



Audit

Management of primary and recurrent inguinal hernia by surgeons from the South West of England

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Background: The National Institute of Clinical Excellence (NICE) has advocated open mesh repair for primary hernia but suggested laparoscopic repair may be considered for recurrent hernias.

Aim: To establish current surgical practice by surgeons from the South West of England.

Methods: A postal survey was distributed to 121 consultant surgeons and a response rate of 75% was achieved.

Results: The majority (86%) of the surgeons surveyed performed hernia repairs, and most (95%) of these used open mesh repair as standard for primary inguinal hernia. Only 8% used laparoscopic repair routinely for primary hernias. Few consultants (only 28%) were able to quote formally audited hernia recurrence rates. A total of 90% of respondents still employed open mesh repair routinely for recurrent hernias; however, if mesh had been used for the primary repair, this figure fell to 55%. Some 7% of respondents recommended laparoscopic repair for recurrent hernia, but this increased to 17% if the primary repair was done with mesh. All laparoscopic surgeons in the South West employed the totally extraperitoneal approach (TEP). There was a range of opinion on the technical demands of repair of a recurrent hernia previously mended with mesh; the commonest cause of mesh failure was thought to be a medial direct recurrence (insufficient mesh medially).

Conclusions: Current surgical practice for primary hernias in the South West England reflects NICE guidelines although many surgeons continue to manage recurrent hernias by further open repair. In this survey, there was anecdotal evidence to suggest that hernia recurrence can be managed effectively by open repair.

Key words: Hernia – Laparoscopic surgery – Open mesh repair

Mesh repair of primary inguinal hernia is now a well-established and successful technique employed by most surgeons. Large consecutive series of patients having tension-free mesh repair have been described with very good results.^{1,2} Debate continues as to whether laparoscopic surgery has any advantage for primary groin hernia repair; meta-analysis of randomised series has shown comparable

recurrence rates.^{3,4} Laparoscopic hernia repair has short-term advantages in postoperative pain and convalescence, but is more expensive. In an effort to resolve this clinical and financial dilemma, the National Institute for Clinical Excellence (NICE) published Guidance on the *Use of Laparoscopic Surgery for Inguinal Hernia* in January 2001.⁵ The report advocated the continued practice of open mesh

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repair for primary inguinal hernia; however, it concluded that, for recurrent and bilateral inguinal hernias, laparoscopic surgery 'should be considered'.

The aim of this study was to define the current standard surgical management of primary inguinal hernia amongst a group of consultant surgeons, and also to review their management of a recurrent hernia following previous operative intervention. This current practice was compared to the advice from NICE.

Materials and Methods

A postal questionnaire was distributed to 121 consultant surgeons in the South West of England (members of the Surgical Club of South West England). Surgeons in the Club who were known to specialise in plastic, paediatric and cardiothoracic surgery in the region were excluded.

The questionnaire was divided into two parts. The first part focused on the management of primary inguinal hernia, the numbers performed and the preferred technique. Surgeons were asked specifically if they had knowledge of their own hernia recurrence rates through formal audit.

The second part of the questionnaire concentrated on the management of recurrent inguinal hernia. Surgeons were asked to describe their management of recurrent hernia, and whether it was different if the first repair was done with mesh or sutures. We were particularly interested to know if any surgeons had performed an open repair in patients whose first repair had been done with mesh; in this case, we asked the surgeon to describe the suspected cause for failure of the initial repair and the difficulty of the further repair.

Results

A total of 91 questionnaires were returned from the 121 consultant surgeons surveyed – a response rate of 75%. Of those who responded, 78 consultants (86%) performed groin hernia repair or had this operation performed under their care. The volume of operations was highly variable. Sixteen (21%) surgeons reported performing primary hernia repair less than 20 times per year whilst 14 (18%) performed over 100 hernia repairs a year.

Primary inguinal hernia

A wide variety of operative techniques were used including nylon darn, mesh repair, laparoscopic preperitoneal repair and mesh plug. Some 95% of surgeons stated that they used the open tension-free mesh repair as standard operative technique for primary inguinal hernias, if not exclusively. A total of 83% of respondents, however, only used tension-free mesh repair; the number

using mesh routinely rose to 86% if surgeons who used plug mesh were included. Two surgeons used nylon darn alone (3%), although 4 (5%) stated that they occasionally used this technique for primary hernia repair. Laparoscopic repair for primary hernia repair was performed routinely, or selectively by only 6 surgeons (8%). All used the totally extra-peritoneal (TEP) approach.

Of those surveyed, only 22 consultants (28%) knew their own primary hernia repair recurrence rate through formally audited results. Five-year recurrence rates quoted by this group of surgeons were variable, but all fell in the range of 0–4% for all techniques.

Recurrent inguinal hernia

Nearly all surgeons (97%) who performed primary hernia repair also undertook to repair recurrent inguinal hernias. The survey questioned how these surgeons would manage a recurrent hernia in several suggested scenarios. For recurrence of a non-mesh primary repair, the majority of surgeons (86%) would use tension-free mesh repair as method of choice. This figure rose to 90% if consultants using plug-mesh were included. Only 7% routinely recommended laparoscopic repair in this situation.

