



Responses to the statement "Medical school prepared me well for the jobs I have undertaken so far" from graduates of 23 UK medical schools. Error bars denote 95% confidence intervals for the percentages "who strongly agreed or agreed" and who "strongly disagreed or disagreed." For each medical school, the percentage of doctors who stated "neither agree nor disagree" is the difference between 100% and the sum of the two percentages shown

but was limited in basic problems found on the wards"; "Not enough emphasis on real life situations"; "Not enough time shadowing PRHO prior to commencing work." Six also commented that, in their view, the practicalities of the job could be learnt quickly, for example: "Felt inadequately prepared for surgical house jobs—but you can pick it up very quickly."

### Comment

Differences between medical schools were large in how well their graduates felt prepared for their house jobs. The findings raise questions that we cannot answer from

our survey. Are mismatches between experiences at medical school and work important, or are they a short term hindrance and easily overcome? Does the preregistration year require tasks, skills, and activities that medical schools do not expect to teach? We understand from deans of medical schools that, since the time covered by our survey, curriculum changes have placed greater emphasis on practical experience. Systematic, in-depth feedback to medical schools from their graduates is needed. Because of differences between short term and longer term educational needs, and because the education of medical students serves the generic needs of all clinical specialties, this should be done with feedback from experienced doctors as well as junior doctors. Decisions also need to be made, as the General Medical Council and Department of Health recognise, about the distribution of work and training across the time spent in medical school, the preregistration year, and the senior house officer years.<sup>3 4</sup>

Karen Hollick administered the survey, and Janet Justice and Alison Stockford entered the data. We thank all the doctors who participated in the study.

Contributors: TL and MJG designed the survey. JE designed the free text coding scheme. GT and TWL analysed the data. MG wrote the first draft of the paper. All authors contributed to subsequent drafts and are guarantors.

Funding: The UK Medical Careers Research Group is funded by the Department of Health. The Unit of Health-Care Epidemiology is funded by the NHS Executive South East.

Competing interests: None declared.

- 1 Lambert TW, Goldacre MJ, Edwards C, Parkhouse J. Career preferences of doctors who qualified in the United Kingdom in 1993 compared with those of doctors qualifying in 1974, 1977, 1980, and 1983. *BMJ* 1996;313:19-24.
- 2 Goldacre MJ, Davidson JM, Lambert TW. Career choices at the end of the pre-registration year of doctors who qualified in the United Kingdom in 1996. *Med Educ* 1999;33:882-9.
- 3 General Medical Council. *Implementing the new doctor: the education committee's informal visits to UK universities, October 1998 to April 2001*. London: GMC, 2002.
- 4 NHS Executive. *Unfinished business: proposals for reform of the senior house officer grade—a paper for consultation*. London: Department of Health, 2002. (Accepted 23 December 2002)

## Prospective randomised controlled trial of laparoscopic versus open inguinal hernia mesh repair: five year follow up

M Douek, G Smith, A Oshowo, D L Stoker, J M Wellwood

Laparoscopy enables hernial orifices to be observed and tension-free mesh repair to be carried out effectively. In the first randomised controlled trial on hernia repair, which compared laparoscopic transabdominal preperitoneal (TAPP) mesh with open darn repairs, laparoscopic repair was less painful and enabled patients to return to work and normal activity more quickly.<sup>1</sup> Since then, several randomised controlled studies and systematic reviews have largely confirmed these results.<sup>2 3</sup> More recently in the United Kingdom, the National Institute for Clinical Excellence reviewed the available early results and published its guidance on the use of laparoscopic surgery for inguinal hernias.<sup>4</sup>

We present results of a randomised controlled trial of inguinal hernia repair with over five years' follow up, comparing laparoscopic TAPP mesh repair with Lichtenstein open mesh repair. The main long term objective of this study was to compare the complication rates of these procedures.

### Participants, methods, and results

We conducted the trial at Whipps Cross and North Middlesex University Hospitals between May 1995 and December 1996. The trial design has been reported.<sup>5</sup> A total of 403 patients were randomised to one of the

two arms: open repair under local anaesthetic or laparoscopic TAPP repair under general anaesthetic. We investigated the long term complication rate and the incidence of wound numbness, groin pain, testicular pain, testicular atrophy, contralateral hernias, and recurrence.

Patients were recalled after a minimum of five years. One of three independent junior surgeons who were not involved in the original study (MD, GS, AO) assessed and clinically examined the patients. We used a questionnaire that included standard questions that have been previously validated.<sup>5</sup>

Of 400 patients included in the final analysis, 374 were alive five years after the operation. A total of 242 patients (65%) were reviewed (120 open repair; 122 laparoscopic repair). Mean follow up was 5.8 years. The long term complication rate for all reviewed patients was lower in the TAPP group than in the open mesh repair group (table). Permanent paraesthesia and groin pain were significantly reduced in the laparoscopic group. Of 27 patients with paraesthesia, clinically important paraesthesia (affecting the patient moderately or severely) was seen in 12 (44%) in the open mesh repair group and none in the TAPP group. Severe pain (pain analogue scores over 50%) on movement (four patients) or at rest (two patients) was seen only in patients who underwent open repair. No serious laparoscopic complications were seen.

