Clinical Cases

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Transmural Gastric Migration of Dual-sided PTFE/ePTFEE Mesh after Laparoscopic Surgery for a Recurrent Hiatal Hernia with Dysphagia: Case Report

D. Acín-Gándara[1], C. Miliani-Molina[1], J.A. Carneros-Martín[2], J. Martínez-Piñeiro[1], M. De Vega Irañeta[1], F. Pereira-Pérez[1]

[1]Department of General and Digestive Surgery. Hospital Universitario de Fuenlabrada, Madrid, Spain
[2]Department of Gastroenterology. Hospital Universitario de Fuenlabrada, Madrid, Spain

Rezumat

Migrarea gastrică transmurală a protezei Dual-sided PTFE/ePTFEE după intervenție laparoscopică pentru hernie hiatală recurentă cu disfagie: prezentare de caz

Numeroase studii au demonstrat faptul că utilizarea fundoplicaturii laparoscopice în tratamentul herniei hiatale este fezabilă şi sigură dar totodată poate fi grevată de o rată a recurenței care poate ajunge la 42%. Aplicarea unei plase la nivelul hiatusului reduce numărul de recurențe, dar este asociată cu o serie de complicații specifice. Printre acestea se numără fibroza severă la nivelul hiatusului, eroziunea peretelui intestinal, stenozele esofagiene, migrarea plasei în lumenul tractului gastro-intestinal superior şi perforațiile esofagiene. Prezentarea de caz se referă la eroziunea tardivă cu migrare transmurală gastrică completă a plasei utilizate la protezarea hiatusului esofagian. În asemenea situații pot fi necesare intervenții chirurgicale complexe. În acest caz intervenția chirurgicală a putut fi evitată datorită migrării complete a plasei în lumen. Utilizarea plaselor în chirurgia laparoscopică a herniilor hiatale trebuie să fie foarte selectivă şi să țină cont de experiența operatorului, anatomia hiatală şi simptomatologia pacientului.

Cuvinte cheie: hernie paraesofagiană, disfagie, laparoscopie, chirurgie antireflux, închidere prostetică a defectului hiatal

Abstract

Several series have shown that laparoscopic fundoplication is feasible and safe for the treatment of hiatal hernia, although a high recurrence rate of 42% has been published. The use of mesh repair in these hernias has shown fewer recurrences than primary suture with small number of complications reported. Some of these are severe fibrosis within the hiatus, mesh erosion of the intestinal wall, esophageal strictures, mesh migration into the upper gastrointestinal tract and esophageal perforations. We present a case with late erosion and complete transmural gastric migration of the mesh after surgery. In these cases, the patients may require complex surgical intervention. That was not the case in our patient, who did not require further surgery because the mesh migrated completely. It is therefore advisable to use a mesh very selectively for the laparoscopic repair of hiatal hernias, taking into account the surgeon's experience, the anatomy of the hiatus and the symptoms of the patient.

Key words: paraesophageal hernia, dysphagia, laparoscopic, antireflux surgery, prosthetic hiatal closure

Corresponding author: Débora Acín Gándara, MD, PhD.
Department of Surgery
Hospital Universitario de Fuenlabrada
Avda. De España nº 8. Esc 3
3ºB. Pozuelo de Alarcón. 28224. Madrid, Spain
E-mail: abumessina@hotmail.com
debora.acin@salud.madrid.org

Introduction

Several series have shown that laparoscopic fundoplication

is feasible and safe for the treatment of hiatal hernia, although a high recurrence rate of 42% has been published in the report by Hashemi et al. (1). The use of mesh repair in these hernias has shown fewer recurrences than primary suture (2,3). Some authors recommend their use based on a lower incidence of intrathoracic wrap migration and on the fact that there are only a small number of complications reported. Some of these are severe fibrosis within the hiatus, mesh erosion of the intestinal wall, esophageal strictures, mesh migration into the upper gastrointestinal tract and esophageal perforations (4-8). We present here a case with late erosion and complete transmural gastric migration of the mesh after surgery.

Case report

A 68 year-old woman with a mixed hiatus hernia (Fig. 1) underwent laparoscopic Nissen fundoplication with closure of the hiatal crura with 7x7 cm PTFE mesh three years before. She was symptom-free for 2 years, subsequently presenting dysphagia with solid meals and weight loss. Examination showed recurrent hiatal hernia. She underwent laparoscopic reoperation. We observed a long fibrosis at the esophagogastric junction with retraction of the mesh, a break-down of the crural closure, and part of the fundus in the mediastinum. We opened the fundoplication with EndoGIA, resected the hernia sac and reinforced the crural defect with a tension-free PTFEe/PTFE (Bard Crurasoft™) mesh. She developed fever in the postoperative period related to a left subphrenic collection with contrast leak at the gastric level. She received conservative treatment using nasojejunal enteral nutrition and intravenous antibiotics. Given the persistence of the subphrenic collection, laparoscopic drainage was performed with favorable outcome. At discharge, the patient had satisfactory oral intake with a control CT in which the resolution of the leak and the intra-abdominal collections was observed.

