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Uncommon complications of laparoscopic sterilisation

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We present three unusual complications of laparoscopic sterilisation with clinical presentation, pathology and management. We discuss the possible aetiological factors, pathogenesis and clinical importance in relation to each case.

Laparoscopy is a well-established technique used extensively for diagnostic and minor operative work, particularly in the field of gynaecology. Many thousands of laparoscopies are performed in the UK each year and the complication rate is low, the most frequent serious complication being perforation of either large or small bowel. We have recently encountered several unusual complications and we discuss the presentation, management and pathology of these cases.

Case histories

Case 1. Appendicitis following laparoscopy

A 35-year-old woman was admitted as an emergency with 12 h history of constant severe right iliac fossa pain and nausea. Two years before presentation she had undergone laparoscopic sterilisation with application of two Filshie clips to each fallopian tube. She was pyrexial, with tenderness in the right iliac fossa; pelvic examination was normal. At operation the apppendix was removed and the patient made an uneventful recovery.

Histology showed acute transmural inflammation distal to a Filshie clip which was present within the appendiceal lumen. Subsequent radiological studies have shown that only two remaining clips can be identified in the pelvis, one in the region of each fallopian tube. The fate of the fourth clip is unknown.

Case 2. Intestinal obstruction following laparoscopy

A 30-year-old woman presented with a 12 h history of central colicky abdominal pain and vomiting. Three days before presentation she had undergone apparently uncomplicated laparoscopic sterilisation. She had mild abdominal distension with active bowel sounds; the clinical impression of small intestinal obstruction was confirmed by a plain abdominal X-ray. At laparotomy an obstructed loop of distal ileum was found prolapsed through a defect in the right broad ligament. The broad ligament was divided freeing the bowel and the patient subsequently made an uneventful recovery.

Case 3. Cutaneous endometriosis following laparoscopy

A 37-year-old woman presented with a 3 month history of a tender swelling below the umbilicus which varied in size and was intermittently painful, particularly during

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menstruation. One year before presentation she had undergone laparoscopic sterilisation during her menstrual period.

The lesion was initially considered to be an irreducible paraumbilical hernia but at operation a solid nodule with a multicystic haemorrhagic cut surface was identified and excised in several fragments.

Histology showed typical features of endometriosis with islands of endometrial glands and stroma embedded in a fibrous scar. She made an uneventful recovery and subsequent investigation failed to reveal evidence of endometriosis at other sites.

Discussion

Over 50 000 laparoscopies are performed by gynaecologists each year. The procedure has a very low mortality rate (8 per 100 000) and a low complication rate (29.6 per 100 000 for diagnostic procedures and 40.6 per 100 000 for sterilisation) *(1)*. Complications are either immediate, eg haemorrhage, burns, trauma to organs, embolism, or late, eg infection.

Our three cases demonstrate unusual late complications of laparoscopy. Two cases presented as abdominal emergencies, one 3 days and the other 24 months after the primary procedure; the third case caused diagnostic difficulty due to the unusual clinical context of the condition.

Migration of a plastic sterilisation clip from the fallopian tube into the peritoneal cavity is well recognised and usually harmless *(2)*. In the first case the clip came to rest in the appendiceal lumen and was associated with acute inflammation, presumably related to obstruction. The exact method of migration cannot be determined but two hypotheses are suggested; either the clip eroded through the small bowel wall and was carried to the appendix where it impacted, or it eroded through the appendiceal wall. The latter explanation seems less likely in the absence of significant mural fibrosis.

In the next case it appears that a fenestration was made in the right broad ligament during laparoscopic sterilisation. This could have been caused either by the clip and its applicator or by the manipulating probe. Small bowel obstruction occurred later following herniation of the small bowel through the torn area. Obstruction occurring by this mechanism as a direct consequence of laparoscopy is very rare and has not to our knowledge been previously reported.

A carefully elicited clinical history was highly suspicious of endometriosis in the last case. In this condition ectopic endometrial tissue most commonly affects pelvic organs and peritoneum, but is well recognised in abdominal wall, surgical scars and the physiological scar of the umbilicus as well as other more distant sites.

Endometriosis in the umbilical skin was first described by Villar in 1886 and since then 110 cases have been reported accounting for about 1% of published cases of ectopic endometrial tissue. Twenty-eight cases of umbilical endometriosis were reviewed by Steck and Helwig *(3)*; 21 occurred in the physiological scar and the remaining seven cases were related to local surgery.

The pathogenesis of endometriosis remains in dispute and several theories have been proposed. These include spillage of menstrual endometrium via the fallopian tube with subsequent implantation; heterogeneous or lymphatic spread of viable endometrial fragments; metaplasia of pluripotent coelomic epithelium; and finally direct implantation of endometrial tissue during labour or hysterotomy. This case tends to support the theory of endometrial spillage, but it seems likely that endometriosis has a multifactorial aetiology and individual cases may occur by any of the other cited mechanisms.

We conclude that a history of laparoscopy should be sought in all female patients presenting with abdominal pain.

Laparoscopy should be avoided during the menstrual period in order to minimise the possibility of implantation endometriosis.

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