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Case Report

A rare cause of intestinal obstruction: dual mesh migration into the small intestine following laparoscopic umbilical hernia repair

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ABSTRACT

The laparoscopic approach is widely accepted worldwide for the management of Umbilical hernias. Here we report a case of intestinal obstruction due to migration of a composite dual mesh into the small intestine after laparoscopic umbilical hernia repair. A case was reported in which, a 50-year-old female patient presented in emergency department with 3 days history of constipation and a clinical picture of intestinal obstruction. She underwent laparoscopic umbilical hernia repair using dual mesh elsewhere 2 years back. As initial conservative management failed, emergency exploratory laparotomy was done which showed adhesions between the ileum and anterior abdominal wall and the mesh had migrated into the intestinal lumen and produced intestinal obstruction. The involved bowel was resected. It was concluded that mechanical small bowel obstruction is an uncommon and rare but possible complication after laparoscopic umbilical hernia repair using dual mesh.

Keywords: Dual mesh, Intestinal obstruction, Laparoscopy, Umbilical hernia

INTRODUCTION

Umbilical hernia is a rather common surgical problem. Elective repair after diagnosis is advised. Suture repairs have high recurrence rates, therefore, mesh reinforcement is recommended. Mesh can be placed through either an open or a laparoscopic approach with good clinical results. Laparoscopic umbilical hernia repair has been practiced since late 1990s.[1,2] Composite meshes are required for laparoscopic repairs. Migration of a surgical mesh, consequent infection and enterocutaneous fistula formation are the dangerous and more common complications in patients who have undergone hernia repair. Here we describe a case of small intestinal obstruction due to migration of a composite dual mesh 2 years after umbilical hernia repair.

CASE REPORT

A 50-year-old female patient presented in emergency department with 3 days history of abdominal distension, pain and fever. She had absolute constipation for 3 days. She is a known diabetic on oral hypoglycemic drugs. She underwent laparoscopic umbilical hernia repair elsewhere 2 years back. The hernia was repaired by the laparoscopic intraperitoneal onlay mesh (IPOM) technique using composite dual mesh. Physical examination showed abdominal distension .Laparoscopic port site scars were present in the abdomen. Bowel sounds were increased. Digital rectal examination revealed empty rectum. Patient was resuscitated. X-ray abdomen showed dilated small bowel loops along with few air fluid levels. Ultrasound abdomen revealed edematous, and dilated small bowel loops. Diagnosis of sub-acute intestinal obstruction was made and the patient was put on conservative management. Blood investigations showed Hb 12.5 g/dl, WBC 15,600/cumm of which 85 % were polymorphs. Her serum electrolytes, renal function test and liver function test were normal. There was no improvement in her general condition with time and the obstruction was not relieved. To clarify the etiology an abdominal CT scan was obtained. The CT scan showed dilated and fluid

filled edematous small bowel loops with adhesion to the abdominal wall and intral luminal abnormal shadows in the mid ileum suggestive of intestinal obstruction.

Emergency exploratory laparotomy was done. Intraoperatively, the jejunum was dilated and there were extensive adhesions between the ileum and the previous site of mesh repair in the abdominal wall. The bowel loops were detached from the parietes gently and repaired. We observed that the mesh had migrated into the ileum from the abdominal wall and produced intestinal obstruction (Figure 1, 2). About 50 cms of the involved ileum was resected and end to end anastomosis was done. Postoperative recovery was uneventful except for minimal wound infection and the patient was discharged 15 days post-surgery.

Figure 1: Dual mesh migrated inside the lumen of ileum producing intestinal obstruction.

Figure 2: Mesh extracted from the ileal lumen.

DISCUSSION

The umbilicus is one of the potential weak areas of the abdomen and a relatively common site of herniation. Umbilical hernias occur more frequently in women, obesity and repeated pregnancies being the most common precursor.[3] Laparoscopic repair of umbilical hernia has largely replaced open method and become popular among the surgeons and patients due to statistically fewer wound complications, short hospital stay and low recurrence rate.[4]

In the present era, umbilical hernias are repaired either by the laparoscopic intraperitoneal onlay mesh (IPOM) technique using tissue separating/dual meshes or with poly propylene mesh by raising a flap (TAPP).

Composite meshes with absorbable barrier (Sepramesh - Genzyme Biosurgery, Cambridge, USA , Parietex and Parientene Composite meshes, PROCEED surgical mesh- Johnson and Johnson, India) and nonabsorbable barriers (Bard composix mesh - Davol Inc, Cranston, USA,The Gore-Tex Dual mesh -W. L. Gore, USA) are now the prosthesis of choice in laparoscopic ventral hernia repair by IPOM technique.[5] The prosthesis is fixed in place with either transfascial sutures or tacks. However, mesh is a foreign substance, which may increase the risk of complications such as hematoma, seroma, foreign body reaction, organ damage, infection, mesh rejection, and fistula formation. Among these complications, mesh migration is relatively rare. Mesh erosion and migration can present as acute intestinal obstruction, mass formation, bowel perforation and chronic abdominal pain.[5-7] Mesh migration may occur because of inadequate fixation of the mesh to the fascia or adequate fixation complicated by sliding via external forces and entry in the abdomen from points of least resistance. In addition, migration can occur acutely or in response to an inflammatory reaction to mesh erosion over a period of years.[8-10] Mesh erosions into the Stomach, Small intestine, Large intestine and bladder following various hernia repairs are available in the literature.

Ripetti V et al reported two cases of mesh migration and infection after umbilical hernia repair, causing enterocutaneous fistula.[12] Bostanci O et al reported a case of enterocutaneous fistula due to late mesh migration in a mentally retarded, diabetic, male patient after umbilical hernia repair with composite dual mesh.[8]

Although infection and enterocutaneous fistula formation are commonly reported in the literature, mechanical bowel obstruction due to mesh migration is a very rare complication after laparoscopic hernia repair. This has been reported after laparoscopic repair of inguinal or ventral hernias.[10,11] So far, only two cases of mechanical small bowel obstruction, due to mesh migration following laparoscopic umbilical hernia repair had been reported in the literature.[13,14] In both the two cases polypropylene meshes were used for repair. In our case, unlike other

cases in the literature, the mesh erosion and small bowel obstruction occurred after Implantation of a composite dual mesh, as opposed to a polypropylene mesh.[13,14]

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