Chapter 9
Case on Dysphagia After Laparoscopic Nissen Fundoplication

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First Patient

Diagnosis and Indication for Surgery: Identification and Treatment of the Complication

A 47-year-old female patient was referred to our outpatient clinic for a second opinion due to persistent dysphagia incurred 4 months after a laparoscopic Nissen fundoplication. She could not pass bland or solid food and was fed enteral through a thin nasogastric tube in the duodenum. In the past she had undergone a laparoscopic sacrocolpopexy because of rectal prolapse. Indication for the fundoplication was a therapy resistant gastro-esophageal reflux disease (proton pump inhibitors).

The patient's condition was reasonably good, her weight was 64 kg (BMI of 25) and there were no other complaints such as pain, reflux esophagitis, or diarrhea. Moreover, her mental condition was good.

Her complaints were assessed by means of an X-swallow photo with marshmallows, esophagoscopy, and esophageal manometry. The swallow photo showed an incomplete passage to the stomach (Fig. 9.1a, b), and the manometry showed normal contractions of the esophageal body with a high and incomplete

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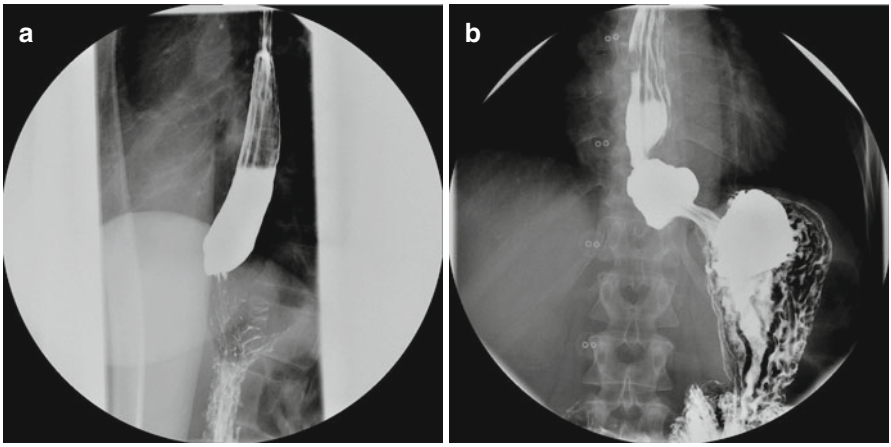

Fig. 9.1 (**a**, **b**) Swallow X-ray after Nissen fundoplication showing stenosis and telescopage of the esophagogastric junction

relaxation of the lower esophageal sphincter (LES) with a high pressure of 20 mmHg. On the esophagoscopy—distal of the Z-line—some gastric folds were visible before the wrap, indicating a misplaced wrap during the initial operation or some kind of herniation of the gastric fundus through the fundoplication.

It was clear that the previous fundoplication was the cause of the dysphagia and that motor dysfunction of the esophagus could be ruled out. A redo-procedure was indicated; to dismantle the 360° fundoplication, correct the position of the wrap, and convert the fundoplication in partial, Toupet like, 270° fundoplication.

Operation

This patient subsequently underwent laparoscopy and that showed a misplaced former fundoplication, created distally on the stomach. After undoing the wrap, a 270° fundoplication was performed at the correct place around the distal esophagus.

Postoperative Course

Postoperatively, the patient started with a bland diet at the second day. From then on, she gained weight and now is on a normal diet. During the last outpatient clinic visit, the patient again experienced reflux symptoms, the esophagoscopy showing reflux esophagitis. Medication with proton pump inhibitors has been initiated again with partial success.