On the first outpatient visits the patient remained asymptomatic, but 6 months later she started again to describe solid meal dysphagia. An esophagogastric barium test was

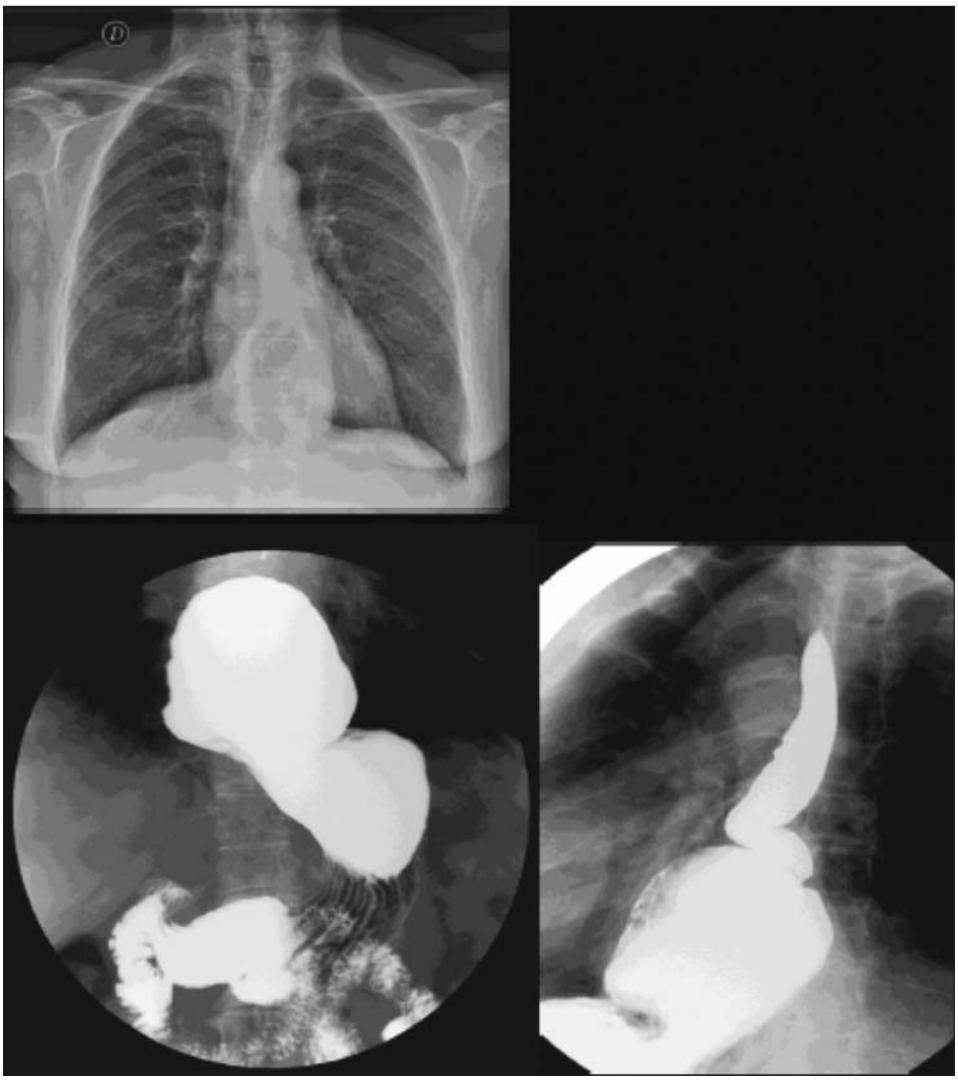

Figure 1. *Chest X-Ray with oral contrast reveals a large type III hiatal hernia*

