CASE REPORT

Complex inflammatory abdominal mass: a late complication of tubal clip sterilisation?

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Case report

A 36-year-old, previously healthy, parous woman was admitted as a gynaecological emergency with an 8-day history of dull and constant pain in the left lower abdomen. The onset was insidious. The pain was associated with constipation, radiated to the small of the back and was aggravated by movement. The woman complained of loss of appetite and there was no significant relieving factor.

She had had a normal menstrual period 3 weeks before admission. Six years prior to this episode she had undergone a second-trimester, prostaglandin-induced termination of pregnancy. Expulsion of the products of conception was incomplete. Evacuation of the uterus and immediate laparoscopic tubal sterilisation using one clip on each tube were carried out. Two years later she attended the outpatient department with complaints of pelvic pain and deep dyspareunia. On physical examination at that time there was tenderness in the suprapubic region and the anterior vaginal fornix. The clinicians arranged a diagnostic laparoscopy but she did not attend and was discharged from follow-up.

On examination at the time of her index admission the patient was in moderate discomfort. Her temperature was 37.6°C. Her lower abdomen was markedly tender. She required opioid analgesia to allow further examination. There was guarding in the lower abdomen but no rebound tenderness. On palpation a firm, very tender midline mass, possibly arising from the pelvis, was felt. This extended up to the umbilicus and had restricted mobility. Bimanual examination was extremely uncomfortable and there was cervical excitation tenderness. The uterus felt enlarged but the exact size was difficult to define because of tenderness.

The patient's haemoglobin level was 10.5 g/dl. Neutrophils and monocytes were elevated and lymphocytes were decreased on differential white cell count of blood. A urine specimen contained a trace of protein and a urine pregnancy test was negative. There were no significant pathogens in a high vaginal swab and an endocervical swab was negative for chlamydia. An abdominal ultrasound scan revealed a 6 × 10 cm thick-walled, septated, cystic mass extending from above the fundus of the uterus along the anterior abdominal wall.

In view of the acute symptoms and the abdominal mass, an urgent exploratory laparotomy was arranged. Entry into the peritoneal cavity was difficult. Because the mass was densely adherent to the parietal peritoneum and the urinary bladder, the rectus muscles were difficult to mobilise from the midline. To minimise risk of inadvertent entry, the

urinary bladder was filled with methylene blue solution. Needle aspiration of stained fluid revealed that the urinary bladder was adherent up to midway between the symphysis pubis and the umbilicus. Above this level the surgeon could enter the peritoneal cavity. When the rectus muscles were retracted laterally the mass ruptured, releasing pus. A Filshie clip was found within a pus-filled cavity of about 8 cm diameter with thick walls. The mass was also adherent to the bladder dome and the omentum. On inspection of the pelvic organs, the mid-portion of the left Fallopian tube was missing, and there were omental adhesions to the remaining parts of that tube. The uterus and ovaries were normal in size and the Filshie clip on the right tube was seen. There was no other abnormality in the pelvis or the upper abdomen. When the surgeon attempted to resect the mass, the bladder was accidentally punctured. The surgeon carried out a partial resection of the mass followed by bladder repair and a left salpingo-oophorectomy. After the procedure the bladder was catheterised and left on free drainage for 10 days.

The woman made an uneventful recovery from the operation and asked to be discharged on the tenth postoperative day. On review 6 weeks after the operation she complained of episodes of urinary urgency but was otherwise well.

On histological examination the wall of the mass was described as heavily inflamed fibro-adipose connective tissue consistent with origin from an abscess cavity. In the specimen of the salpingo-oophorectomy, a paratubal cyst and mild chronic inflammation were demonstrated. Light growth of *Staphylococcus aureus* was found in pus from the abscess cavity.

Discussion

A Royal College of Obstetricians and Gynaecologists (RCOG) evidence-based clinical guideline states that mechanical occlusion of the tubes by either Filshie clips or rings should be the method of choice for laparoscopic tubal occlusion (Grade A recommendation).¹ Inflammatory complications following tubal occlusions are rare.²⁻⁵ Although pelvic peritonitis, salpingitis and tubo-ovarian abscess are rare following tubal ligation, they should be suspected in any patient presenting with lower abdominal pain.⁶

We report a case where a Filshie clip applied on the left Fallopian tube had migrated from the pelvis and resulted in a complex inflammatory mass in the lower abdomen involving the bowel, the bladder and the anterior abdominal wall. Although the presentation in this case was acute, the history suggests that pelvic pathology may have existed for 2 years or more, probably an aftermath of a second-trimester termination of pregnancy. The patient presented 2 years after the mid-trimester medical termination, evacuation and laparoscopic Filshie clip sterilisation with symptoms of pelvic pain and dyspareunia. Since she was sterilised and laparoscopic findings at sterilisation had been normal, her clinicians had not considered chronic pelvic inflammation as a differential diagnosis. Systematic investigation in the form of a full blood count, erythrocyte sedimentation rate and ultrasound scan of the pelvis could have guided clinicians to the presence of deep-seated pelvic sepsis. The woman had

J Fam Plann Reprod Health Care 2006; **32**(3): 186-187
(Accepted 26 January 2006)

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been offered a diagnostic laparoscopy but defaulted and was unfortunately discharged at that stage. An active follow-up policy involving the patient's general practitioner could have prevented the later development of the multi-organ complex mass.