## Comment

Laparoscopic and Lichtenstein open mesh repairs were associated with good long term results and a low incidence of recurrence, but laparoscopic repair caused less groin pain and permanent paraesthesia than Lichtenstein mesh repair. With the introduction of Lichtenstein mesh repair, recurrence rates have fallen dramatically to below 2%, and therefore potential long term complications such as pain, paraesthesia, and testicular atrophy are now more clinically important than before because they are mostly irreversible.

NICE recommended that open mesh should be the preferred surgical procedure for the repair of primary inguinal hernias and that laparoscopic hernia repair using the extraperitoneal approach (TEP) should be considered for repairing recurrent and bilateral hernias. An increase in the low risk of potentially serious intraoperative complications, which we have not seen in our trials, has been reported in association with

Long term complications in patients at least five years after undergoing inguinal hernia repair. Results are numbers (percentages)

Complication	Method of hernia mesh repair		P value (Fisher's exact test)
	TAPP (n=122)	Open (n=120)	
No of patients with complications	13	52	
Numbness	3 (3)	27 (23)	<0.0001
Groin pain	2 (2)	12 (10)	0.006
Testicular pain	4 (3)	6 (5)	0.536
Testicular atrophy	1 (1)	3 (3)	NS
Removal of infected mesh	0	1 (1)	NS
Recurrence	2 (2)	3 (3)	NS
Umbilical hernia	1 (1)	0	NS
Contralateral hernia	11 (9)	11 (9)	NS

TAPP=transabdominal pre-peritoneal repair; NS=not significant.

the TAPP repair.<sup>3</sup> Most of the trials to date have used the TAPP rather than TEP approach. Clearly, before we can draw any firm conclusions on the appropriate laparoscopic technique, long term results of large randomised studies to compare TAPP with TEP are required. Until then, it is best to take the pragmatic approach and use the technique that a centre is most familiar with.

We thank S Senn (Department of Epidemiology, University College London) for statistical advice, and R Sims (North Middlesex University Hospital) and S Mahmood (Whipps Cross University Hospital) for secretarial support.

Contributors: MD set up the five year review, reviewed patients, analysed and interpreted the data, drafted the paper, and obtained funding. GS reviewed patients and assisted with data analysis. AO assisted with setting up the five year review, reviewed patients, and assisted with data analysis and writing of the paper. JMW and DLS were responsible for the study concept and design, contributed all the patients, performed most of the operations, supervised the study, contributed to writing the paper, and will act as guarantors. DLS obtained additional funding for the study.

Funding: Frank Taylor Memorial Trust and NHS Research and Development grants.

Competing interests: None declared.

- 1 Stoker DL, Spiegelhalter DJ, Singh R, Wellwood JM. Laparoscopic versus open inguinal hernia repair: randomised prospective trial. *Lancet* 1994;343:1243-5.
- 2 Collaboration EH. Laparoscopic compared with open methods of groin hernia repair: systematic review of randomized controlled trials. *Br J Surg* 2000;87:860-7.
- 3 Repair of groin hernia with synthetic mesh: meta-analysis of randomized controlled trials. *Ann Surg* 2002;235:322-32.
- 4 National Institute for Clinical Excellence. *Guidance on the use of laparoscopic surgery for inguinal hernia*. London: NICE, 2001.
- 5 Wellwood J, Sculpher MJ, Stoker D, Nicholls GJ, Geddes C, Whitehead A, et al. Randomised controlled trial of laparoscopic versus open mesh repair for inguinal hernia: outcome and cost. *BMJ* 1998;317:103-10. (Accepted 28 February 2003)

Department of Surgery, Whipps Cross University Hospital, London E11 1NR

G Smith  
senior house officer  
J M Wellwood  
consultant surgeon

Department of Surgery, North Middlesex University Hospital, London N18 1QX  
D L Stoker  
consultant surgeon

Correspondence to:  
D L Stoker

## Submitting articles to the *BMJ*

We are now inviting all authors who want to submit a paper to the *BMJ* to do so via the web (<http://submit.bmj.com>).

Benchpress is a website where authors deposit their manuscripts and editors go to read them and record their decisions. Reviewers' details are also held on the system, and when asked to review a paper reviewers will be invited to access the site to see the relevant paper. The system is secure, protected by passwords, so that authors see only their own papers and reviewers see only those they are meant to.

Anyone with an internet connection and a web browser can use the system.

The system provides all our guidance and forms and allows authors to suggest reviewers for their paper. Authors get an immediate acknowledgement that their submission has been received, and they can watch the progress of their manuscript. The record of their submission, including editors' and reviewers' reports, remains on the system for future reference.

The system itself offers extensive help, and the *BMJ*'s editorial office will help authors and reviewers if they get stuck.

Benchpress is accessed via <http://submit.bmj.com> or via a link from [bmj.com](http://bmj.com)