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Case report

Intraperitoneal migrating mesh plug wrongfully taken for right colon cancer: A case report

A. Haddad, D. Bel Haj Yahia *, Y. Chaker, H. Maghrebi, A. Daghfous, M.J. Kacem

Surgery department A, Rabta Hospital, Rue Jbel Lakhdar, La Rabta Jebbari 1007, Tunis, Tunisia
The Faculty of Medicine of Tunis, University of Tunis El Manar, Tunis, Tunisia

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ABSTRACT

Background: The use of mesh has become nowadays a standard for hernia repairs. It allows a tension-free hernioplasty and has shown that it is an effective way to prevent recurrences. But complications have been described. Intraperitoneal migration of mesh plug is an uncommon complication.
Case report: In this paper we report a case of a 57 year old male who has been operated on 12 years ago, he had a mesh plug repair for a ventral incisional hernia. The mesh migrated into the abdominal cavity and it was wrongfully taken for a locally advanced right colon cancer. Colonoscopy was done and biopsies were taken, but the results were not conclusive. He was operated on. We found the mesh that had migrated and eroded the hepatic flexure. There was a granulation tissue that also included some of the small intestine. There was also an abscess in the abdominal wall. He had an en-bloc resection of a part of the abdominal wall, small intestine and right colon.
Conclusion: Mesh hernioplasty is a frequent, simple and effective procedure with a low recurrence rate but it can be associated to serious complications such as mesh migration.

1. Introduction

A common complication in abdominal surgery is ventral incisional hernia especially in midline incisions [1]. Prosthetic hernia repair, has allowed a tension-free treatment of hernias and helped to seriously reduce the recurrence rate [2]. Different types of synthetic mesh can be used. Nevertheless, complications have been reported, such as infection [3], bowel perforation [4],colo-cutaneous fistula [5,6] and migration [7]. In this paper, we report a case of a mesh migration into the abdominal cavity that has been taken for a right colonic malignancy. This work is in line with the SCARE 2020 criteria [8].

2. Case summary

We report the case of a 57 year old male, who consulted his family doctor for a 2 month history of right upper quadrant pain and fever. He also reported an important weight loss and anorexia. Physical exam showed fever, a median incisional hernia, a tender and irregularly shaped mass in the right upper quadrant with local signs of infection (Fig.1).

His medical background included hypertension and diabetes. He had a laparotomy 30 years ago after a road traffic accident. In 2000, he was operated on for bowl obstruction. Then, in 2005, he had prosthetic incisional hernia repair (the details of the intervention were not available). Blood tests showed high white cell count and C-reactive protein. Abdominal ultrasound showed an infiltration of mesenteric fat. The abdominal computed tomography (CT) scan showed aspects of a right colic flexure tumor that invaded abdominal wall, intestine and gallbladder (Fig. 2). Colonoscopy was done two times. It showed a mass in the hepatic flexure. Biopsies were taken but they were not conclusive. They have just shown images of inflammatory tissue. We decided to operate on the patient.

We found an abscess in the abdominal wall and a mesh that had migrated into the abdominal cavity and eroded the colonic wall with an important granulation tissue that included a part of the small intestine (Fig. 3).

We did an en-bloc resection (Figs. 4, 5) of the abdominal wall including the abscess, the right colon and the terminal ileum. We completed with an ileo-colonic end-to-side manual anastomosis. The reconstruction of the abdominal wall wasn't easy. The intervention.

* Corresponding author at: Surgery department A, Rabta Hospital, Rue Jbel Lakhdar, La Rabta Jebbari 1007, Tunis, Tunisia.
E-mail address: dorrabelhajyahia@gmail.com (D.B.H. Yahia).

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Fig. 1. Upper right quadrant mass with local signs of infection.

