

How long do patients convalesce after inguinal herniorrhaphy? Current principles and practice

Gavin S M Robertson FRCS

Registrar in General Surgery

George Eliot Hospital, Nuneaton, Warwickshire

Ian G Haynes FRCS

Consultant General Surgeon

Paul R Burton MSc MRCP

Lecturer in Epidemiology and Medical Statistics

Department of Community Health, University of Leicester, Leicester

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Over the course of this century it has become apparent that there is no longer any rationale behind the old-established advice to rest for several weeks after hernia repair. It was our impression that such advice continues to be widely accepted, and we therefore sent questionnaires to 100 recently appointed consultant surgeons, 400 of their patients and 200 recently established partners in general practice to assess current practices.

Our findings show that surgeons advised a mean of 4.4 weeks off work and GPs 6.2 weeks off-work, in both cases the period varying with the nature of the patient's occupation. Patients actually took a mean of 7.0 weeks off work.

The wide variation reflects the lack of evidence that an early return to work after hernia repair causes any detrimental effect. We believe that this should be explained to patients, who should be free to return to work as soon as they feel comfortable. Such a policy could substantially decrease the current loss of productivity.

Ever since the turn of the century when Bassini advised a period of bed rest for 6 weeks after hernia repair (1), it has remained customary to advise a period of rest after inguinal herniorrhaphy. Attitudes in Britain have been influenced by wartime experience where hernias were repaired by surgeons with little training and high recurrence rates. A period of 3 weeks bed rest followed by up to 9 weeks convalescence was recommended (2) to try and reduce recurrence rates.

It was elegantly shown 25 years later that a wound sutured with modern non-absorbable sutures is 70% as strong as intact tissue from the immediate postoperative period, while the tissues themselves had only recovered 41% of their strength by 8 weeks (3). This provided physiological support for permitting unrestricted activity immediately after surgery (4), and clinical studies have shown this to have no detrimental effect on hernia recurrence rates (4–7), with a recurrence rate of 1% in 100 000 repairs reported from the Shouldice Clinic after a short hospital stay and early return to work (8). Indeed, the earlier normal activities are resumed the quicker the developing collagen tissue is exposed to the stresses which may determine its final strength (9,10).

Despite this evidence, patients continue to take up to 8 weeks to return to work after hernia repair (11,12), with general practitioners recommending as long as 26 weeks off for a heavy worker (13).

To examine whether the recent research and advances in suture materials have been reflected in a change in practice we asked recently appointed surgeons and general practitioners what advice they currently give patients by means of a postal questionnaire and compared their replies with the results of a questionnaire sent to patients.

Patients and methods

Questionnaires were sent to 100 recently appointed (1988–1989) consultant general surgeons whose details were kindly supplied by the Association of Surgeons in

Correspondence to: Mr G S M Robertson, Clinical Lecturer, Department of Surgery, Clinical Sciences Building, Leicester Royal Infirmary, PO Box 65, Leicester LE2 7LX

Training. They were asked to detail the materials they used for hernia repair and how long they advise patients in sedentary jobs (eg secretaries), light work (eg car drivers) and heavy jobs (eg labourers) to refrain from work afterwards.

They were also asked to estimate the percentage of repairs they performed under local anaesthesia, and whether the type of anaesthetic made any difference to the length of convalescence they advised.

After approval by our local ethical committee each surgeon was requested to forward a questionnaire to 10 of their patients under the age of 65 years who had undergone inguinal hernia repairs more than 3 months previously. This asked the patients whether they were retired, unemployed, employed or self-employed and, if working, how long they had remained off work. It also asked whether their employer had any policy on how long they should remain off work, and how many people they employed (0–20, 20–100, 100+).

The Royal College of General Practitioners kindly agreed to mail a questionnaire to the newest 200 unrestricted principals in general practice. This examined how long they advised patients to refrain from the three grades of work, whether the type of anaesthetic made any difference and if employers in their area had any defined policy.

