

Filshie clip migration into wall of urinary bladder presenting with acute abdominal pain. Case report and review of English literature: from 1990 to April 2009

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Abstract: Female sterilization with Filshie clips is a commonly used contraceptive method around the world. Migration of the Filshie clip is a well recognized complication of this type of female sterilization and it is usually without subsequent serious morbidity. We report a case of a Filshie clip migration to the wall of the urinary bladder that resulted in presentation with acute abdominal pain 10 years following tubal occlusion. We have also reviewed all cases of migration of Filshie clip reported in the English language to date. The possibility of Filshie clip migration should be considered in the clinical presentation of unexplained abdominal pain, groin lump or perineal sepsis in women with past history of sterilization with Filshie clips.

Key words: Filshie clips; Migration; Urinary bladder; Acute abdominal pain.

INTRODUCTION

Tubal occlusion with Filshie clips is one of the preferred methods of female sterilization. It has a low failure rate when correctly applied. Complications of this method of sterilization can be divided mainly into two groups: early (peri-operative) and late complications. Early complications include mortality (1-2/100,000 procedures, mainly as a complication of general anaesthesia), visceral injury (bowel, urinary bladder and uterus), vascular injury and unintended laparotomy (1-2%). Procedure failure (occurrence of pregnancy including ectopic pregnancy) is the main late complication of this procedure. Migration of Filshie Clips is also a late complication; it is usually asymptomatic and does not result in serious morbidity. It should be kept in mind that in rare instances it can cause significant symptoms and morbidity.

CASE REPORT

A forty year old patient presented to one of the district hospitals with a one week history of right iliac fossa pain of increasing severity, requiring opiate analgesia. She also reported vaginal bleeding of one month duration after her periods had been absent for 18 months. She did not have nausea or vomiting, urinary or bowel symptoms. She had 3 children by normal vaginal delivery, followed by laparoscopic tubal occlusion using Filshie clips 10 years ago. Her past surgical history included an appendectomy. When she was examined by the medical officer in the district hospital, he reported that she was haemodynamically stable and afebrile. Abdominal examination revealed right iliac fossa and supra-pubic tenderness. Pelvic examination revealed moderate tenderness on mobility of the cervix. Serum beta-HCG was negative and white cell count was normal. The patient continued to have worsening of her pain in the right iliac fossa. It was decided to refer her to the tertiary hospital. On arrival to the tertiary hospital, her pain was still worsening although her clinical picture did not change from what is described above. Pelvic and abdominal ultrasound examination did not show any significant abnormality to explain her ongoing pain. A laparoscopy was arranged to investigate her pain together with hysteroscopy, dilatation and curettage to investigate the prolonged uterine bleeding after cessation of periods for 18 months. Hysteroscopy revealed a normal uterine cavity and endometrium. An endometrial biopsy was obtained and was sent for histology. At laparoscopy the right-sided

Filshie clip was found migrated away from the fallopian tube. It was implanted deeply in the wall of urinary bladder where it reflects from the anterior upper cervical wall on the right side. It was covered with thick peritoneal adhesions. On the left ovarian fossa there was a small patch, grey in colour, consistent in appearance with endometriosis. The buried Filshie clip was removed laparoscopically without inflicting bladder perforation. The grey patch on the left ovarian fossa was also excised. The patient recovered well after the surgery with instant and complete resolution of the right iliac fossa pain. She was discharged home on the first postoperative day. When she was reviewed 6 weeks later, she was in good health and free of pain. The histopathology of uterine curetting showed excessive glandular and stromal breakdown, there was no hyperplasia or malignancy. The histology of the excised grey patch on the left ovarian fossa confirmed endometriosis.

DISCUSSION

The Filshie Clip system for mechanical tubal occlusion has been available since 1982¹ and is a common means of achieving sterilisation. Filshie clips, and other mechanical devices for tubal occlusion, are preferable to tubal electrocoagulation because electrocoagulation can result in accidental electrical burns and is associated with an increased risk of ectopic pregnancy, compared to mechanical methods.² In addition, they are associated with lesser tubal damage, thus increasing the chance of reversal by tubal anastomosis. Technical proficiency and correct placement is emphasised throughout the literature as key to optimum efficacy of all methods. Application of the Filshie clip to positively identified fallopian tubes leads to avascular necrosis at the site, followed by division and healing of the stumps.³ The clips are held in place following peritonealisation, although they may detach if this process is slow to occur.⁴ Symptomatic presentation secondary to migration of Filshie clips is rare but recognized complication of sterilisation by this method. It was estimated by Filshie that migration of one or more clips would occur in 25% of women.¹ It is likely that not all loose clips cause symptoms, hence a proportion go undetected. When the Filshie clip was assessed for approval by the United States FDA in 1996, only 6 cases of migration or expulsion were reported amongst 5454 women involved in trials; there were three cases of spontaneous expulsion and three cases of incidentally discovered asymptomatic migration observed.⁵

TABLE 1. – Articles published (1997 – April 2009) of Filshie clip migration to the urinary bladder detailing clinical presentation, surgical notes, duration after application and means of removal of Filshie clip.

