

CASE REPORT

Polypropylene Suture Loop as a Cause of Small Bowel Obstruction

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ABSTRACT

In this case report, we share our experience of complication with use of intra-abdominal polypropylene sutures. The patient presented with intestinal obstruction resulting from the herniation of small intestine through the polypropylene suture loop due to a knot placed on the uterine fundus around seven years prior during an uncomplicated low segment cesarean section with bilateral tubal ligation. An exploratory laparotomy was performed and suture material was cut to release the obstructed gut. Meticulous care needs to be taken when using suture material intra abdominally by either burying the suture material or keeping the suture short.

Key Words: *Intestinal Obstruction, Intraoperative Sutures, Prolene.*

Introduction

Polypropylene is a synthetic, monofilament, non-absorbable suture.¹ The suture is best suited for use on the skin, hernias, vascular anastomosis and closing rectus sheaths or linea alba. Its use intraperitoneally is very limited due to its propensity to erode through and into the surrounding tissue. Federal Drug Authority in America has issued several warnings regarding the use of prolene and prolene meshes due to an increase in the number of mesh driven tissue erosions reported by patients over the years, specifically in pelvic surgeries.² However, small bowel obstructions have previously been reported with intracorporeal suturing with barbed and V-lock sutures.³ To our knowledge, no previous case of intestinal obstruction has been reported with polypropylene sutures used for previous intra-abdominal surgery.

This case highlights the potential problems that can arise from the use of this suture intra-abdominally.

Case Report

A 30 year old female presented with sudden severe colicky abdominal pain. Patient had associated greenish non bloody vomiting with obstipation. The abdomen was mildly distended and there was

significant tenderness or rebound on palpation. Bowel sounds were absent. X-ray of abdomen showed dilated small bowel loop with air fluid levels. Patient had no previous history of tuberculosis and no reported exposure to tuberculosis. Ultrasound of abdomen showed free fluid in pelvis and dilated small bowel. Patients findings were consistent with peritonitis due to intestinal obstruction, a suspicion of abdominal tuberculosis and adhesions couldn't be ruled out. A CT-scan abdomen was done to delineate the cause of obstruction, which showed significantly dilated ileum with few calcified mesenteric lymph nodes.

Patient was managed conservatively at first with nasogastric tube, fluids and nil per oral. Patient symptoms settled in a day and the X-ray of abdomen became normal. Patient was discharged after observing for any deterioration in starting oral fluids. However, patient returned to the hospital after a day with similar symptoms of pain, distention and similar X-ray abdomen.

An exploratory laparotomy was performed with lower midline abdominal incision. Dilated bowel loop was traced back to the transition point, a visible polypropylene suture was identified containing a herniated ileum passing through the suture loop. The suture was anchored on the fundus of the uterus running through the body in a continuous fashion and a single suture loop of the suture was free on the fundus. The free loop seemed to have eroded through the uterine wall. Two more polypropylene sutures were visible a distance away, used for bilateral tubal ligation. No comment on the type of previous surgery performed can be made because no history of any surgical procedure apart from cesarean section and bilateral tubal ligation seven

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years prior could be obtained. The free loop of suture had ileum in it and was compressing the lumen of the bowel causing obstructive symptoms. The suture was cut and removed, bowel checked for viability and abdomen closed in a layered fashion. Patient had a complete recovery after the surgery.

Discussion

Intestinal obstruction is very commonly encountered in surgical practice. Although the cause of obstruction can be identified in majority of the cases based on history, examination and imaging studies, there are still dubious cases in which no definite cause is identifiable on initial studies. When no mechanical cause of obstruction is found on imaging, there is a high tendency of such patient being labelled as having chronic disease such as tuberculosis due to high prevalence of the disease in our setup and difficulty in diagnosing it.⁴

One needs to keep a high index of suspicion for rare causes of intestinal obstruction.

Although we have advances in imaging like multi slice scans, MSCT patient symptoms should never be overlooked. Multi slice CT scans have a diagnostic accuracy of about 91% to determine intestinal obstruction. These MSCT scans are less reliable for small bowel as compare to large bowel obstruction with a diagnostic accuracy of 98% for large and 78% for small bowel. To conclude, CT scans can't delineate all causes of intestinal obstruction and persistent or recurrent pain is an indication for prompt surgical intervention.⁵

Intraperitoneal sutures causing intestinal obstruction is very rare. Recently V-lock and barb suturing in laparoscopic surgery has been reported as a cause of intestinal obstruction either due to intestinal herniation through the loop or adhesions

post operatively.³ However, as this case highlights, any non-absorbable suture has the ability to cause intestinal obstruction for an indefinite period of time if left intraperitoneally. Inadvertant loops can form after erosion in the tissue in which they are originally used. Although prolene is not commonly used intraperitoneally, its use in fixing meshes, especially in pelvic surgeries, is well known. Moreover, it is at times used to mark or hitch viscera to the abdominal wall. It should be kept in mind that its use in these situations is not completely risk free. Due to this reason, surgeons should be extra careful when using these sutures intraperitoneally. Meticulous use of sutures, keeping a short length of the suture intraperitoneally and burying them wherever possible are all suggested to decrease the risk of such complications.

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