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Adult hernia surgery in Wales revisited: impact of the guidelines of The Royal College of Surgeons of England

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This study investigated the impact of the guidelines of The Royal College of Surgeons of England on the practice of hernia surgery in Wales. This was assessed by means of a postal survey to all consultant general surgeons in Wales in 1996–1997. The areas covered were: awareness of the guidelines of The Royal College of Surgeons of England and the impact of such guidelines on their practice, attendance at hernia courses, operative technique, materials used for repair and skin suture, proportion of day case hernias, length of inpatient stay, thromboembolic (TE) prophylaxis and postoperative advice to patients with regard to light work, heavy work and sport.

In all, 79 replies were received (85%). Almost all the surgeons had read the guidelines; this changed the practice of 20% of respondents but did not in 32%. A further 48% did not answer the question.

In contrast with our 1993 survey results, in Wales there is now a uniform surgical management of adult inguinal hernias: the most common operation is the Liechtenstein, with monofilament non-absorbable suture to secure the mesh, followed by the Shouldice repair. The Bassini and inguinal darn operations are becoming much less common and none now uses braided or absorbable sutures for the repair. Skin closure is still rather variable, with only 58% of respondents adhering to the recommended absorbable subcuticular suture.

Postoperative advice is now uniform and in accordance with the guidelines.

A trend towards more TE prophylaxis and more day case hernia surgery is also seen.

Adult inguinal hernia surgery has traditionally been performed using a variety of techniques, the surgeon's preference being the main determining factor in choosing between a multitude of options. A postal survey carried out in early 1992 in Wales showed an extreme variability in techniques and materials used for repairs, with only 20% of surgeons using the Shouldice operation and none routinely using mesh; indeed, 7.4% still used braided silk for posterior wall repair *(1)*. Nearly identical results were obtained from a similar study carried out in England in 1990 *(2)*. Great variability in postoperative advice and low rates for day case hernia surgery (2%) and thromboembolic (TE) prophylaxis (20%) were also highlighted by the Welsh study *(1)*. It was the purpose of this study to ascertain whether the guidelines of The Royal College of Surgeons of England *(3)* had resulted in a change in practice.

Materials and method

A questionnaire was sent to all consultant general surgeons in Wales in 1996–1997 (Fig. 1). Points questioned were:

(a) Whether the surgeon had read the guidelines of The Royal College of Surgeons of England and whether this had changed his/her practice;

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Regarding routine inguinal hernia operations:

1 What technique do you use for the repair?
2 Does this technique differ with the age of the patient, eg if the patient is
  over 40 years old?
  under 40 years old?
3 What materials do you use for the repair?
4 How do you close the skin?
5 How is the patient anaesthetised?
6 Do you routinely use thromboprophylaxis?
7 What form of thromboprophylaxis do you use?
8 What is your average inpatient stay?
9 What % of your routine hernia repairs are done as day cases?
10 How long do you advise your patients to refrain from
  (a) driving
  (b) sedentary work?
  (c) heavy work?
  (d) sport?
11 Have you read the 'Guidelines for Hernia Surgery' published by The Royal College of Surgeons of England?
12 Have you recently attended a hernia surgery course?
13 If so, have either changed your practice of hernia surgery in any way?
  (please state which)
14 Have you attended a laparoscopic hernia surgery course?
15 What % of your hernias do you perform laparoscopically?

MANY THANKS FOR YOUR HELP!

Name:

Figure 1. The questionnaire sent to all general surgeons in Wales.

(b) The materials and technique used for repair and skin closure;
(c) The type of anaesthetic;
(d) TE prophylaxis;
(e) The length of inpatient stay;
(f) The percentage of day case hernia operations;
(g) The postoperative advice given to the patient (assessed in terms of time advised to refrain from driving, light work, heavy work and sport);
(h) If the surgeon had attended a hernia course or a laparoscopic hernia course, and if this had changed his or her practice.

Results

In all, 79 replies were received (85%). Overwhelmingly, the majority of surgeons had read the guidelines ($n=72$, 91%). The above guidelines changed the practice of 15 surgeons (20%) and did not in 26 of them (32%); a further 38 (48%) did not answer the question.