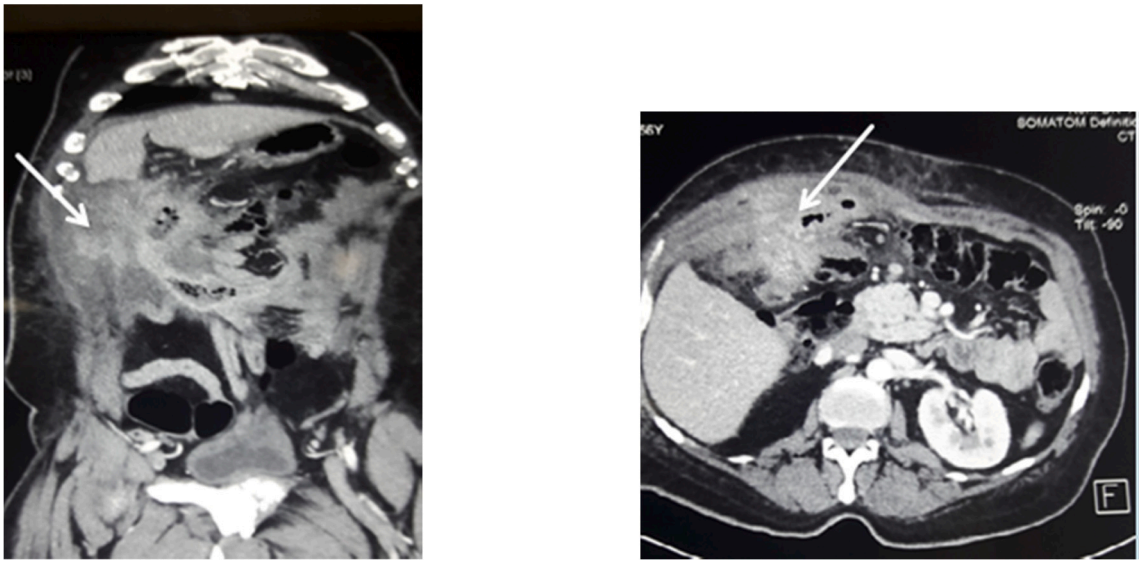

Fig. 2. Frontal (a) and axial (b) computed tomography (CT) scan images showing a locally advanced right colic flexure tumor.

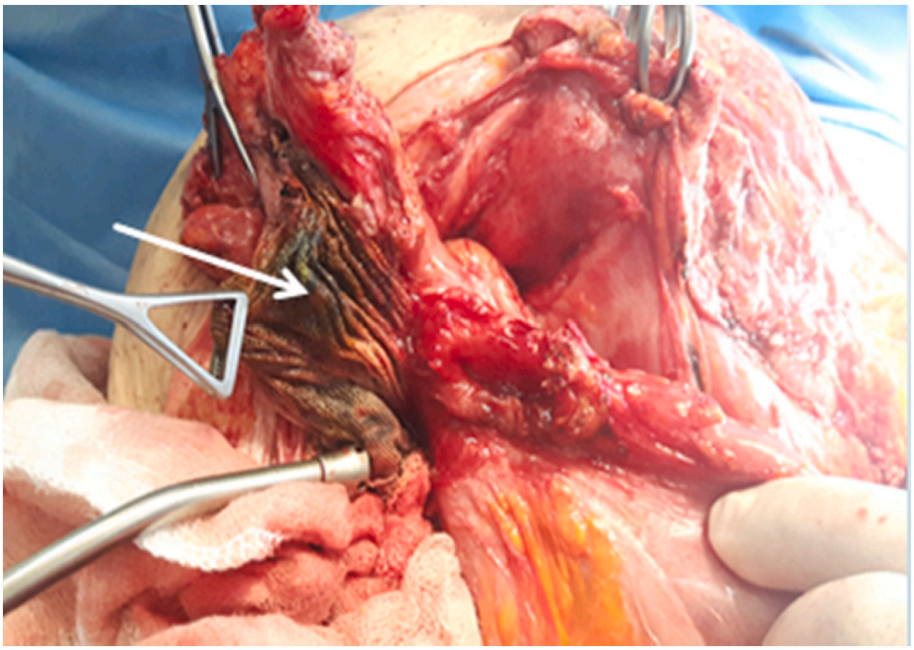

Fig. 3. Migrated mesh seen during surgery.

In the early post-operative period, he developed a wound infection which was healed after 15 days with antibiotics, cleaning and dressing of the wound. The patient was discharged 25 days after surgery.

