

Exceptional Complication of Abdominal Parietal Surgery: About A Case of Prosthesis Migration in A Hollow Organ

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Abstract

Case Report

The parietal cure of a hernia or an abdominal eventration by synthetic prosthesis is the treatment of common practice. The disinsertion of the prosthesis with its intra-abdominal migration is a late and rare complication, which can lead to an intestinal obstruction or a digestive fistula, with an increased risk of infection which can threaten the vital prognosis. The symptomatology is nonspecific. Often inaccurate radiological diagnosis due to its rarity and ignorance of this complication.

Keywords: Synthetic prosthesis, Migration, Hernia, Eventration.

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INTRODUCTION

The placement of a synthetic prosthesis for parietal repair has become the method of choice for hernia or eventration cures. A rare complication of this type of surgery is the intraperitoneal migration of the prosthesis, after disinsertion of the latter; Fistulisation in a hollow organ is then to be feared: the radiological diagnosis is often overlooked due to the late onset of this complication and ignorance of the patient's history.

OBSERVATION

Mrs F, 69 years old, with no medical history, with a surgical history: caesarean section in 1986 and 1989, cholecystectomy in 2006 by a right subcostal incision, operated in 2010 for strangulated umbilical hernia in the private sector having benefited from treatment with aponeurotic raphy, reoperated in 2017 for strangulated eventration, treated by placement of a retro muscular pre-aponeurotic prosthesis, extra peritoneal.

The patient declared on month 08/2020 an enterocutaneous digestive fistula under the umbilical, with infection of the prosthesis and significant recurrence of the eventration.

She was hospitalized for management of the enterocutaneous fistula. The CT scan (injected) performed shows a fistula at the level of an ileal loop adhering to the abdominal wall. The surgery performed confirms the existence of a digestive fistula between a digestive loop and the abdominal wall as well as the discovery within the intestinal loop of a non-absorbable parietal prosthesis, the prosthesis was removed and resection size of the hail encompassing the two fistulas, with creation of a jejunojejunal anastomosis.



A: Migration of the prosthesis into the lumen of the hollow organ (the grelie loop)



B: The piece of grelic resection carrying the two fistulas

DISCUSSION

The technique of choice for parietal repair of hernias or eventration is that based on the use of a synthetic prosthesis. Indeed, the risk of recurrence is lower in the case of cure by prosthesis than by repair by simple suture (24% to 54% in the case of simple suture versus 3.4% to 9% in the case of prosthesis) [1-6].

Despite the effectiveness of this technique of choice, it nevertheless presents (1.3 to 22.7%) [2, 3, 7, 8], specific complications including late disinsertion of the prosthesis with intra-abdominal migration.

Non-absorbable synthetic prostheses reconstruct the abdominal wall by inducing fibroblastic activity. The placement of a prosthesis leads during the first 3 post-operative days to an acute inflammatory reaction which involves polymorphonuclear cells and macrophages; which are later replaced by fibroblasts (from the tenth postoperative day) which will produce collagen and colonize the prosthesis in four to six weeks.

Late complications of cures by placement of parietal prostheses [3, 7] are prosthesis infection, digestive fistulas, prosthetic migration into the hollow organs, and recurrence of hernia or eventration. These complications are partially related to the physical and chemical properties of the prostheses [9].

The criteria for good quality of a prosthesis are precisely set at:

- Inert chemical product that can cause a significant allergic or inflammatory reaction,
- Quite resistant against the mechanical stresses caused by the mobility of the abdominal wall and the interactions between the different muscle layers,
- Sterilizable, and finally unailing by the environment where it is placed.

An ideal prosthesis is one that generates a weak inflammatory reaction but an intense fibroblastic activity.

Thus, in animals, saturated polyester prostheses are better tolerated than polypropylenes. Polytetrafluoroethylene (PTFE) is too microporous to be completely incorporated into the abdominal wall, and is therefore more at risk of migration (it is mainly used in vascular surgery).

On the contrary, braided prostheses (polypropylene) generate many adhesions and are especially complicated by fistulas.

Among the factors that can cause fistulisation to the viscera is the intraperitoneal implantation site [10, 11], indeed, an intraperitoneal location exposes more to the risk of infection and fistulisation with the viscera. Hence the interest of extra-peritoneal prosthetic insertion, most often in a retro-muscular plane.

Technical errors are mainly behind prosthetic disinsertions, such as mesh of insufficient size or a poorly fixed prosthesis.

Predisposing factors are a deteriorating parietal dissection, postoperative sepsis or hematoma, as well as abdominal hyperpressure related to overweight. They mainly occur between the seventh and fifteenth postoperative days, or later, ranging from several months to several years after surgery. These generally pose a diagnostic problem.

A prosthetic disinsertion is manifested first by a recurrence of eventration, the differential diagnosis arises with a granuloma on scar, parietal endometriosis or a tumor [12].

In cases of disinsertion, the prosthesis most often retracts in the preperitoneal position: we speak of preperitoneal rolling up with a characteristic appearance on CT scan: hyperdense sinuous subcutaneous line. But sometimes, disinsertions are complicated by intraperitoneal migration of the prosthesis with risk of fistulization in a hollow organ [13-16], occurring within a few months (3 months) to several years (up to 10 years) after their installation, as in the reported case (1 year).

Prosthetic disinsertions complicated by migration and fistulisation in a hollow organ are manifested by non-specific symptoms: deterioration in general condition, abdominal or parietal pain, diarrhea or a sub-occlusive syndrome if the prosthesis is fistulised in the tube, gastrointestinal [13-15], or hematuria with repeated urinary tract infections during a bladder fistula (the most common case).

The radiological diagnosis of these prosthesis migrations is also often problematic [16]. In standard radiography, the synthetic prostheses are not visible. On ultrasound they appear in the normal state in the form of a hyperechoic line, discreetly irregular, with a posterior shadow cone [17].

These prostheses measure between 0.44 mm thick for polypropylene and 1 mm thick for PTFE. In the normal state, Crespi [17] considers ultrasound to be more efficient than CT for visualizing these prostheses. On CT, they appear as a thin line isodense to the abdominal muscles for polypropylenes and hyperdense for PTFEs, which explains the diagnostic difficulty [18].

Ultrasound reveals certain complications of this surgery: pre-prosthetic superficial abscess, preperitoneal prosthetic rolling up, hernial recurrence [19]. However, the scanner remains the reference examination in the event of a suspicion of deep abscess, peritonitis, bowel or bowel obstruction or migration with fistulization to a hollow organ.

Knowledge of this last complication and the patient's history should lead the radiologist to evoke this diagnosis on the scanner in front of hyperdense material, sometimes connected to the wall on multiplanar reconstructions.

CONCLUSION

The placement of a parietal prosthesis in the treatment of postoperative eventrations is the most widespread surgical technique currently. The complication rate has become acceptable in addition to the recurrence rate which has decreased thanks to the new synthetic materials.

While the diagnosis of classic early and late complications (infection, band occlusion, etc.) is easy, parietal disinsertion, whether or not it is complicated by a hollow organ fistula, often poses a diagnostic problem, both clinical and radiological. Nevertheless, knowledge of this complication makes it possible to guide the questioning of the patient, which is essential for the diagnosis.

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