Chapter 8
Case on Herniation of the Stomach Into the Thorax After Laparoscopic Repair of a Type 3 Paraesophageal Hernia

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Keywords Laparoscopic correction • Herniation • Paraesophageal hernia

Diagnosis and Indication for Surgery

A 65-year-old male presented at our outpatient clinic with progressive shortness of breath. Computed tomography of his chest demonstrated a type 3 paraesophageal hernia (Fig. 8.1a, b). Besides an umbilical hernia and an appendectomy and subsequent surgical repair of a cicatricial hernia at the site of appendectomy, he did not undergo previous abdominal surgery. His body mass index was 31 (186 cm, 107 kg).

Operation

At surgery, the completely intrathoracic stomach was laparoscopically repositioned into the abdomen. Hereafter, a tension-free cruraplasty could be performed with non-resorbable sutures, without the use of a mesh. The procedure was completed by a Toupet 270 degrees fundoplication.

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M.A. Cuesta, H.J. Bonjer (eds.), *Case Studies of Postoperative Complications after Digestive Surgery*, DOI 10.1007/978-3-319-01613-9_8,

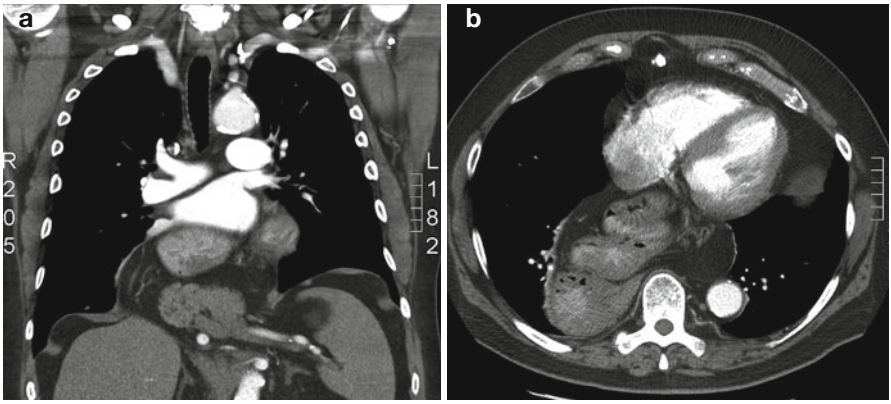

Fig. 8.1 (**a**, **b**) CT scan (sagital and transverse images) demonstrating a diaphragmatic hernia with an intrathoracic stomach and pancreas

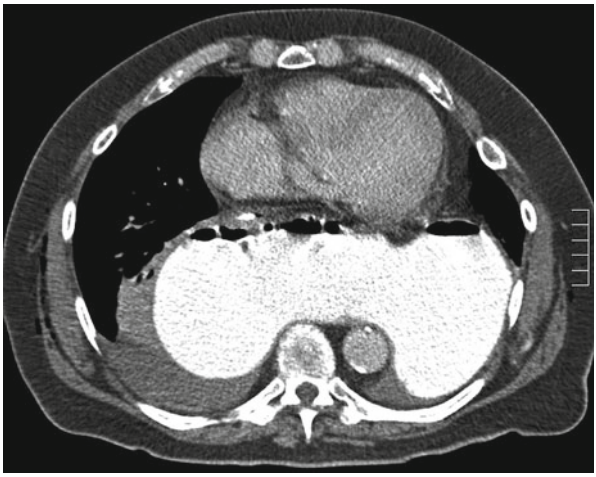

Fig. 8.2 CT scan on the third postoperative day, demonstrating re-herniation of the stomach into the thorax

Postoperative Course: Identification and Treatment of the Complication

Initially, recovery was uneventful and patient started on an oral diet at the first postoperative day. On the third postoperative day, his heart- and breathing frequency increased and his temperature went up to 38.5 °C. A CT scan demonstrated re-herniation of a huge dilated stomach into the thorax (Fig. 8.2) on which the patient was reoperated. In the short waiting time for surgery, the clinical condition of the patient deteriorated with a short period of cardiopulmonary resuscitation,