Cases of post-tubal occlusion salpingitis with involvement of the urogenital tract or the bowel have been described in the literature.⁷⁻⁹ Migration of a clip can be associated with subacute inflammation. In the reported cases including this one, complications did not become apparent within 2 years of the sterilisation procedure. Tubal occlusion with clips does not prevent salpingitis.¹⁰ In the present case, at the time of the laparoscopic clip sterilisation both tubes and ovaries appeared normal. It is debatable whether the second-trimester termination of pregnancy and evacuation of the uterus carried out 6 years earlier had been complicated by bacterial tubal colonisation leading to chronic salpingitis (the woman had received a course of metronidazole and cephalexin after her first operation) or if she had acquired a fresh infection. Biologically inert implants can become colonised with staphylococci and independently cause a foreign body reaction. We were unable to find an identical case to the present one from a MEDLINE search (to December 2005). However, in a related case⁴ an inflammatory mass was diagnosed 3 years following laparoscopic sterilisation using Filshie clips undertaken 6 weeks postpartum. Pus was drained laparoscopically from an abscess involving a Fallopian tube, the bladder and anterior wall of the uterus. Abscess formation recurred within 9 months and was managed by incision and drainage from the anterior vaginal fornix when one clip was retrieved.

Legal abortion procedures and female sterilisation are among the most commonly undertaken surgical procedures in the UK. Laparoscopic tubal occlusion immediately following termination of pregnancy is sometimes considered in clinical practice when a woman with an unplanned pregnancy requests a sterilisation. There are no published data regarding its frequency but it is a not uncommon situation that occurs between an outpatient appointment and admission (Saha and Clausen, personal observation). In an audit of contraception following induced abortion in a district general hospital, 7/16 parous women aged ≥ 25 years requested immediate sterilisation following surgical termination of pregnancy (sample size $n = 84$; Saha and Clausen, unpublished data, 1999). Although sterilisation procedures undertaken in the mid-

trimester are considered to have a low morbidity,¹¹ there are no published follow-up data. In a more recent study, an association with higher rates of failure as well as regret was found.¹² (NB. Filshie clips were not used in that population.)

The suspected presence of genital tract infection should be taken into account regarding the timing of the sterilisation procedure. The present case report highlights the need for awareness of the possibility of post-tubal occlusion salpingitis, which may manifest long after the procedure has been carried out. The applied clip can migrate with the nidus of infection and produce a complex inflammatory mass involving various vital structures. Such lesions may present years after the sterilisation procedure.

Statements on funding and competing interests

Funding. None identified.

Competing interests. None identified.

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Book Review

Oxford Handbook of Genitourinary Medicine, HIV and AIDS. R Pattman, M Snow, P Handy, *et al.* (eds). New York, NY: Oxford University Press, 2005. ISBN: 0-19-852077-8. Price: £24.95. Pages: 551 (paperback)

The *Oxford Handbook of Genitourinary Medicine, HIV and AIDS* is the latest edition of the widely used Oxford Textbook Series. These provide inexpensive and portable reference guides for the management of conditions in a specific field. I reviewed the book from the perspective of both the experienced reader and those new to the speciality.

The handbook is divided into two main sections, those of genitourinary medicine (GUM) and HIV/AIDS. The format is pocketbook-sized, with a clear layout and space for additional note

taking. Also provided is a short picture atlas of commonly seen conditions in GUM and HIV.

The text is well written and presented, with numerous flow charts and tables for the practical management of common conditions. The full range of genitourinary sexual health is covered, ranging from clinical history taking and examination to genital dermatoses and psychosexual medicine. These were dealt with both comprehensively and sensitively. I particularly found useful the 'frequently asked questions' in each chapter, handled from a patient perspective and very relevant to new entrants into the speciality.

Topical areas within GUM were well addressed, including the use of chaperones, sexual health and care of under-16s, and patient confidentiality. Up-to-date topics include nucleic acid testing for chlamydia and gonorrhoea, as well as the management of lymphogranuloma venereum.

HIV medicine is a rapidly expanding and highly complex field, which was again well discussed. In relation to sexual health, there are specific chapters on HIV infection in women, contraceptive needs in HIV-positive women, and HIV in pregnancy. HIV management was covered in a system-wide fashion, in addition to important areas including pre- and post-test discussion, positive health care workers, and disclosure of status.

In summary, I found the handbook to be comprehensive, current and a useful reference source for both the DFFP/STIF and DipGUM. In addition, it is evidence-based and well resourced. Any health care professional working in sexual health or related specialities will find this an excellent guide.

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