

Bowel obstruction due to entanglement with unidirectional barbed suture following laparoscopic myomectomy

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Introduction

Laparoscopic myomectomy is considered a safe and reliable procedure, associated with less post-operative pain, shorter inpatient stay and a reduced complication rate, when compared to open myomectomies [1]. This case report describes a late complication following laparoscopic myomectomy: bowel entanglement involving unravelled V-loc™ suture resulting in small bowel obstruction.

V-loc™ (Covidien, Mansfield, MA) is an absorbable, unidirectional, barbed suture frequently used at laparoscopy to close the serosal surface of the uterus following myometrial repair with absorbable polyglycolic acid sutures. These barbed sutures enable the surgeon to close the incision without the need to tie any knots, lending itself to laparoscopic surgery. In the context of cadaveric peritoneal closure, the tensile strength of V-loc™ has been shown to compare favourably with other closure techniques [2].

Case presentation

Following discussion, a 52-year-old nulliparous woman elected to have a laparoscopic myomectomy for her multi-fibroid uterus. She primarily experienced mass symptoms, particularly an awareness of an obstruction during sexual intercourse.

Two large fibroids were excised and morcellated at laparoscopic myomectomy—a 92-mm pedunculated posterior

and a 70-mm subserosal fundal fibroid. These had a combined weight of 353 g. The myometrial defects were closed in two layers with V-loc™ to the uterine serosa. SprayShield™ (Covidien, Waltham, MA) was then applied as an adhesion barrier. The surgery was uncomplicated, lasting 105 min with minimal blood loss. Her immediate recovery was unremarkable. She was discharged the next day.

Four weeks later she presented to the emergency department with generalised, colicky abdominal pain associated with vomiting, loss of appetite and abdominal distension. An abdominal X-ray followed by CT scan demonstrated dilated loops of ileum with air–fluid levels, and a transition point with collapsed terminal ileum distally. She was admitted under the general surgeons with suspected bowel obstruction secondary to adhesions. Following 3 days of conservative management and no improvement, she proceeded to have a diagnostic laparoscopy.

At laparoscopy it became evident that a segment of small bowel was wrapped around a 4-cm length of unravelled V-loc™ suture protruding from the myomectomy site. The bowel was freed easily laparoscopically, sustaining no trauma and the visible V-loc™ suture removed. The uterus appeared normal with no adhesions. She made a good recovery, opening her bowels prior to discharge. There were no long-term sequelae at the 4-month follow-up.

Discussion

Barbed suture provides an economic advantage as it reduces operative time; the unidirectional barbs maintain tension allowing for quicker and easier continuous suturing, thereby avoiding protracted laparoscopic knot tying. On review of the literature, bowel obstruction caused by barbed suture has not previously been described following laparoscopic

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myomectomy. A case has however been reported following a total laparoscopic hysterectomy where barbed suture used for vaginal cuff closure caused a small bowel obstruction [3]. In our case, it is speculated that the V-loc™ suture unravelled, leaving its barbed surface exposed to the bowel.

The manufacturer states that V-loc™ 90 is absorbed within 90 days. It has been used in more than 80 laparoscopic myomectomies in our department, with no other apparent complications.

In large case series of laparoscopic myomectomies, minor and major complication rates occur in 9% and 2% of cases, respectively [4]. Blood loss requiring a transfusion occurs at a rate of 0.6–8%. Post-operative pyrexia and haematomas occur between 0.5% and 8% of cases, and at less than 0.05%, bowel injury and emergency hysterectomy are infrequent [4].

Adhesions following myomectomy by any route are a recognised long-term complication, however significantly reduced at laparoscopy compared to open myomectomies [5]. Uterine rupture during labour in those that conceive following myomectomy is also well documented [6].

Less frequently reported complications include a case of unabsorbed adhesion barrier observed during repeat surgery at 1 year [7] and reports of disseminated peritoneal leiomyomatosis, iatrogenic adenomyosis and parasitic myomas following laparoscopic myomectomy [8–10].

Conclusion

Three main recommendations are underlined in this case. We highlight the potential risk of using a barbed, unidirectional, untied suture at laparoscopic myomectomy. The presence of barbs may have contributed to the bowel entanglement.

Bowel obstruction due to entanglement should be considered as a late complication following laparoscopic myomectomy. Furthermore, should bowel obstruction arise, it may be safely managed at laparoscopy by an experienced general surgeon, thereby avoiding a laparotomy.

In the absence of robust data, careful consideration should be given to the choice of suture material. Randomised clinical studies of suture materials used for closure at myomectomy would clearly give a better indication of suture efficacy, any similar complications and their rates.

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