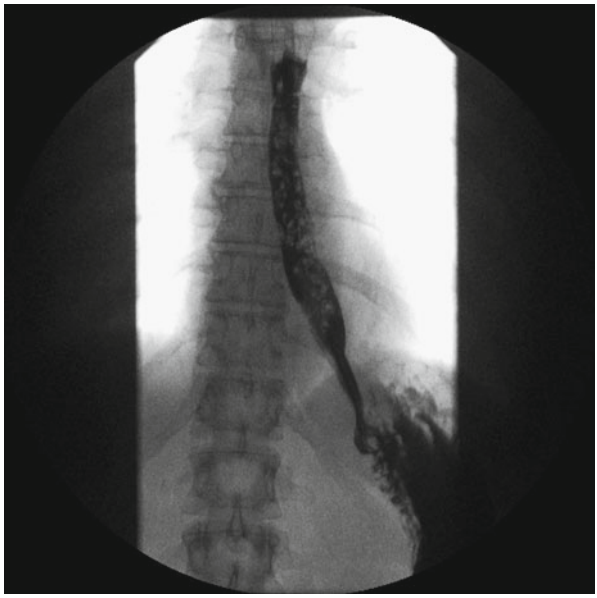

Fig. 9.2 Swallow X-ray showing no esophageal dilatation, but the passage of marshmallows is impaired

Second Patient

A 50-female-patient underwent a laparoscopic Nissen fundoplication because of a therapy-resistant reflux esophagitis. Previous to operation, the manometry showed insufficient contractions of the body of the esophagus with low pressures at the LES. Postoperative dysphagia was so important that patient had to be fed by a duodenal feeding tube. Swallow X-ray with marshmallows and manometry showed slow passage and almost no contractions of the esophagus (Fig. 9.2). A new operation was performed to take down the fundoplication showing no mechanical problems for the passage. Postoperatively, patient did not improve and continued with the enteral feeding and insufficient oral feeding. After many talks with patient and family, it was considered that the only surgical alternative was to perform a Roux-en-Y reconstruction with a small gastric pouch (Fig. 9.3). The operation was performed without complications, but after a long postoperative period of time in which all oral feeding possibilities have been tried and failed, a jejunostomy tube for feeding was definitively given in order to keep her weight stable. After 2 years, she is still having passage problems and oral feeding is not adequate. She has accepted the situation.

Discussion

Dysphagia is a normal early complaint after Nissen fundoplication, but will disappear after six weeks in the majority of patients. It will persist however in 5–10 % of patients. The most frequent complications are migration of the wrap, or wrap