Techniques of repair are shown in Fig. 2. Of the surgeons, 79% used solely one of the low recurrence rate techniques (Shouldice or Lichtenstein). A further 8% used a low recurrence technique in one-half of the patients. Only 13% of responders used a non-recommended method (Bassini or darn); 60% of surgeons were not performing laparoscopic hernia surgery. All (100%) of

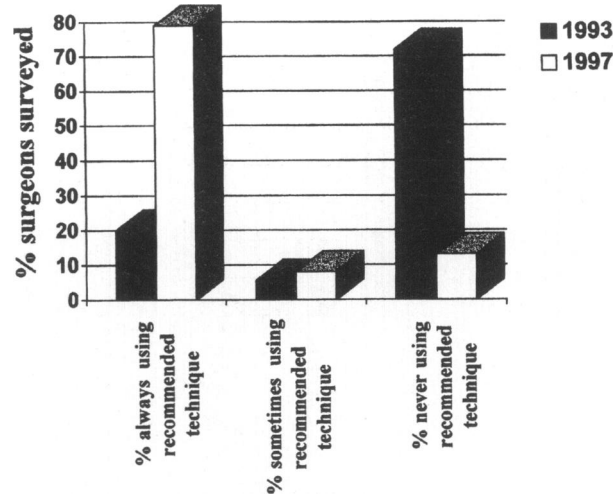

Figure 2. Techniques of hernia repair in respondents' practice in 1993 and 1997.

the respondents were using non-absorbable monofilament sutures for the repair as recommended. Skin closure presented less uniformity, with only 58% adhering to the recommended method of absorbable subcuticular suture (Table 1). Approximately one-half of the surgeons perform hernia surgery only under general anaesthesia (46%), while the other half would choose an appropriate anaesthetic (including local) depending on the patient (47%); two surgeons perform the majority of their hernia repairs under local anaesthesia. TE prophylaxis is routinely used by 48% of respondents. The length of inpatient stay is shown in Fig. 3, 80% of surgeons advocating an inpatient stay of between 1 and 2 days. Eight surgeons (10% of respondents) did most of their hernia repairs as day cases; the overall percentage of responders regularly performing day case hernia surgery was 85%. The majority of surgeons advised their patients to:

1 Refrain from driving for 1–2 weeks (60%) or until comfortable and able to do an emergency stop (24%);
2 Refrain from light work for 2 weeks (41%) (Fig. 4);
3 Refrain from heavy work for 4–6 weeks (60%) (Fig. 5);
4 Refrain from sport for 4–6 weeks (57%).

Twenty-seven (34%) surgeons had attended a laparoscopic hernia course; 17 (21%) had attended a hernia course.

Table I. Techniques of skin closure

Absorbable subcuticular	$n=46$	58%
Subcuticular monofilament polypropylene	$n=13$	16%
Staples	$n=11$	14%
Interrupted nylon	$n=5$	6%
Interrupted braided silk	$n=2$	3%
Not answered	$n=2$	3%

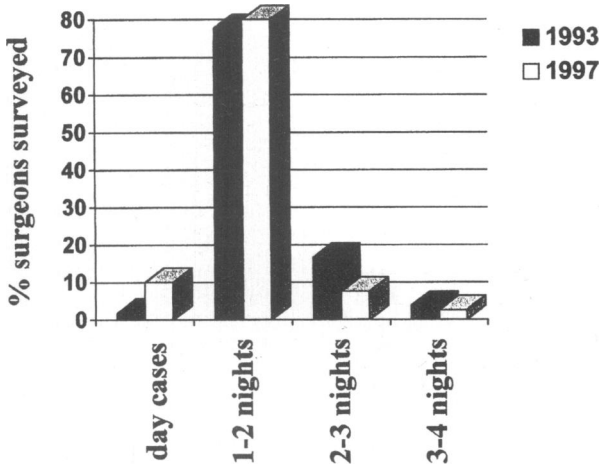

Figure 3. Average length of inpatient stay in the 1993 and 1997 respondents' practice.

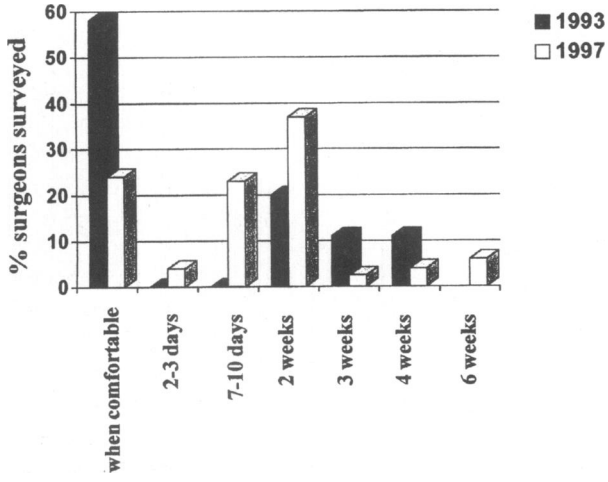

Figure 4. Time the patients are advised to refrain from light work by the 1993 and 1997 respondents.

