Small bowel obstruction by mesh migration after umbilical hernia repair



Ann. Ital. Chir., 2007; 78: 59-60

Antonio Di Muria, Vincenzo Formisano, Filippo Di Carlo, Achille Aveta, Domenico Giglio



Department of Emergency, Unit of Emergency Surgery, (Direttore: Prof. D. Giglio), San Giovanni Bosco Hospital, Naples, Italy.

Small bowel obstruction by mesh migration after umbelical hernia repair

A case of intestinal obstruction due to mesh migration is described. A 61 year old patient affected by BPCO and chronic atrial fibrillation is admitted for mechanical intestinal obstruction. He underwent a umbilical hernia repair with mesh and onfalectomy 6 years before. Laparotomy revealed the obstruction due to an inflammatory block including polypropylene mesh penetrating an ileal loop. Intestinal resection and mechanical isoperistaltic L-L anastomosis is performed. The post-operative period is complicated by cardiorespiratory problems and the patient comes discharged in XVII day. The prosthesis migration after umbilical hernia repair is an event never described in the literature; instead rare cases of migration after inguinal hernia repair are reported. The pathophysiological mechanisms of this complication are not still cleared and that makes necessary a careful technique in the use of the hernia mesh.

KEY WORDS: Mesh migration, Small bowel obstruction, Umbilical hernia repair.

Introduction

Many reports of plug or mesh migration after laparoscopic or open inguinal hernia repair can be found in the literature. The case that we describe regards an intestinal obstruction in a patient undergone a umbilical hernia repair with mesh six years before and it represents the only case described in the literature.

Case report

A 61 year old male patient affected by BPCO and chronic atrial fibrillation is admitted for crampy abdominal pain. He underwent a umbilical hernia repair with mesh and onfalectomy 6 years before.

He complains of no passing faeces nor wind since three days and increasing abdominal pain. The examination shows a diffuse meteoric abdomen painful to deep palpation on all fields with active peristalsis of high timbre and a small swelling in the umbilical region. Rectal exploration reveals absence of faeces in the ampulla. Abdominal X-ray demonstrates the presence of distended ileal loops with water-air levels. The operation performed about three hours after the admission reveals intestinal obstruction, due to an inflammatory block including polypropylene mesh completely penetrating an ileal loop, with huge adhesion to the abdominal wall at about one meter from ileocecal valve. There are no stiches around the mesh. A resection of the ileal loop with surrounding abdominal wall and primary stapled side to side anastomosis is performed (Fig. 1)

The residual parietal defect is repaired by single polypropylene stitches, avoiding use of prosthetic material.





Pervenuto in Redazione Maggio 2006. Accettato per la pubblicazione Luglio 2006.

Per la corrispondenza: Dr. Antonio Di Muria, Piazzale Tecchio 49, 80125 Napoli (e-mail: antoniodimuria@tiscali.it).

During the post operative period cardiorespiratory complications occur and the patient is discharged in XVII day. The histological examination shows: wide areas of necrosis of the intestinal wall, areas of necrosis of the contiguous abdominal wall with asbscess and perforation; fibrosis of the external layers of the gut close to the mesh with inflammatory giant cells and granulomas.

Discussion

Hernia repair with mesh actually represents the most common surgical procedure. Many reports of plug or mesh migration after laparoscopic or open inguinal hernia repair can be found in the literature ¹⁻³. No cases of intestinal obstruction in patients undergone umbilical hernia repair with mesh are described in the literature. The pathophysiological mechanisms of this complication can be ascribed to the chronic inflammatory reaction due to the mesh, that causes progressive erosion of the parietal peritoneum and adhesion of intestinal loops to the abdominal wall; penetration of the mesh into the gut is made easier by the peristalsis. Migration of the foreign body into the intestinal lumen and its elimination can occur under favorable circumstancies; in other cases the mesh can be dragged until the skin ⁴.

An experimental study of retained surgical sponges shows there is increased probability of intestinal invasion as a function of time and recognizes four stages by macroscopic and microscopic pathology: foreign body reaction, secondary infection, mass formation and remodeling ⁵. The absence of evident stitches to fixate the prosthesis could have contributed to its migration. Bowel loop adhesion to the peritoneum could be related to an incorrect procedure in mesh position.

In our case recurrent bowel obstruction and abdominal pain were noted, without progressive anemia, that is common in other cases reported in the literature.

In the residual parietal defect repair we avoided the use of other mesh, because mesh was involved in the observed complication and intestinal contamination was present.

Conclusions

Mesh migration and consequent bowel obstruction is uncommon but possible after hernia repair with mesh. Randomised studies and long-term follow-up are necessary to evaluate the incidence of this complication and the relationship with the prosthetic material or the technical procedures performed. The new shapes of hernia mesh could avoid the insorgence of this complication.

Riassunto

Si descrive un caso di occlusione intestinale dovuto alla migrazione di una mesh. Giunge all'osservazione per occlusione intestinale meccanica un paziente di 61 anni affetto da BPCO e fibrillazione striale cronica. Era stato sottoposto 6 anni prima ad ernioplastica ombelicale con mesh ed onfalectomia. Alla laparotomia si evidenzia un blocco infiammatorio che includeva il Mash in polipropilene che è penetrato in un'ansa ileale. Si è proceduto a resezione intestinale e anastomosi LL isoperistaltica meccanica. Il paziente nel periodo post-operatorio ha sviluppato complicanze cardiorespiratorie ed è stato dimesso in XVII giornata. L'occlusione intestinale da migrazione di protesi dopo ernioplastica ombelicale è un evento mai descritto in letteratura. Il meccanismo fisiopatologico di questa complicanza non è chiaro e rende necessaria una tecnica accurata nell'uso della mash.

References

1) Chuback JA, Singh RS, Sills C, Dick LS: *Small bowel obstruction resulting from mesh plug migration after open inguinal hernia repair.* Surgery, 2000; 127(4): 475-76.

2) Panzironi G, De Vargas Macciucca M, Ricci F, Angelini P, De Cristofaro F: A rare complication caused by prosthetic mesh in inguinal hernioplasty. A case report. Radiol Med, 2000; 100:506-8.

3) Ferrone R, Scarone PC, Natalini G: Late complication of open inguinal hernia repair: small bowel obstruction caused by intraperitoneal mesh migration. Hernia, 2003; 7:161-62.

4) Majeski J: Migration of wire mesh into the intestinal lumen causing an intestinal obstruction 30 years after repair of a ventral hernia. South Med J, 1998; 91:496-98.

5) Wattanasirichaigoon S: *Transmural migration of a reteined surgical sponge into the intestinal lumen: An experimental study.* J Med Assoc Thai, 1996; 79:415-22.