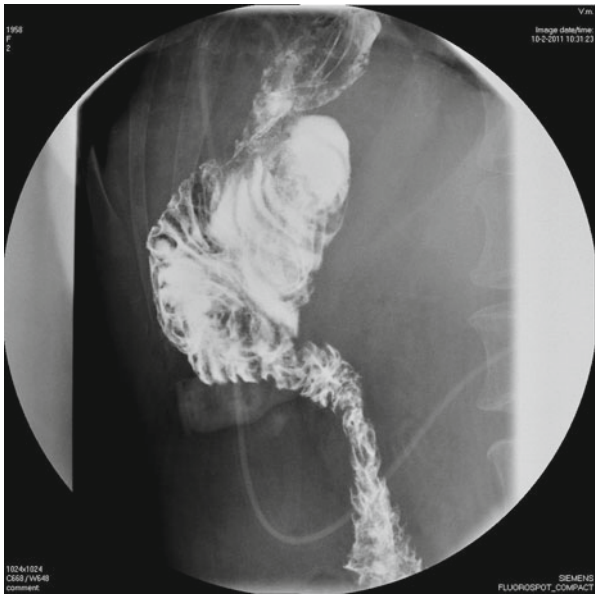

Fig. 9.3 Swallow X-ray showing the gastric pouch with the Roux-en-Y anastomosis

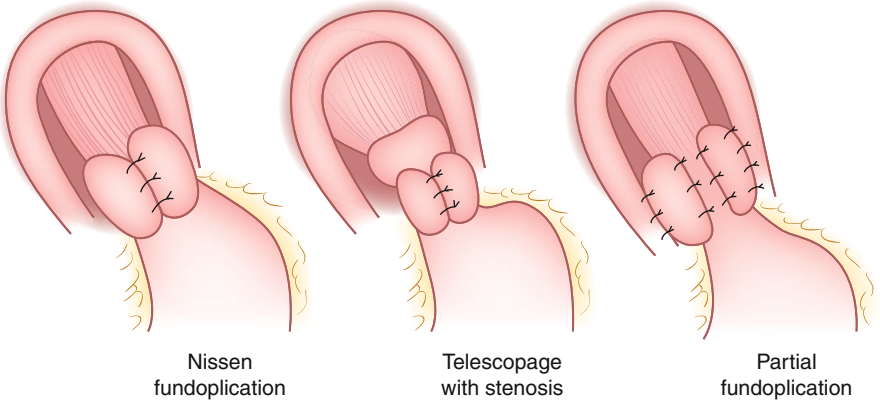

Illustration 9.1 Mid- and long-term postoperative dysphagia after fundoplication is a difficult problem to solve. If a mechanical problem is found, like a telescopage of esophagogastric junction, a reoperation should be performed. Switch to a partial fundoplication was performed in the first patient with normal manometry. If after different operations the patient cannot swallow and no mechanical obstruction can be found, conservative treatment and supplemental feeding should be given

fixed in the wrong place, like around the fundus; too tight fundoplication, or telescoping of the esophagogastric junction through the wrap; and torsion (Illustration 9.1). Another important cause is the postoperative dysphagia in those patients with esophageal contraction problems. The lesson of the first case is that the fundoplication should always be placed at the correct position around the distal esophagus.

Therefore, dissection of the distal esophagus is mandatory and at least 5 cm of distal esophagus should be placed intraabdominally. A partial—Toupet—fundoplication should have been performed, since postoperative dysphagia is significantly higher after Nissen fundoplication as compared to Toupet fundoplication [1], less reoperation rate and less belching problems. All grades of dysphagia are associated with an impaired quality of life. A wrap positioned in the wrong place or after telescoping of the esophagogastric junction will cause postoperative dysphagia and will not recover with conservative management or attempts of dilatations. A swallow X-ray is important to identify the problem. Correction will be done by relaparoscopy [2] or by laparotomy. Besides, questions will arise at reoperation whether to dismantle the fundoplication only or to switch the Nissen into a partial fundoplication. In our opinion, if the manometry of the body of the esophagus is normal, then a partial fundoplication will be the correct solution. If the manometry is not normal, no fundoplication should be performed, like in the second patient. Interesting is what to do with a patient with therapy-resistant esophagitis having abnormal esophageal contractions. Booth et al. performed a randomized trial [3] comparing whether Nissen or partial Toupet fundoplication would be preferable and whether preoperative esophageal manometry should be used to determine the degree of fundoplication performed. Preoperative esophageal manometry was used to stratify 127 patients with established gastro-esophageal reflux disease into effective (75 patients) and ineffective (52 patients) esophageal motility groups. Patients in each group were randomized to Nissen (64 patients) or Toupet (63 patients) fundoplication. Dysphagia of any degree (27 % versus 9 %); and chest pain on eating (22 % versus 5 %) were more prevalent at 1 year in the Nissen group, but there were no differences in postoperative symptoms between the effective and ineffective motility. They found that there is no reason to tailor the degree of fundoplication to preoperative esophageal manometry groups. No differences between partial and total fundoplication in impaired esophageal manometry is also found by others [4, 5]. In spite of this, there are a group of patients who are considered cripples after fundoplication and redo-procedures. Questions arise: (1) What is the cause of this problem, like in our second patient? and (2) Does surgery have a therapeutic value? Answering the first question is probably a combination of manometric problems, gastric emptying, and anatomical problems. Also, the role of vagal nerve(s) lesion may be important. Concerning the second question, Makris et al. studied the safety and efficacy of Roux-en-Y reconstruction, esophagojejunostomy (EJ), or gastrojejunostomy (GJ), for failed fundoplications [6]. Fourteen (64 %) patients had one, six (27 %) patients had two, and two (9 %) patients had three previous antireflux procedures. At a mean follow-up of 23 months, the average dysphagia score was 0.7 (range 0–2). The mean postoperative BMI was 25.4 compared to a preoperative BMI of 31.They concluded that RNY reconstruction with GJ or EJ for failed antireflux procedures may be considered a safe and valid surgical option in those difficult situations where a redo fundoplication is either non-feasible or expected to fail. Moreover, if after all these measures, the patient is still incapacitated to pass enough food orally, an alternative for supplementary feeding like a PEG should be done.

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