Medicolegal consequences of adhesions

Harold Ellis

Postoperative intra-abdominal adhesions are an almost invariable consequence of abdominal and pelvic surgery. Most patients are unaware of their presence, but they may result in morbidity such as acute intestinal obstruction, female infertility and dyspareunia. Claims made against surgeons and gynaecologists in the UK are reviewed, and lessons are highlighted.

Complications resulting from postoperative intra-abdominal adhesions are the subject of increasing medicolegal litigation. Figures relating to this have been collected in this article from the Medical Defence Union (MDU) and the Medical Protection Society (MPS), which detail complaints that have reached these societies in claims made against GPs in both the public and private sectors and against surgeons and gynaecologists in private practice in recent years. This article also contains figures from the National Health Service Litigation Authority (NHSLA) concerning claims made since April 1995.

Adhesions are the almost invariable consequence of abdominal surgery involving the peritoneal cavity. In the author's review of 210 laparotomies on patients who had undergone one or more previous laparotomies, 94% were found to have adhesions (Menzies and Ellis, 1990). The only exceptions were patients who had undergone a lower segment caesarean section or some minimally traumatic procedure, such as an elective appendicectomy. Today abdominal surgery is extremely common in the western world, with perhaps one third of all adults having had one or more laparotomies by the time of death. Most of these patients will have intra-abdominal adhesions. The great majority of these are entirely symptomless, but even a low morbidity in such a large group of the population will result in a considerable workload.

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FREQUENCY OF INTESTINAL OBSTRUCTION

By far the most important morbidity from adhesions is the development of small bowel obstruction; indeed, postoperative adhesions are responsible for between 60 and 70% of all cases of small bowel obstruction in the western world (Ellis, 1998). In the author's study of 2708 laparotomies carried out in one surgical unit, 1% of the patients required readmission for surgery for small bowel adhesive obstruction within the first 12 months following their surgery, half of these within the first 4 weeks (Menzies and Ellis, 1990).

There is also a long-term risk of this complication. In the same paper it is noted that, of 80 patients admitted to the unit with adhesive obstruction, 17 (21%) had had their initial laparotomy 10 years or more previously. The author has had one patient admitted with adhesive obstruction 38 years after his initial surgery for intussusception at the age of 1 year.

A study of the entire population of Scotland, some 5 million people, has been reported based on figures obtained from the computer of the Scottish NHS medical record linkage database in Edinburgh (Ellis et al, 1999). Patients were identified who had undergone open abdominal or pelvic surgery in 1986 and who had no record of abdominal surgery in the previous 5 years. These patients were followed up over the next 10 years. Of the 29 790 patients in the study, 5.7% had been readmitted with complications directly related to adhesions, of which 3.8% required surgery. Of these readmissions, 22.1% occurred within the first year after the initial surgery, but the remainder occurred steadily over the remaining 9 years of the 10-year study.

MEDICOLEGAL CONSEQUENCES

The following are the topics that have led in recent years to complaints and claims against medical practitioners:

- Bowel or other visceral damage at adhesiolysis, either at laparotomy or laparoscopy
- Failure or delay in diagnosis of adhesive small bowel obstruction, chronic abdominal or pelvic pain consequent upon adhesions
- Failure to warn the patient of the risks of adhesive complications
- Failure to take precautions against the formation of adhesions.

Between 1989 and 1999, the MPS dealt with 13 claims in which adhesions had been implicated. Nine of these involved GPs and in all of them the complaint was of failed or delayed diagnosis of intestinal obstruction. Three claims were made against gynaecologists – one for failure to diagnose and two for bowel damage at adhesiolysis (one at open and one at laparoscopic surgery). The final case involved a surgeon, again this was a case of bowel damage at operative division of adhesions.

The MDU has a membership of some 22 000 GPs and covers 500 gynaecologists and 720 general/vascular surgeons for their private practice. Over the 6 years from 1994 to 1999 the MDU received 77 claims pertaining to intra-abdominal adhesions. These were:

- Failure to diagnose or delay in diagnosis – 21 claims
- Visceral injury at laparoscopic surgery – 12 claims
- Visceral injury at laparotomy – 10 claims
- Pain, dyspareunia, infertility – 7 claims
- Failure to use Sepracoat (Genzyme Therapeutics, Boston) – 1 claims
- Failure to warn of risk – 1 claims
- Various claims, which included death during adhesiolysis and miscarriage following adhesiolysis – 25 claims

Over an 11-year period, 14 cases were settled out of court by the MDU, the range being £7960–£124 261, the average being £50 765. These 14 cases were:

- Perforations after laparoscopic division of adhesions – 5 cases
- Adhesions after laparoscopic surgery – 2 cases
- Infertility as a result of adhesions – 1 cases
- Delayed diagnosis of intestinal obstruction – 6 cases.