For surgical repair of recurrent hernia where an initial mesh repair had failed, the methods used were more varied. The majority of surgeons still preferred to attempt repeat mesh repair (51%), a smaller percentage than if mesh repair had not been performed previously. Again, this figure rose if consultants using mesh or mesh plug were included (55%). A higher number of surgeons recommended laparoscopic repair for recurrence after initial mesh repair (17%) than non-mesh primary repair (7%). Surgeons either performed laparoscopic repair themselves or referred these patients to a laparoscopic surgeon locally.

Recurrence after open mesh hernia repair

The frequency with which surgeons had seen recurrence following previous mesh repair was variable. Forty-six (59%) surgeons had seen at least one patient but most of these (34/46, 74%) had seen fewer than five mesh recurrences during their surgical career.

There were various opinions on how technically difficult it was to repeat an open mesh repair. About half stated that in their experience the operation was straightforward, but the remainder thought dissection of the old mesh was technically demanding. Surgeons who had done open repair following mesh failure cited the following suspected causes for recurrence: the most frequent was medial extension of the hernia; others included the mesh being placed too laterally, a missed indirect sac or mesh separation from the inguinal ligament or pubic tubercle.

Discussion

As elsewhere, the majority of surgeons in the South West of England concurred with NICE guidelines and used open fresh repair for primary inguinal hernia. However, there were significant differences in management of hernia recurrence. Most surgeons surveyed still used open mesh repair for patients with a recurrent hernia, despite NICE recommendations. However, the surgeons surveyed were more likely to consider laparoscopic repair following primary open mesh failure (17% versus 7%).

A review of the literature does not yield any good evidence to support strong recommendations either way. A single randomised controlled trial has been performed that compared open and laparoscopic repair of recurrent hernias.⁶ This study compared giant prosthetic re-inforcement of the visceral sac (GPVRS) with laparoscopic trans-abdominal preperitoneal (TAPP) repair. The authors concluded that, with regard to re-recurrence rates, the open preperitoneal mesh repair remained superior. Most studies acknowledge that the totally extra-peritoneal (TEP) laparoscopic approach is associated with a lower rate of visceral injury.⁷ The Stoppa or GPVRS method of open repair is also rarely used.

The majority of NICE recommendations are based upon cost-effectiveness and health economics. An extensive meta-analysis found little difference in recurrence rates between open and laparoscopic hernia repairs. The cheaper open method was, therefore, recommended for primary repair. It is noteworthy that costs quoted in the report have been widely challenged as inaccurate.⁸ The report also fails to mention other merits of laparoscopic repair such as identification of contralateral occult hernias and earlier return to full activity. Industry submissions suggesting that open repair is technically difficult due to scar tissue formed the basis of NICE guidelines for management of recurrent hernias. It is of note that there was only one surgeon out of 23 members of the NICE appraisal panel.

The experience of this group of surgeons from the South West of England did not support the contention that open recurrent hernia repair is particularly demanding. Anecdotally, there was wide variation in opinion on the degree of technical difficulty of repeat open repair; some found it difficult, others straightforward. For the majority, however, it remained the procedure of choice (55%). The majority of recurrent hernias after open mesh repair

appeared to be due to insufficient medial mesh overlap or fixation, as also suggested by data from the Swedish and Danish hernia registries.⁹

It is understandable that the majority of general surgeons prefer open repair of a recurrent hernia because they have experience with this method. Laparoscopic hernia repair remains a specialist procedure. There exists little evidence to make a formal recommendation that all recurrent hernias should be managed laparoscopically, despite suggestions from NICE. It remains questionable whether repair of a recurrent hernia should pass from general to specialist surgery.

Acknowledgements

The authors would like to thank the members of the Surgical Club of South West England for supporting this project. The results were presented to the club at their November meeting in 2001 in Bath, and the presentation was awarded the Trainees Prize.

References

1. Kark AE, Kurzer M, Waters KJ. Tension free mesh repair: a review of 1098 cases using local anaesthetic in a day unit. *Ann R Coll Surg Engl* 1995; **77**: 299–304.
2. Janu PG, Selliers PG, Mangiante EC. Mesh inguinal herniorrhaphy – a ten year review. *Am Surg* 1997; **63**: 1065–9.
3. EU Hernia Trialists Collaboration. Laparoscopic compared with open methods of groin hernia repair: systematic review of the randomized clinical trials. *Br J Surg* 2000; **87**: 860–7.
4. EU Hernia Trialists Collaboration. Repair of groin hernia with synthetic mesh. Meta-analysis of randomised controlled trials. *Ann Surg* 2002; **235**: 322–32.
5. National Institute for Clinical Excellence. *Guidance on the Use of Laparoscopic Surgery for Inguinal Hernia*. London NICE, 2001.
6. Beets GL, Dirkson CD, Go PMNYH, Geisler FFA, Bacten CGM, Koostra G. Open or laparoscopic preperitoneal mesh repair for recurrent inguinal hernia? A randomised controlled trial. *Surg Endosc* 1999; **13**: 323–7.
7. MRC Laparoscopic Groin Hernia Trial Group. Laparoscopic versus open repair of groin hernia: a randomised comparison. *Lancet* 1999; **354**: 185–90.
8. Motson R. Why does NICE not recommend laparoscopic herniorrhaphy? *BMJ* 2002; **324**:1092–4.
9. Bay-Nielsen M, Nordin P, Nilsson E, Kehlet H from the Danish Hernia Database and the Swedish Hernia Database. Operative findings in recurrent hernia after a Lichtenstein procedure. *Am J Surg* 2001; **182**: 134–6.