3. Discussion

A common complication in abdominal surgery is incisional ventral hernia [1]. Its incidence is a lot higher in median incisions than transversal incisions (11% vs. 4.7%; $P = 0.006$) [1]. This complication is also less frequent in laparoscopy comparing to laparotomy. In the systematic review published by Kossler-Ebs and al, incisional hernias were significantly lower in the laparoscopic group (RD -0.06, 95% CI [−0.09, −0.03], $p = 0.0002$) [9]. The use of prosthetic mesh has allowed tension-free treatment of incisional hernias and helped reduce recurrences [10]. However, a lot of complications are being documented. Time to diagnosis may vary from weeks to years. It seems to depend on the implantation site of the mesh, the surgical technique and the distance between the mesh and the peritoneum [11]. One rare complication is intra- peritoneal migration of prosthetic mesh (into the gastro-intestinal or urinary tractus) [7]. Symptoms are not specific. They depend on the site affected. It can be responsible for mechanical bowel obstruction [12], acute abdominal pain due to small bowel perforation [4], chronic anemia and abdominal pain [13]. It could be also taken for a bladder or a colonic malignancy [14,15]. Imaging is not always helpful; it could be inaccurate, non specific. That's why it's important to have this diagnosis in mind. In this report, the migrating mesh has caused a mis-diagnosis, taking it for a locally advanced colonic tumor.

The risk of mesh migration depends on a lot of factors. For some authors the insufficient fixation of the mesh [14] could be responsible for its migration along paths of low resistance [7,14]. Others think that errors of surgical technique such as incorrect placement of mesh, intra-abdominal placement, inadequate fixation and application of a mesh much larger than needed may increase the risk of mesh migration.

4. Conclusion

Using mesh in hernia repair has allowed to significantly reduce recurrences, but it's not a harmless technique. Its complications can be serious. Intraperitoneal migration of the mesh is one dangerous complication. Symptoms and imaging are not specific, that's why the diagnosis should be always kept on mind. Surgery is always necessary.

Ethical approval

We confirm that the patient agrees with publishing this case as a case report.

Patient consent

The patient's consent was obtained before writing the paper.

Author contribution

D.Bel Haj Yahia: research and writing the paper
A.Haddad/H. Maghrebi: writing
Y. Chaker: paper structure and image editing
A. Daghfous/MJ. Kacem: Correction of the paper

Guarantor

Rabta hospital

Declaration of competing interest

None.