Dr Katharine Wright, of the NHSLA, has provided anonymous details of all cases involving intra-abdominal adhesions on its database. This comprises all cases handled or in the process of being handled in the NHS where the alleged incident took place after April 1995. A total of 57 cases are recorded, with total claims (damages plus legal costs) amounting to £3 790 577. Of these claims, 36 have now been settled, with a total settlement of some £2 320 000, ranging from nil in six cases to £401 850.

Thirty cases involved gynaecologists, and 27 involved general or urological surgeons. Of these cases, six had adhesions as a relatively non-important part of the claim.

A total of 25 had visceral damage at adhesiolysis; of these 11 were at laparoscopic surgery (with three deaths), and 14 were at open surgery (with two deaths). The damaged structures were: small or large bowel (14 cases), bladder (two cases), and one case each of bile duct, ureter, pelvic nerves and iliac artery. The remaining case mentions only 'haemorrhage'.

Of the remaining 25 cases, 17 claims were of pain ascribed to adhesions following surgery, four claims involved late diagnosis of adhesive bowel obstruction (with two deaths), three claims were for increased risk of adhesions as a result of late diagnosis of a ruptured appendix and one claim was for failure to warn of the risk of adhesion formation.

The final case was of a patient who had a laparoscopic sterilization, which failed. At subsequent caesarean section, one of the clips was found attached to a pelvic adhesion.

WHAT ARE THE IMPORTANT LESSONS?

Surgeons, gynaecologists and GPs must be alert to the possibility that obstructive symptoms, whether early or late, after an open or laparoscopic abdominal or pelvic operation, are likely to be caused by adhesions. Delay in diagnosis can result in gangrene and then perforation of the strangulated loop of small intestine, with a substantial morbidity and indeed mortality.

The risk of visceral injury, especially perforation of an adherent loop of small or large bowel, when adhesions are divided at reoperation has been quantified in an important retrospective study. Surgeons at University Hospital, Nijmegen (Van der Krabben et al, 2000), showed that inadvertent enterotomy occurred in a surprising 52 (19%) of 270 patients undergoing relaparotomy with seven deaths (13%), compared with 16 (7%) in 218 patients undergoing first-time abdominal surgery. Independent risk factors for bowel injury were obesity, age and three or more previous laparotomies. Similar studies for laparoscopic surgery are badly needed, as the risks are very likely to be similar. Clearly patients undergoing reinterventional abdominal surgery need to be warned of this danger, and surgeons need to be alert to it, ready for immediate

repair of any injury. For damage sustained at laparoscopic surgery, this will mean conversion to open operation.

The question of chronic abdominal or pelvic pain following surgery being attributed to adhesions is a difficult one. Most general surgeons in the UK doubt the organic basis of this syndrome, which is seen particularly after gynaecological surgery. A prospective randomized trial from Holland (Swank et al, 2003), for example, found that the same percentage of patients reported relief of their chronic abdominal pain following laparoscopic adhesiolysis as patients undergoing laparoscopic examination alone. Clearly, in any surgeon's experience, the vast majority of patients who have had a laparotomy remain symptom free, even though their abdomens contain adhesions. However, the judiciary are more likely to side with the patient, usually a woman, who says that her life has been made a misery by the adhesions which have followed her abdominal surgery. It is easier to understand how a tethered ovary in the pelvis might result in dyspareunia.

KEY POINTS

- Adhesions are almost invariable after abdominal surgery.
- The majority of these cause no symptoms, but a proportion of patients will develop complications.
- The most important of these is small bowel obstruction.
- Other complications include visceral damage at subsequent abdominal surgery, infertility and symptoms of chronic abdominal and pelvic pain.
- GPs, surgeons and gynaecologists need to be familiar with this problem since increasing numbers of medicolegal claims are being made in this field.

CONCLUSIONS

Although adhesion formation is all but invariable after laparotomy, surgeons should take all reasonable precautions to limit their extent and, in particular, to try and prevent adhesions to the small intestine with consequent risk of small bowel adhesive obstruction. Peritoneal defects and the pelvic floor should be left open, since they rapidly reperitonealise; attempts to drag these tissues together does harm. Anastomoses should be covered by omentum, which should also be pulled down behind the laparotomy incision, thus keeping these away from adjacent bowel loops. There is an need for the development of effective and safe antiadhesion agents, especially after the surgeon has lysed adhesions, to prevent their reformation, and a number of products are under active investigation. **HM**

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Conflict of interest: Professor Ellis is coeditor of Adhesions News and Views.

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