

Case Report

Migration of Filshie clips – report of two cases and review of the literature

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CASE 1 – MIGRATION OF A FILSHIE CLIP TO THE BLADDER

A 46 year old woman presented with a four month history of vague suprapubic discomfort. This became worse prior to her menstrual period and eased following menstruation. Her periods were regular with a 4/28 day cycle. She had no intermenstrual or post coital bleeding and no dyspareunia. She also complained of irritative bladder symptoms consisting of frequency, nocturia and urgency. There was no dysuria or haematuria. There were no gastrointestinal symptoms. In her past medical history she had had an ovarian cystectomy and had undergone a laparoscopic sterilisation in 1994 using Filshie clips. During this procedure there was good vision of the pelvic organs which were normal and the clips were applied without difficulty to each fallopian tube.

On examination there was mild suprapubic tenderness but nil else of note. Vaginal and bimanual examination revealed marked bladder tenderness, but otherwise was normal. Transvaginal ultrasound scan was also normal. Urine culture and routine bloods including inflammatory markers were unremarkable. At cystoscopy a 2cm round nodule on the dome of the bladder covered with normal mucosa was identified, the remainder of the bladder being normal. The nodule was resected and submitted for histological examination. This demonstrated normal urothelium with early changes of cystitis cystica with mild inflammation of the submucosa with a scattered lymphoid aggregate. There were no granulomata or amyloid deposition and no dysplasia or malignancy. Overall appearances were of nonspecific active chronic inflammation. At review six weeks later she continued to complain of irritative bladder symptoms. Abdominal and

bimanual examination revealed bladder tenderness, but no mass was palpable. On the following day she passed a Filshie clip per urethra. Following this her symptoms slowly improved and follow up cystoscopy three months later showed a small scar on the dome of the bladder with a tiny speck of calcification, but with otherwise normal mucosa.

CASE 2 – MIGRATION OF A FILSHIE CLIP TO THE CAECUM MIMICKING APPENDICITIS

A 45 year old woman presented with a two day history of right iliac fossa pain. This started as a sharp constant pain with no radiation, associated with nausea but no vomiting. There were no precipitating factors and she had no lower gastrointestinal, urinary or gynaecological symptoms. Her past history included a ventrosuspension in 1991, excision of benign breast lump in 1992 and laparoscopic sterilisation using Filshie clips in 1994 when omental adhesions in the right pelvis were divided with scissors. Both tubes were visualised and clips applied without difficulty.

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On examination she was afebrile with a soft abdomen but had focal right iliac fossa tenderness with guarding. There were no palpable masses. Rectal examination revealed tenderness on the right side. Vaginal and bimanual examination were unremarkable and transvaginal ultrasound was normal. Urinalysis was unremarkable and a pregnancy test was negative. Routine blood results including white cell count and inflammatory markers were normal. She was treated expectantly, however as her pain failed to settle she had a laparotomy, where it was noted that a Filshie clip had become detached from the right fallopian tube and was eroding into the caecum causing surrounding induration. The clip was removed and a routine appendectomy performed. The patient made an uncomplicated recovery and was discharged on the second post-operative day. Histology demonstrated that she had a normal appendix and a hysterosalpingogram performed six weeks later confirmed that the right Fallopian tube remained occluded (*Figure 1*).

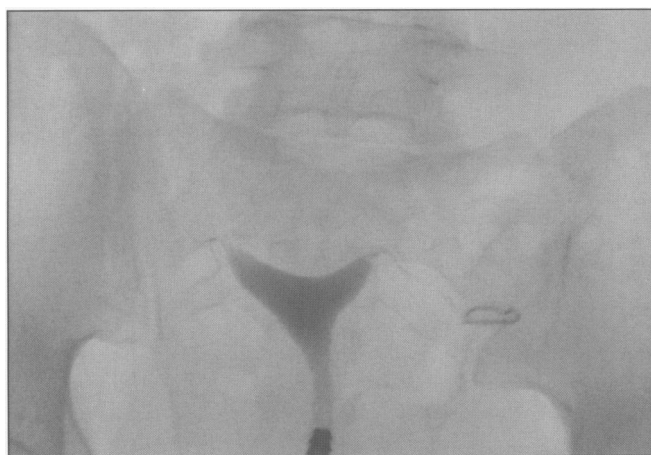


Fig 1. Hysterosalpingogram showing a closed Filshie clip on the left with an absent clip on the right. The right tube remains occluded.

DISCUSSION

Tubal occlusion is the most common method of contraception accounting for over one third of contraceptive use worldwide.¹ In 2002, 21% of women aged 45–49 in Great Britain used female sterilisation as their chosen method of contraception.² There were an estimated 47,268 tubal occlusions performed in England in 1999.³

The use of Filshie clips for laparoscopic tubal occlusion has become more popular since the 1980s and is the most widely used method in the United

Kingdom being used by 82% of gynaecologists.⁴ The Royal College of Obstetricians and Gynaecologists have recommended mechanical occlusion of the fallopian tubes by Filshie clips (or rings) as the method of choice for laparoscopic tubal occlusion as they are safe and technically straightforward with a failure rate of 2 - 3 per 1000 women at ten years.⁵ They also destroy a shorter length of the tube and therefore potential reversal is more likely to be successful.⁵