Reference	Presentation	Pre-operative and operative conditions	Duration after tubal occlusion	Site of migration	Means of expulsion/extrusion/ removal
Kesby and Korda (1997)⁶	24 hour history persistent macroscopic haematuria	Uncomplicated procedure Nil post-op complications Nil pelvic pathology	7 years	Urinary bladder –deep bed of chronic mucosal ulceration on right side	Spontaneous expulsion per urethra
Miliauskas (2003)⁷	2 week history pelvic pain and haematuria	Uncomplicated procedure Nil pelvic pathology	2 years	Urinary bladder - local abscess formation	Surgical removal (partial cystectomy)
Connolly et al. (2005)⁸	4 month history vague suprapubic discomfort, worse with menses Irritative bladder symptoms: frequency, nocturia, urgency	Past history ovarian cystectomy Uncomplicated procedure Nil anatomic abnormalities	10 years ⁹	Urinary bladder – nodule of chronically inflamed tissue on dome of bladder	Spontaneous expulsion per urethra (6 weeks after initial presentation)
Palanivelu and Lynch (2007)¹⁰	1 year history of intermittent lower abdominal pain & painful micturition	Uncomplicated procedure	18 months	Urinary bladder	Spontaneous expulsion per urethra

Case reports documented migration of clips to the peritoneal cavity and specific organs, many with clinical presentations involving acute or chronic pain that mimicked common intra-abdominal pathologies (Table 1 and 2). Time to presentation varied greatly, from 6 weeks to approximately 20 years following sterilisation. In the majority of cases, where reported during the tubal occlusion, pelvic anatomy was observed to be normal with absence of pelvic pathology. The procedure was reported to have been uncomplicated in most cases. Presumably, these favourable conditions facilitated identification of anatomical structures and correct placement of clips. There was no apparent association between site of migration, history of gynaecological procedures or pelvic pathology and duration to presentation.

To date, migration to the urinary bladder has been reported in 4 other cases (Table 1). Additional sites of migration were the anterior abdominal wall (4), perianal/pararectal tissues (4), peritoneal cavity (3), groin (3), colon (2) and vagina (1) (Table 2). With the inclusion of this case, there were more reported cases of migration to the bladder than to other sites. Regarding migration to the bladder, the lack of urinary symptoms in this case may be because the migrated Filshie clip did not migrate through the full thickness of the bladder wall.

Abscess formation, ulceration, fistula formation, tissue induration and adhesion formation were commonly observed and suggest local tissue reaction to the Filshie clip. Resolution of symptoms following removal of migrated clips, regardless of the means by which this occurred, supports the assumption that the pain and associated symptoms were due to a local inflammatory response.

It is apparent that accurate documentation of anatomy, pelvic pathology and correct clip placement at the time of tubal occlusion can help in identifying long-term complications, but also preclude problems from a medico-legal perspective. It is reassuring that none of the reported cases of Filshie clip migration have resulted in mortality prior to their removal or chronic morbidity subsequent

to their removal. Nevertheless, the clinical presentations necessitated radiological interventions and invasive surgery in most to identify and retrieve the clip(s). As such, the authors recommend that clip migration and its possible sequelae should be carefully explained to patients to ensure they are aware of this potential complication, that it may occur from weeks to years after occlusion and has varied presentations.

CONCLUSION

This case adds to the body of literature concerned with migration of Filshie clips. Although rare, migration should be considered in the differential diagnosis of women experiencing abdomino-pelvic pain, without obvious pathology, who have previously undergone tubal occlusion by this method.

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TABLE 2. – Articles published (1990 – April 2009) of migration of Filshie clips to other organs excluding the urinary bladder. It shows patient main presentation, interval between clip application and organ from which Filshie clip was expelled or extruded.

• Exact period not stated in source text, duration approximated from publication year and dates in text.