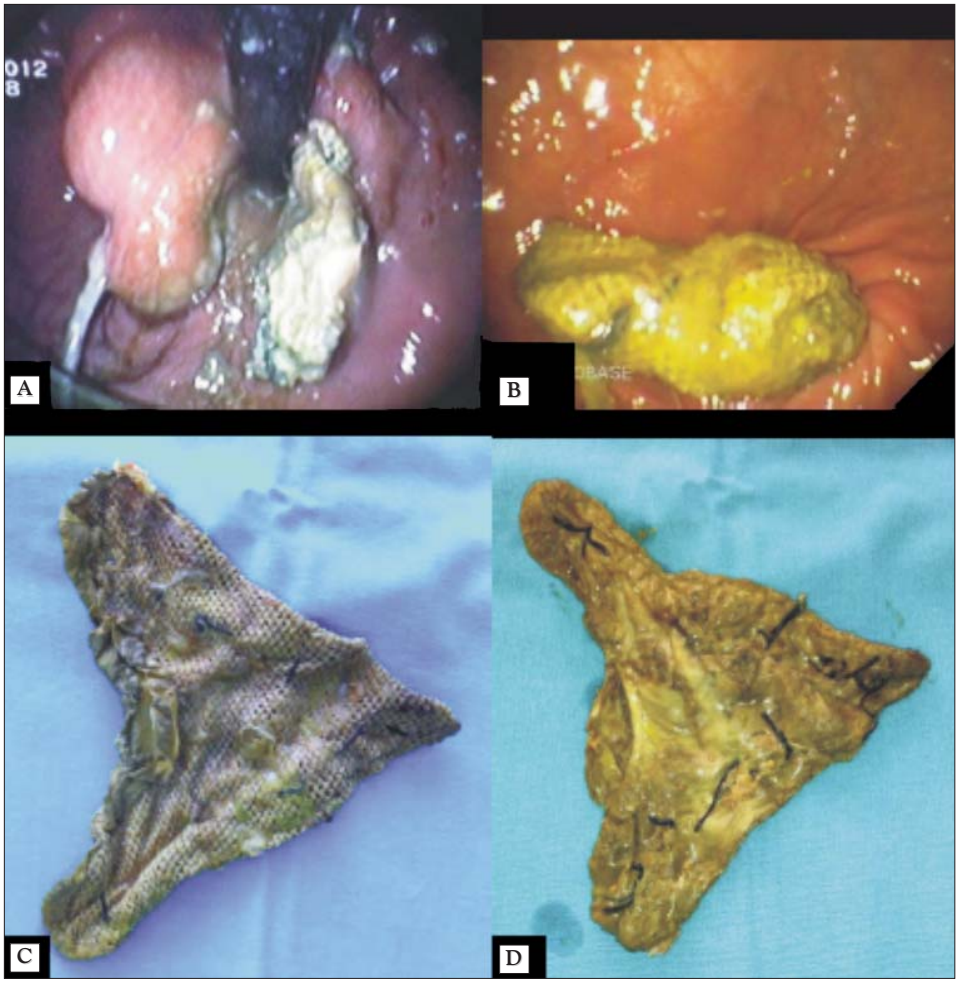

Figure 2. ***(A)*** *Endoscopy shows part of the mesh located in the esophagogastric junction, across the wall.* ***(B)*** *Endoscopy (one month later) shows the complete gastric migration of the mesh into the stomach, free in the gastric lumen.* ***(C,D)*** *The mesh was removed endoscopically*

performed that did not show hernia recurrence or stenosis. However at endoscopy a stenosis at esophagogastric junction level was observed and required 3 sequential endoscopic dilatations ilatation over several months. Soon afterward a control endoscopy showed part of the mesh inside the esophagogastric junction, but it was not possible to remove it (Fig. 2A). No complications occurred after that endoscopy. One month later a new endoscopy was performed, and there was a complete transmural gastric migration of the mesh that was noticed free in the gastric lumen, being easily removed endoscopically (Fig. 2 B,C,D). A year later the patient's condition has improved, although she has occasional dysphagia to solids, which has required a new endoscopic dilatation.

Discussion

The incidence of complications associated with the use of meshes at the hiatus is less than 2% (9), although no long-term results have been reported. Those that have been reported include fibrosis within the hiatus, mesh erosion of the intestinal wall, esophageal strictures, mesh migration into the upper gastrointestinal tract and esophageal perforations (4-8). These complications can result in severe morbidity for the patient and may require complex surgical intervention. That was not the case in our patient, in which the mesh migrated completely and did not require further surgery. Complete transmural gastric migrations of the mesh have been rarely cited in the literature (6). It is therefore advisable to use a mesh very selectively for the laparoscopic repair of hiatal hernias, taking into account the surgeon's experience, the anatomy of the hiatus (size of the defect, diaphragmatic weakness, tension on the closure, etc.) and the symptoms of the patient (chronic cough, constipation, etc). Some authorities recommend biological mesh as an alternative (4,5), in order to decrease this kind of complications.

Conclusion

This case shows some of the possible complications of hiatal mesh use, like dysphagia, fibrosis, stenosis at the esophagogastric junction, and complete transmural gastric migration of the mesh. All of these can result in severe morbidity for the patient and sometimes can require complex surgical intervention. It is therefore advisable to use a mesh very selectively for the laparoscopic repair of hiatal hernias, taking into account the surgeon's experience, the anatomy of the hiatus and the symptoms of the patient.

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