The results were entered on to three computer spreadsheets for analysis. Statistical associations between the advice given to different work groups of patients by each practitioner were detected using the product moment coefficient (r). It was believed that because individual medical practitioners may have tended to suggest particularly high or low durations of convalescence regardless of the grade of work, it would have been potentially misleading to perform a standard one-way analysis of variance (ANOVA) to examine the effect that type of work had on the advice given. The mean overall suggested duration of convalescence over the three grades of work for each individual practitioner was therefore subtracted from the suggested duration made by that practitioner for each grade of work, a process known as sweeping. After examining the data for approximate normality, the swept data was then subjected to ANOVA, the residual degrees of freedom being appropriately adjusted to take account of the effect of the sweeping. In practice the analysis was set up as a linear model and was carried out in GLIM 3.77 (14). The resultant model was shown to provide an acceptable fit to the observed data. The analysis of trends in suggested duration of convalescence across the three grades of work were also carried out in GLIM having similarly removed the systematic effect in individuals' advice.

Results

A total of 45 surgeons returned their questionnaires (45%). Of these all except two use non-absorbable sutures for at least one layer of their repair, with 30 (67%) using nylon, 12 (27%) prolene and one a combination

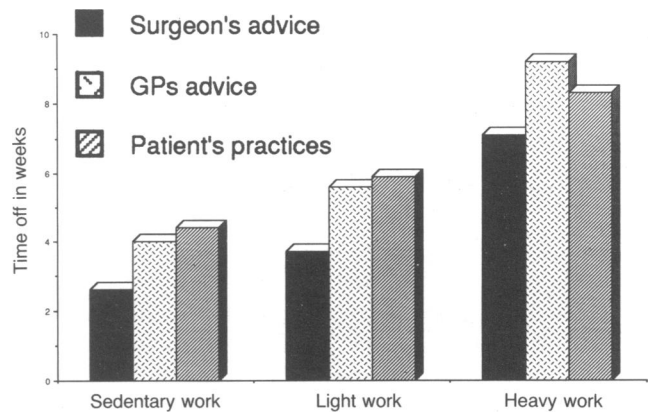


Figure 1. Histogram comparing the length of convalescence advised by surgeons and GPs after hernia repair, compared with the time actually taken, for different types of work.

of prolene for repair of the transversalis fascia and a nylon darn. The remaining two used only PDS® (polydioxanone).

The vast majority of hernia operations were carried out under general anaesthesia, 64% of surgeons performing more than 95% of their repairs under general anaesthesia, and only one using local anaesthesia in over 50% of cases. Only one surgeon believed that the type of anaesthetic affected postoperative activity, pointing out that those having a repair under local anaesthesia could drive sooner.

Analysis of surgeons' advice

The mean time that patients were advised to take off work increased with the degree of effort involved in their occupation (Fig. 1). For sedentary work the mean was 2.6 weeks (standard deviation ± 1.1 , range 1–6 weeks), for light work the mean was 3.7 ± 1.4 weeks with the same range from 1 to 6 weeks and for heavy work the mean increased to 7.1 ± 3.4 weeks with a range from 3 to 22 weeks (the latter being stipulated by one of the surgeons who used no non-absorbable sutures). Forty surgeons completed all the advice columns. There was a strong correlation (r) between the advice given by individual surgeons to those with light and sedentary jobs of 0.669 ($P < 0.001$), but no significant correlation ($P > 0.05$) with the advice given to those with a heavy job ($r = 0.256$ with sedentary work and 0.138 with light work). ANOVA (see methods) showed that the type of work significantly affected the advice given ($F = 75.35$, DF 2 and 78, $P < 0.0001$), with a significant but non-linear increase in the duration of convalescence suggested ($F = 127.8$, DF 1 and 79, $P < 0.001$). Those with heavy jobs were advised to take considerably longer to convalesce.

The mean time advised before driving (noted by 36 surgeons) of $2.4 \text{ weeks} \pm 1.0$ (range 1–5 weeks) was similar to that before sedentary work (using the paired t test, $t = 1.246$, DF 35, $P = 0.22$) but was less (95% confidence limits of 0.97–1.92 weeks less) than the time

advised before return to light work ($t=6.177$, $P=0.0001$).