	Reference	Presentation	Pre-operative and operative conditions	Duration after tubal occlusion	Site of migration	Means of expulsion/extrusion/ removal
Peritoneal cavity	Daucher and Weber (2006) ¹¹	Diffuse mid-abdomen and RLQ pain	<ul style="list-style-type: none"> Uncomplicated NVD (7 weeks prior to sterilisation) Uncomplicated procedure Nil anatomic abnormalities 	2 years	Left clip - attached to peritoneal surface of anterior cul-de-sac, left of bladder reflection Right clip - attached to right broad ligament	Surgical removal
	Kalu et al. (2006) ¹²	1 year history LIF pain, deep dyspareunia and dysuria	<ul style="list-style-type: none"> Uncomplicated procedure 	3 years	Left clip - Peritoneum of left uterosacral ligament Right clip - Peritoneum in uterovesical pouch	Surgical removal
	Loddo et al. (2008) ¹³	Nil symptoms Removal requested for religious reasons	<ul style="list-style-type: none"> Past history LSCS (3) 	6 years	Peritoneal defect of pouch of Douglas	Surgical removal
Anterior abdominal wall	Amu and Husemeyer (1999) ⁴	5 week history painful swelling around umbilicus	<ul style="list-style-type: none"> Normal pelvic anatomy Evidence of inactive endometriosis on right uterosacral ligament 	3 years	Subcutaneous tissue of anterior abdominal wall	Surgical removal
	Lok et al. (2003) ¹⁴	3 day history painful lump below umbilicus 3 months later, pain and purulent discharge from abscess formed whilst waiting for elective surgery	<ul style="list-style-type: none"> Past history LSCS (2) Postpartum sterilisation Uncomplicated procedure Normal pelvic anatomy Nil pelvic pathology 	5 years	Subumbilical anterior abdominal wall	Spontaneous extrusion from abscess and subsequent removal
	Krishnamoorthy et al. (2004) ¹⁵	3 week history increasing pain over abdominal lump 3 day history greenish discharge from lump	<ul style="list-style-type: none"> Past history LSCS (2) & NVD Dense omental and bowel adhesions Laparotomy required for placement 	5 years	Subumbilical anterior abdominal wall	Spontaneous extrusion from abscess
	Tan et al. (2004) ¹⁶	Yellowish vaginal discharge 6 weeks post partum LIF pain from 6 weeks post partum Left-sided premenstrual pain at 2 years post-partum	<ul style="list-style-type: none"> Post-partum sterilisation Uncomplicated procedure 	<ul style="list-style-type: none"> Initial presentation (6 weeks & 11 weeks) Loss to follow up Second presentation at 2 years 	Subcutaneous tissue at anterior abdominal wall with surrounding granuloma and abscess formation	Surgical removal
Perianal/Pararectal tissues	Pandit (2004) ¹⁷	Passage of Filshie clip rectally	<ul style="list-style-type: none"> Uncomplicated procedure Normal pelvic anatomy 	6 weeks	Transperitoneal migration to rectum	Extruded per rectum
	Hasan et al. (2005) ¹⁸	Vague lower abdominal pain and loose motions (2001) Recurrent perianal abscess (2004)	<ul style="list-style-type: none"> Nil pelvic pathology 	12 years	Perianal tissues - perianal abscess with formation of fistula in ano	Surgical removal
	Buczacki et al. (2007) ¹⁹	5 month history discharging lesion around anus (apparent fistula in ano)	<ul style="list-style-type: none"> Not reported 	15 years	Pararectal tissues	Surgical removal
	Dua and Dworkin (2007) ²⁰	4 month history recurrent peri-anal abscess with fistula formation Bleeding from fistula at menses	<ul style="list-style-type: none"> Uncomplicated procedure Nil subsequent intraabdominal pathology 	3 years	Apex of ischiorectal fossa	Surgical removal
Groin	Garner et al. (1998) ²¹	3 day history of lump in right groin	<ul style="list-style-type: none"> Initial unsuccessful sterilisation Subsequent successful sterilisation 1 year later 	? 5 years*	Femoral hernia - 3 clips identified within sac	Surgical removal
	Khalil and Reddy (2006) ²²	2 week history irreducible, tender right groin lump	<ul style="list-style-type: none"> Not reported 	~20 years	Groin with inguinal sinus formation following excision of inflammatory mass	Spontaneous expulsion per inguinal sinus
	Verma and Oteri (2007) ²³	4 week history constant pain and lump in right groin with low-grade fever, loss of weight and general malaise	<ul style="list-style-type: none"> Not reported 	13 years	Right groin with extraperitoneal abscess formation	Surgical removal
Colon	Denton et al. (1990) ²⁴	12 hours history constant severe RIF pain and nausea	<ul style="list-style-type: none"> Not reported 	2 years	Appendiceal lumen	Surgical removal
	Connolly et al. (2005) ⁸	2 day history RIF pain with nausea	<ul style="list-style-type: none"> Past history ventrosuspension Uncomplicated procedure Omental adhesions in right pelvis divided at time of sterilisation 	10 years	Caecum - erosion into tissue with surrounding induration	Surgical removal
Vagina	Kale and Chong (2008) ²	Passage of Filshie clip per vagina during menses	<ul style="list-style-type: none"> Post-partum sterilisation Uncomplicated procedure 	5 years	? Vagina	Spontaneous expulsion per vagina

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