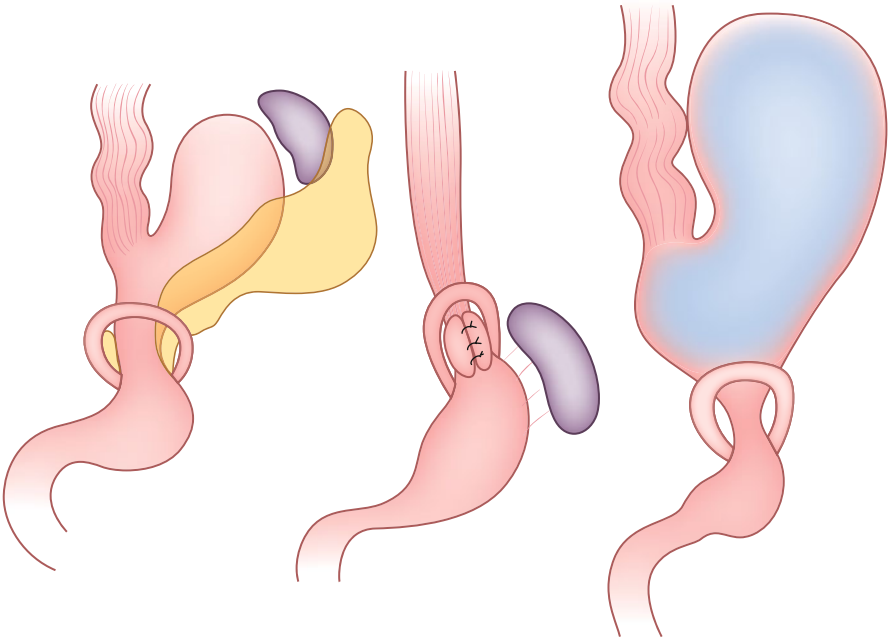

Illustration 8.1 Re-herniation of stomach after laparoscopic paraesophageal hernia repair. Acute operation by laparotomy, reposition of the stomach, and fixation

necessitating mechanical ventilation and hemodynamic support. Because of his deteriorated condition, an emergency laparotomy was performed.

At laparotomy, the stomach was found to have herniated through the 2–3 cm opening of an intact cruraplasty (Illustration 8.1). An important gastric dilatation of the strangulated stomach caused compression of lungs and heart, impairing cardiac inflow that caused the cardiopulmonary arrest. The stomach was opened and its contents immediately suctioned after which the clinical condition of the patient improved dramatically. The stomach could be repositioned into the abdomen after breakdown of the cruraplasty. It was found to be partly necrotic and damaged, necessitating resection of a part of the greater curvature.

The hiatus was reapproximated with non-resorbable sutures and a mesh. A fundoplication was not performed as the major part of the gastric fundus had been resected.

After surgery, the patient was admitted to the intensive care unit and needed hemodynamic and ventilatory support for another day. Further recovery was uneventful and the patient left the hospital on a normal diet 12 days after the laparotomy.

Discussion

This case demonstrates the important consequences of a re-herniation of the contents of a paraesophageal hernia after operation. A dehiscence of the hiatoplasty creates a small hole in the hiatus and in the event of a different pressure between abdomen (positive pressure) and thorax (negative inspiratory pressure) may cause acute herniation of the stomach with posterior strangulation and necrosis of the stomach.

Furthermore, the entrapment of the stomach, with gastric dilatation, will cause impairment of the inflow into the right atrium with cardiopulmonary instability and hypotension and cardiac arrest as a result. The mechanical situation may be compared to a pericard tamponade.

The lesson is that once diagnosis has been established, there is no time to wait. Very rapid surgical action is necessary in a clinically very quickly deteriorating patient. After fast opening and drainage of gastric contents, the hemodynamic situation of the patient will have dramatically improved and further resection and reconstruction can be performed. Prevention will include an adequate operative technique including resection of the sac, approximation of the hiatus and eventually gastropexy. The use of a mesh remains controversial and should only be used in the minority of cases in which the hiatus can not be approximated [1, 2].

References

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