Analysis of general practitioners' advice

A total of 54 (27%) of GPs replied. Again, the mean suggested time off work increased with the degree of exertion involved in the occupation. The mean for those with a sedentary occupation was 4.0 ± 1.7 weeks (range 1–8 weeks), for light work 5.6 ± 2.1 weeks (range 2–10 weeks) and for heavy work 9.2 ± 2.7 weeks (range 6–14 weeks). There were significant correlations ($P < 0.001$) between the periods suggested by each GP for the rest required from the different types of work. Between sedentary and light jobs $r=0.823$, between sedentary and heavy work $r=0.625$, and between light and heavy $r=0.729$. ANOVA again showed that the type of work significantly affected the advice given ($F=247.9$, DF 2 and 106, $P < 0.0001$), with a significant and non-linear increase in the period of suggested convalescence from light to heavy work ($F=388.4$, DF 1 and 107, $P < 0.0001$).

Six GPs believed that the type of anaesthetic affected the period patients should remain off work, with all six believing it could be reduced after a local anaesthetic. One GP knew of an employer who had a policy stipulating a defined rest period, namely the pottery industry insisting on 3 months off work for those employees with a heavy job.

Practices of patients

Of the 45 surgeons who responded to our survey, five pointed out that owing to the short time they had been in post they did not have sufficient suitable patients to receive our questionnaires. Assuming that the other 40 each sent questionnaires to 10 patients as requested, the 153 patient responses represents a minimum of 38% response rate.

Of these patients, 46 were retired or unemployed, 16 had an occupation they regarded as sedentary and these patients took a mean of 4.4 ± 2.3 weeks off work (range 1–9 weeks). The 35 with a 'light' occupation took a mean of 5.9 ± 3.4 weeks off (range 2–16 weeks) and the 56 with a 'heavy' job took a mean of 8.3 ± 3.6 weeks off (range 1–14 weeks).

Of those doing some form of work, 89 were employed, 16 self-employed and two 'retired'.

Overall, 143 patients (93%) had a general anaesthetic which reflects the practices described by the responding surgeons.

Discussion

Although the study is small, with relatively low response rates, the results clearly show that both surgeons and GPs continue to have fairly definite views on how long patients should remain off work after a hernia repair, and that this period is significantly affected by the nature of

the job. Moreover, those GPs who advise relatively long periods of rest from sedentary work are also those who advise prolonged restraint from light or heavy work. Thus, some practitioners appear generally conservative in their advice while others tend to be more 'radical'.

While this study has not attempted to examine the relationship of the period of time spent off work and postoperative morbidity (in particular the rate of hernia recurrence), the wide variation in practice and previous studies suggest that an early return to full activities has no adverse consequences. The degree of adherence to what has been shown to be outdated dogma at first appears extraordinary; however, there is no doubt that many patients experience a considerable amount of discomfort after inguinal hernia repair, and to suggest that all patients should make an early return to work, although theoretically possible, is unrealistic. In the current employment market the variation in time taken before returning to work may reflect the degree of discomfort being experienced, rather than a desire for unwarranted inactivity. It is noteworthy that the mean time actually taken off work by patients shows less variation in relation to the type of work performed than would be expected from the advice they received. Those in sedentary occupations took rather more and those in heavy occupations rather less (Fig. 1).

We suggest that rather than dictating the time-scale of recovery, patients are allowed to return to work as soon as they find such activity comfortable. This recommendation takes account not only of the type of work (with those in heavier jobs requiring more time) but also variations in individual recovery rates, and agrees with the conclusions of studies looking at convalescence after operations in general (15).

We suspect that many patients would be happy to return to work much sooner than in fact they do if they were made aware that it would have no detrimental effect. Such earlier return to work would result in substantial savings in terms of lost productivity.

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Book review

Atlas of Surgery of the Stomach, Duodenum and Small Bowel edited by James C Thompson. 338 pages. Mosby Year Bood, St Louis. 1992. No price given. ISBN 0 8151 8767 X

This book is part of a new series of operative surgery, and has to be looked upon as competition for the textbook written on operative surgery by Robin Smith. The pattern in which the book is written is clear and concise, with small amounts of text, complemented by extremely good and clear diagrams. The authors have described very nicely both methods of suturing and stapling, and the indications for both which should be of great assistance. The coverage of the book is comprehensive,

with the one exception of gastro-oesophageal reflux, in which I think a Nissen fundoplication is described. I assume alternative operations would be discussed in the chapter on thoracic surgery.

If this book is a good example of other volumes in this series, then this should build up and form a comprehensive, well-written and extremely easily readable series, and will probably create a space for itself in the library of any practising surgeon.

ROBERT C MASON
Senior Lecturer and Consultant Surgeon
Guy's Hospital
London