



ACUTE INTESTINAL OBSTRUCTION DUE TO MIGRATED INGUINAL HERNIOPLASTY MESH-A CASE REPORT

Dr Parth Manek	Senior Residents, Department of Surgical Gastroenterology, Seth GS Medical College and KEM Hospital, Parel, Mumbai-12.
Dr Parth Patel	Senior Residents, Department of Surgical Gastroenterology, Seth GS Medical College and KEM Hospital, Parel, Mumbai-12.
Dr Kishor Jain	Assistant Professor, Department of Surgical Gastroenterology, Seth GS Medical College and KEM Hospital, Parel, Mumbai-12.
Dr Sharvari Pujari	Assistant Professor, Department of Surgical Gastroenterology, Seth GS Medical College and KEM Hospital, Parel, Mumbai-12.
Dr Ramkrishna Prabhu	Associate Professor, Department of Surgical Gastroenterology, Seth GS Medical College and KEM Hospital, Parel, Mumbai-12.
Dr Chetan Kantharia*	Professor and Head, Department of Surgical Gastroenterology, Seth GS Medical College and KEM Hospital, Parel, Mumbai-12. *Corresponding Author

ABSTRACT Mesh Hernioplasty is the gold standard for Inguinal hernia. However, it is not free of complications. Mesh migration causing intestinal obstruction, albeit rare, is a serious and complications. Timely surgical intervention is very important in the management of this condition. We report a rare case of an elderly male patient with mechanical bowel obstruction due to mesh migration 9 years after a right inguinal hernia meshplasty.

KEYWORDS : Surgical mesh migration , Acute intestinal obstruction, Mesh Hernioplasty

CASE PRESENTATION

A 70-year-old male presented with complaints of abdominal pain, distension, vomiting and obstipation since two days. The pain was sudden in onset, colicky, non-radiating, aggravated on food intake and relieved with vomiting. The vomiting was persistent, bilious in nature and not relieved on medication. There was no history of fever or bleeding per rectum. He was a known case of pulmonary kochs, having taken AKT in 1988 and 2002. He also had history of undergoing surgery for left inguinal hernia surgery in 2006 and right inguinal hernia Meshplasty in 2010. He had similar episode suggestive of intestinal obstruction in 2012 for which he was admitted for a week in a hospital else where and treated conservatively. A CECT Scan done then was reported as ? stricture ?? adhesion in ileo-caecal region. On examination in the present admission, patient was dehydrated, and had tachycardia . Abdomen was tense, distended, with diffuse tenderness and guarding. Bowel sounds were absent. Scars of previous bilateral inguinal hernia surgery were seen with overlying skin appearing normal. Digital rectal examination revealed empty rectum. Chest examination was clear.

X ray abdomen done revealed multiple air fluid levels. CECT Scan done revealed dilatation of small bowel loops (maximum diameter 4.3cm) with transition point at terminal ileum, Ileo-Caecal junction was normal. A **suspicious curvilinear hypodense line was seen at transition point which was interpreted to be an adhesive band.** There was internal herniation across the band for short segment. Bowel loops showed normal wall enhancement.

In view of his clinical findings, and imaging suggestive of intestinal obstruction, patient was taken up for Exploratory Laparotomy after roptimization. A midline incision was taken. Intraoperative findings revealed dilatation of the entire small bowel with large bowel collapsed and transition point being at terminal ileum. A mesh was seen migrating from the deep ring of the inguinal canal on the right side, going around the terminal ileum ,causing intestinal obstruction. The mesh was excised, and obstruction relieved.

Viability of the bowel was confirmed by administering 100 % oxygen and covering the affected bowel with warm saline mops. As the bowel appeared healthy, a decision not to resect the bowel was taken. The ensuing defect in the inguinal region was sutured with 2/0 Prolene sutures from within the abdomen, taking interrupted sutures. Abdomen was closed in monolayer using NO 1 loop ethilon. Post-operative event was uneventful and patient was discharged on post-operative day seven.



Image 1 : Plain X Ray Abdomen Erect Showing Multiple Air Fluid Levels



Image 2 : Plain X Ray Abdomen Erect Showing Multiple Air Fluid Levels

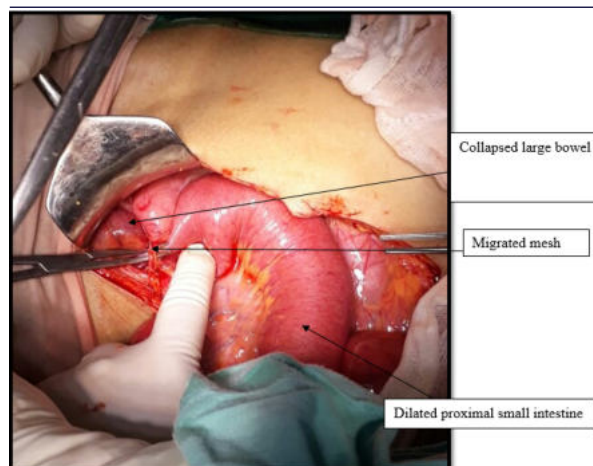


Image 3 : Intraoperative photograph of crumpled, migrated polypropylene mesh forming an adhesive band around the terminal ileum and dilated proximal bowel

