful to genetic counsellors, scientists or clinicians, particularly those training in genetics or paediatrics.

The contents are based around the curriculum of the American Society of Human Genetics and the List of Competencies for undergraduate medical students being developed by the UK NHS Genetics Education Centre. The format is of topic-specific chapters, with learning points listed at the beginning of each. However, the book can also be read through the case studies which span the chapters and follow the experience of individual families to illustrate specific points. This is a novel approach and, as in real-life, the information on families is slowly teased out, covering a combination of topics. The use of such case studies brings genetics to life.

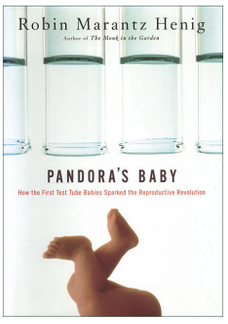
Chapter 1 begins with an introduction to many of these case studies, and covers the taking of family histories and modes of inheritance. The following chapters continue with a thorough run-through of basic genetics with helpful definitions and explanations, analysing, for example, why we have chromosomes. Chapters 4 and 5 give a comprehensive guide to the different techniques used in genetic testing. The case studies make these techniques more relevant, and neatly identify and illustrate which genetic tests are most appropriate for the various conditions considered. Chapter 6 gives details of how mutations arise and how they cause disease. There are interesting details of how mutations interact - for example, why one "lethal" mutation combined with another "lethal" mutation may lead to a *milder* form of a disease. There are plenty of references to the future of genetics and to the contemporary debates which surround this speciality. Chapter 8 contains an analysis of the ethics and practicalities of the combination drug, BiDil, which has been targeted specifically at African-Americans. In chapter 10 the mathematical models regarding gene frequencies are lucidly explained. Finally, the book concludes with a review of the role of genetics in the future, including managing genetic susceptibility for common diseases and stem cell research.

There is an extensive elucidation of specific syndrome facts throughout the book, with many being singled out into disease boxes for more detailed information. Difficult ethical issues are debated - such as: should those with genetic conditions be allowed to reproduce, and: can we abolish genetic disease? There are numerous interesting snippets relating to the historical context of the subject integrated into the text; these illustrate the huge body of work that has gone into making genetics the speciality it is today, whilst also showing those who were rewarded with Nobel prizes. There are, in addition, many fascinating references to human ancestry, into how we evolved as a species. Each chapter ends with comprehensive references lists, with numerous referrals to excellent websites, including specific OMIM (On-line Mendelian Inheritance in Man) references. In addition, the end of each chapter contains self-assessment questions, to test the reader's understanding of the contents. My main criticism of this book is that there were no answers given for the questions at the back, merely guidance on how to approach the more difficult questions.

This book is written in a readily accessible style. The writing is informative and humorous, with references to evolution, stretching back to our early hominid roots and beyond. Enriching language is used at all times and reflects the authors' love of the subject and genuine interest in this field. There is ample provision of artwork, with good, easy to follow diagrams, and highly informative photographs of, for example, karyotypes and FISH tests. The case studies emphasize the important and complex role of the clinical geneticist, something which many, even those otherwise well informed, may not fully understand. In fact, this stimulating volume may well entice more students into our exciting and expanding speciality. I would whole-heartedly recommend this book.

Deirdre Donnelly

Pandora's Baby - How the first Test Tube Babies sparked the Reproductive Revolution. Robin Marantz Henig. Cold Spring Harbor Laboratory Press. 2006. 326pp. £9.99. ISBN: 978-0-87969-809-6



It is now almost thirty years since the birth of Louise Brown, the first baby to be born as a result of in-vitro fertilization (IVF). IVF was developed to overcome the problem of blocked fallopian tubes. However, with many ensuing modifications it is now used to treat infertility of almost any aetiology, including that of couples whose failure to conceive is unexplained.

Although this is a factual book it contains personal stories of patients, scientists and clinicians involved in the development of IVF. It features a rather eccentric American Gynaecologist, Landrum Shettles, whose early attempts at IVF were obstructed by a senior colleague. On the receiving end of his work was a patient, Doris Del-Zio, who would have done anything to achieve her dream of a child. Unfortunately, her dream did not materialise, and many similarities can be drawn between Del-Zio and our patients today, as the success rates for IVF remain around 25-30% per cycle.

One of the main themes running through the book is the court case brought by Del-Zio against the hospital chairman who ordered the disposal of a test-tube containing her eggs and her husband's sperm which she claimed contained her potential baby. The case, which was won by Doris Del-Zio, attracted much publicity as it coincided with the birth of Louise Brown in the UK in 1978.

It was the work of the UK scientist Bob Edwards, who teamed up with a Gynaecologist Patrick Steptoe, which was responsible for the birth of Louise Brown. Patrick Steptoe, who was a consultant in a district general hospital in Oldham, pioneered laparoscopy, which he used to retrieve mature oocytes. The book describes Bob Edwards' early work at Cambridge, as well as his collaborative work with Howard Jones and his wife at Johns Hopkins University. The Joneses went on to open the first IVF clinic in the USA, although the birth of the first American IVF baby, which was the fifteenth in the world, did not occur until 1981.

There are interesting references in the book to unsubstantiated claims of earlier successes in the field. The politics surrounding funding of IVF research in the USA are also detailed. All in all it is a fascinating book which should also appeal to non-medical readers.

Joanne McManus

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Cover legend: ECG showing lengthened QTc interval – from Kennedy et al. Primary hyperparathyroidism and its management in a woman with hereditary long QT syndrome