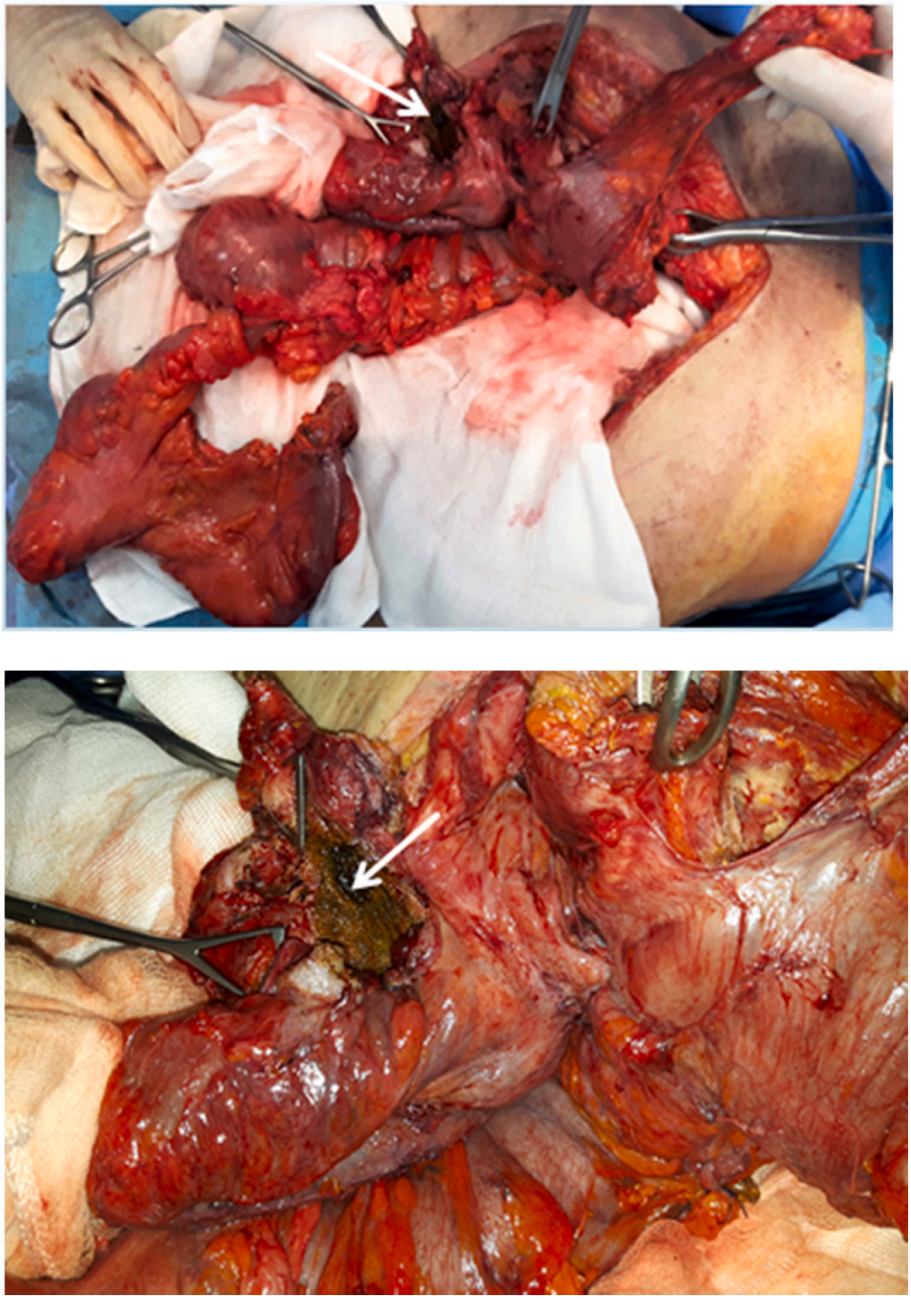

Fig. 4. En-bloc resection of the abdominal wall, the mesh, the terminal ileum and the right colon.

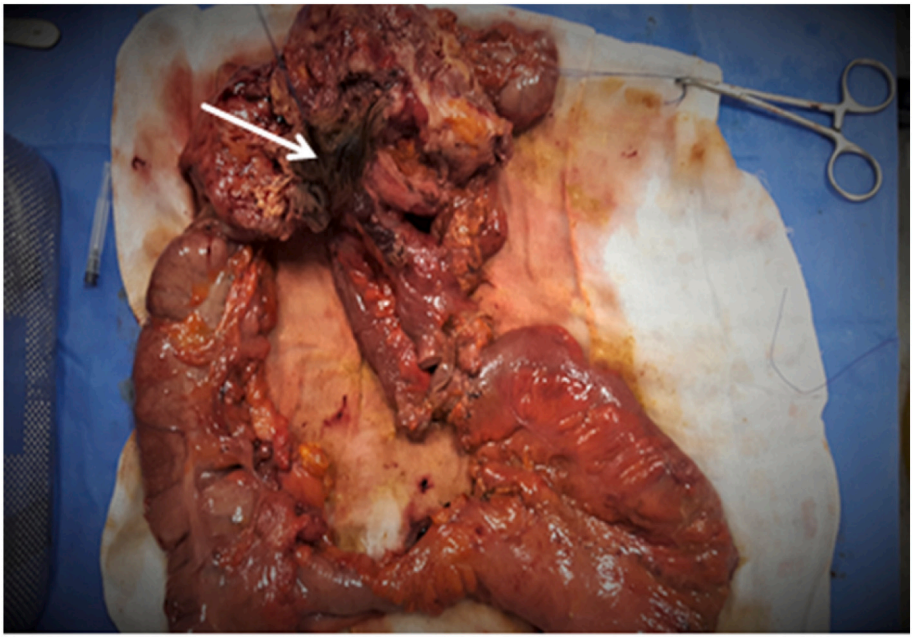

Fig. 5. Specimen of the removed piece.

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