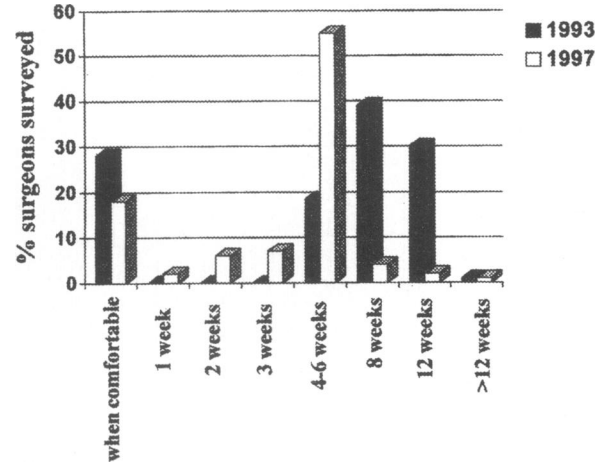

Figure 5. Time the patients are advised to refrain from heavy work by the 1993 and 1997 respondents.

Discussion

Since the publication of the guidelines of The Royal College of Surgeons of England, there appears to have been a dramatic change in operating technique and materials used over a 3–4 year period, with a tendency to uniformity of surgical technique among most surgeons. Mesh repair is now the preferred method, with fewer people performing the Shouldice repair; the Bassini and darn operations are disappearing from most of the respondents' surgical repertoire, and so is the use of braided or absorbable sutures for the repair.

Use of the Shouldice operation is in accordance with the current evidence from the literature *(4,5)* and with the guidelines of The Royal College of Surgeons of England *(3)*. A leading article in the *Lancet* in 1985 accused British surgeons of using suboptimal techniques despite the irrefutable evidence from the Shouldice clinic *(6)*. This operation has been shown to give 10-year recurrence rates of 1%, even in the hands of trainees *(5)*. It is therefore surprising that it has been almost ignored for so many years; perhaps its technical complexity is an explanation. The easier, quicker, Lichtenstein operation has instead gained popularity very quickly. Surgeons were previously wary of implanting foreign material routinely; the safety and low recurrence rates of this procedure are now well known *(7)*. Many factors influence a surgeon's preference towards a particular technique, and it is certainly not possible to find a single event, course or publication that produced such a striking change in practice as the guidelines: almost all the surgeons have read them, and only 32% of them indicated that it did not change their practice. A much smaller percentage of respondents had attended a hernia course.

Laparoscopic hernia surgery in Wales is still in its infancy, with the majority of surgeons still ignoring it until evidence proves its benefits. However, it has increased since 1992. The existence of enthusiasts and die-hard sceptics is noted by our study, with two surgeons performing 90% of their hernia repairs laparoscopically and another one considering it 'a silly operation'.

Our study detected a 2.5fold increase in the adoption of pre- and postoperative administration of low-dose heparin in hernia surgery in high-risk patients since 1992. It is not our intention to join the never-ending debate on low-dose heparin, its irrefutable advantages *(8,9)* and disadvantages *(10–12)*. The trend in Wales is for an increase in the adoption of low-dose heparin in hernia surgery; perhaps it is felt that the benefits are worth a few more haematomas.

There is now widespread acceptance of day case hernia surgery, although with considerable individual variations. Perhaps different selection criteria in the various units explain the fact that the percentage of hernia repairs carried out as day cases varies in our study from zero to over 50% and even 95% in one respondent's practice. The guidelines recommend that one-third of the hernias should be operated on as day cases. Maybe guidelines on patient selection criteria would produce more uniformity.

The above-cited *Lancet* editorial accused British surgeons of keeping their hernia patients at rest too long, in the hope of promoting sound wound healing after inappropriate, clumsy surgery *(6)*. We can now consider such a statement as historical, as the postoperative advice given is uniform and in accordance with the guidelines.

Conclusion

Since 1992, a major change has occurred in the most commonly performed operation in general surgery; inguinal herniorrhaphy is now carried out with a relatively uniform pattern of repair techniques and materials, in accordance with the guidelines of The Royal College of Surgeons of England and the current evidence from the literature. Postoperative advice is also consistent and aimed at a quicker return to work as recommended.

A uniformity of practice begins to delineate in day case hernia surgery and TE prophylaxis, while the role of laparoscopic hernia repair is still controversial.

These results indicate that Royal College guidelines can have a huge impact on the practice of general surgery. In the modern environment of 'evidence-based medicine', such adherence to guidelines is to be commended, and further guidelines regarding other procedures must be encouraged.

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