Port Site Hernia : A Rare Complication of Laparoscopy

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Introduction

Laparoscopic operations offer an advantage of rapid postoperative recovery. However a rapid expansion in the volume and complexity of laparoscopic surgery has been accompanied by complications, many of which can be directly attributed to abdominal access with laparoscopic trocars. Intestinal obstruction due to port site hernia is an uncommon cause of morbidity [1].

Sporadic reports of obstructed trocar site hernia have been reported. The treatment for such a complication requires laparotomy in most cases. We report a case of port site hernia presenting as intestinal obstruction that was successfully treated laparoscopically.

Case Report

A 26 year old lady underwent laparoscopic excision of right adnexal mass. Four ports were used for carrying out the procedure, of which two were 10 mm and two were 5 mm. Of the two 10mm ports one was an umbilical camera port and other was a right iliac fossa working port, which was also used to extract the specimen. The left flank had two working ports, both 5mm. The fascial defects of 10 mm ports were closed with absorbable polyglycolic acid 2/0 suture. On the third post operative day, the patient developed features of intestinal obstruction in the form of persistent pain, vomiting, inability to pass flatus and mild abdominal distension. Clinically the abdomen was mildly distended; the port sites had sutures in situ; with no visible swelling or inflammation. Per rectal examination showed the rectum to be empty. All hematological and biochemical parameters were within normal limits. Plain radiographs of abdomen in erect and supine positions showed multiple air fluid levels with no gas in the colon. USG abdomen showed dilated fluid filled loops of bowel with no free fluid in abdomen.

She was taken up for repeat laparoscopy with the diagnosis of intestinal obstruction. As there was no marked distension, we decided to use a laparoscope to identify the cause. At operation, a port was introduced carefully under vision, through the previous umbilical port site. The abdomen was

explored using a 30 degrees telescope. We found a wall of ileal loop herniating through the right iliac fossa port site (Fig. 1). Laparoscopic assisted reduction of the port site hernia was done after opening the skin sutures over the port site. Care was taken and the gut repositioned back manually without causing damage. The repositioned gut was examined and found to be viable. The fascia of both the umbilical port site and hernial site were closed with non absorbable polypropylene 2/0 suture. The patient recovered well after the procedure.

Discussion

Crist and Gadacz defined trocar or port site hernia as the development of a hernia at the canula insertion site. The incidence of trocar site hernia is estimated to be between 0.65 - 2.80%. Tonouchi et al [2], suggested a classification in which these hernias were classified into three types. The early onset type had dehiscence of fascial plane and peritoneum within two weeks, most commonly with small bowel obstruction. The late onset type occurred after two weeks and had dehiscence of fascial plane with a sac consisting of peritoneum. Only 12.50% of late onset hernias presented with intestinal

Fig. 1 : Laparoscopic view of port site herniation of bowel loop

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obstruction. The third category includes special types of hernia which have dehiscence of the whole abdominal wall.

Various factors have been implicated in the pathogenesis of trocar site hernias. Large trocar size, incomplete closure of fascia at the trocar site, midline trocars, stretching the port site for organ retrieval, the effect of a partial vacuum while port withdrawal, obesity, poor nutrition and operation site infection are some of the common factors related to the development of trocar site hernias. A study involving 840 trocar site hernias revealed that 86.3% of hernias occurred in sites where the trocar diameter was 10 mm or more [2]. Lateral hernias due to the overlapping of muscles and fascia are uncommon. In a survey of the American Association of Gynaecologic laparoscopists, umbilical hernias were found in 75.70% as compared to lateral hernias in 23.70% cases [3].

Richter's hernia occurs when a part of the bowel wall herniates through the port site. The incidence of Richter's hernia was about 47.50% in early onset hernias in one series and they typically present with nausea, vomiting, pain and abdominal distention [2]. Computed tomography and gastrointestinal contrast studies have been used to aid the diagnosis of trocar site hernias [4]. The management of most of these hernias include an explorative laparotomy, widening of the trocar site, reduction of the hernia and further surgeries based on the bowel viability.

Prevention of trocar site hernias includes closing of all port sites more than 10mm at the fascial level. Some authors recommend fascial closure of 5mm ports also [2]. Many authors have recommended the deflation of pneumo-peritoneum prior to port removal so that

omentum and intestines are not drawn into the fascial defect. Other techniques to prevent herniation include fascial closure using fascial closure device, suture carrier and Deschamps needle [5,6]. Some authors have also reported a lower incidence of hernias with the use of a paramedian incision and non bladed trocars which have a conical tip [6].

The rarity of small bowel obstruction encountered due to the development of an early onset type of Richter's hernia in a lateral port and the successful laparoscopic assisted technique employed to resolve the problem have been highlighted.

Conflicts of Interest

None identified

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