Filshie clips are made from titanium with a silicone rubber lining between the jaws.⁶ It achieves sterilisation by being placed across the whole width of the isthmus portion of the tube 1 - 2cm from the cornu.⁵ This causes occlusion of the lumen and eventual avascular necrosis. The tube divides leaving two healed but occluded ends. The Filshie clip usually remains attached to the site of tubal separation and becomes peritonealised, causing few further problems. If there is a delay in peritonealisation, the clip may become detached and settle in other areas of the abdominal cavity.⁷

A number of cases of migration of Filshie clips have previously been described. These episodes have happened between ten months and seven years following sterilisation.⁷⁻¹³ In these cases, clips have either been passed with few symptoms via the urethra, vagina or rectum^{7,8} or caused symptoms due to a local inflammatory process or abscess formation.¹⁰⁻¹³ One case presented as appendicitis due to obstruction of the appendix lumen with a Filshie clip.⁹ The women in both cases presented here were symptomatic. One presented with irritative bladder symptoms and the other with right iliac fossa pain.

In the first case, the symptoms were due to inflammation of the bladder. These started four months prior to presentation and seven months before bladder resection. The histology showed cystitis cystica with a chronic inflammatory infiltrate in the submucosa. This confirms the hypothesis that clip migration is likely to be due to a low grade inflammatory process.⁷ Given that there was likely to be an asymptomatic period of clip erosion and that resection of the bladder nodule would have hastened clip erosion, the total time of migration through the bladder wall is likely to be over one year, clearly a chronic process. It is unlikely that clip misapplication plays a significant role, as in these and previous cases,

there is little documented difficulty at laparoscopy, there have been no reported sterilisation failures in association with clip migration and when tests of tubal patency have been performed, these confirm tubal occlusion (*Figure 1*).

In the second case, the symptoms were short lived and due to inflammation of the caecum. This suggests that the erosion into the caecum was a recent event and this was confirmed at surgery as there was only superficial erosion of the caecal wall with surrounding inflammation. As there was no perforation or serious sequelae, the clip was simply removed without resection of the bowel wall. This was unfortunate from a scientific point of view as this could have provided information on the histological changes during the early stages of migration. The reason for surgery in this patient was the inability to exclude appendicitis. If her symptoms had not been on the right side, conservative treatment may have been appropriate. As there have been no reported cases of significant morbidity such as perforation or fistula formation in association with clip migration, the pain in her case may have settled and the clip could have passed asymptotically via the rectum some time later as has been previously described.⁸

Laparoscopic tubal occlusion with Filshie clips remains the most common method of female sterilisation in the UK, being performed safely with few complications. This report adds to the small body of evidence regarding migration of Filshie clips. As well as demonstrating migration up to ten years following sterilisation and a case of migration to the caecum, the histological evidence of chronic inflammation indicates that this plays a role in the mechanism of clip migration.

REFERENCES

1. United Nations, Department of Economic and Social Affairs, Population Division. World Contraceptive Use 2003. New York: United Nations; 2004.
2. Dawe F, Meltzer H. Contraception and Sexual Health 2002. London: Office for National Statistics; 2003. Available from: <http://www.statistics.gov.uk/pfdir/csh0903.pdf>.
3. Rowlands S, Hannaford P. The incidence of sterilisation in the UK. *Br J Obstet Gynaecol* 2003; **110(9)**: 819-24.

4. Garrud P, Sheard C, Filshie M, Beattie A. Elective female sterilisation: a survey of UK gynaecologists' practices. *CME Bulletin Gynaecology* 2000; **2**: 13-17.
5. Royal College of Obstetricians and Gynaecologists. Male and female sterilisation: evidence-based clinical guideline. London: RCOG; 2004.
6. Filshie GM, Casey D, Pogmore JR, Dutton AG, Symonds EM, Peake AB. The titanium/silicone rubber clip for female sterilisation. *Br J Obstet Gynaecol* 1981; **88(6)**: 655-62.
7. Kesby GJ, Korda AR. Migration of a Filshie clip into the urinary bladder seven years after laparoscopic sterilisation. *Br J Obstet Gynaecol* 1997; **104(3)**: 379-82.
8. Food and Drug Administration of the United States of America, Advisory Panel Meeting, February 1996.
9. Denton GW, Schofield JB, Gallagher P. Uncommon complications of laparoscopic sterilisation. *Ann R Coll Surg Engl* 1990; **72(3)**: 210-1.
10. Scheel-Hincke JD, Berendtsen H. [Migrating clips – a complication of laparoscopic sterilization with Filshie clips]. [Article in Danish]. *Ugeskr Laeger* 1994; **156(32)**: 4592-3.
11. Amu O, Husemeyer RP. Migration of sterilisation clips: case report and review. *Br J Fam Plann* 1999; **25(1)**: 27-8.
12. Lok IH, Lo KW, Ng JS, Tsui MH, Yip SK. Spontaneous expulsion of a Filshie clip through the anterior abdominal wall. *Gynecol Obstet Invest* 2003; **55(3)**: 183-5.
13. Miliuskas JR. Migration of a Filshie clip into the urinary bladder with abscess formation. *Pathology* 2003; **35(4)**: 356-7.