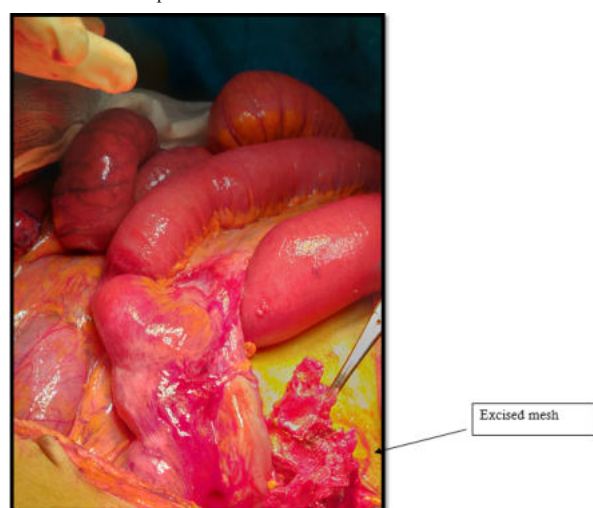


Image 4 : Intraoperative Photograph Showing The Excised Migrated Mesh

DISCUSSION

Lichtenstein mesh hernioplasty, which involves placing of a mesh anterior to the fascia transversalis, is the most common surgical procedure practiced worldwide for Inguinal hernia^[1]. However it is not without its share of complications. The common complications following Lichtenstein mesh hernioplasty include persistent pain, neuralgia, infection of the mesh, recurrent hernia, and mesh erosion and migration. Bowel obstruction due to mesh migration following use of Prolene Henia System in which plug hernioplasty is well documented in the literature²³. Besides Mesh migration following Laparoscopic hernia repair too also has been described^{4,5}. However the literature evidence for mesh migration after open onlay (Lichtenstein) mesh hernioplasty is sparse.⁶ The present case documents Intestinal Obstruction following mesh migration in a previously performed Open Hernioplasty.

Mesh migration has been described to occur by two mechanisms, Primary or Secondary⁷. In Primary mesh migration, mechanical migration occurs due to inadequate securing of the mesh. As a result the mesh traverses along adjoining paths of least resistance or is displaced by external forces. In contrast, Secondary mesh migration; migration occurs due to erosion triggered by foreign body reaction. In this mechanism migration occurs through trans-anatomical planes, over a period of time, at times even years, when the mesh gradually engulfs the adjacent anatomic structures. This may result in obstruction and at times even in entero-cutaneous fistulae formation^{8,9}. In the present case, secondary migration seems to be the cause, owing to the fact that hernia on the right side was done nine years back and the patient had complaints of subacute obstruction in past which was treated conservatively.

The type of mesh used has also been implicated to play a role in migration by secondary mechanism¹⁰. The nature of mesh is believed to influence the extent of inflammatory reaction, which in turn impacts creation of granulation tissue at the site of mesh placement, which in turn triggers the erosion. The method of fixation too is implicated in the secondary mechanism⁹, it playing a role in determining the tensile strength and degree of movement of the mesh. In the present case, a Prolene mesh was used with fixation done with prolene sutures.

The clinical presentation of mesh migration has marked variation, from being an incidental findings to at times mimicking malignancy. The commonly occurring symptoms include abdominal pain, gastrointestinal bleeding, bowel obstruction, and diarrhea. Our patient had symptoms of small bowel obstruction.

Mesh migration warrants surgical intervention to prevent its complication. For acute intestinal obstruction caused by mesh erosion, Surgery is the only option. The primary aim of surgery involves removing the constricting band leading to obstruction. Depending on the viability of the bowel resection of the affected loop with anastomosis may be done. Whether a definitive repair of the fascial defect should be done at the same sitting is debatable. While there is a high likelihood of hernia recurrence after mesh removal, there is a high probability of postoperative infection occurring following placement of a mesh at the time of surgery. In such a dilemma, an anatomical repair performed by suturing the internal ring from within the abdomen, is the a safe alternative. In our present case, we performed suturing of the deep ring from within the abdomen.

CONCLUSION

Migration of onlay mesh into the peritoneum is extremely uncommon and bowel obstruction due to it is further rare. Hence in a patient of bowel obstruction, with past history of mesh hernioplasty a high index of suspicion is warranted. Treatment is essentially surgical, involving removal of mesh causing obstruction, and resection and anastomosis if necessary, if the integrity of bowel is in doubt. However to prevent the complications what is most important is to choose a mesh of optimal material and to fix and secure the mesh properly.

ABBREVIATIONS

CECT(A+P) : Contrast enhanced computed tomography of abdomen and pelvis

ICJ : Ileo caecal Junction

CONFLICT OF INTERESTS

The authors declare that there is no conflict of interest to declare

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