



Endoscopic Removal of Migrated Nissen Fundoplication Mesh

Migrasyon Olan Nissen Fundoplikasyon Meshinin Endoskopik Çıkarılması


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ABSTRACT

Laparoscopic Nissen fundoplication is known to be a safe and feasible method in the treatment of hiatal hernias. However, a recurrence rate of 42% has been reported. Using mesh repair in patients undergoing Nissen fundoplication has shown fewer recurrence rates than the primary suture, even though there have been few complications reported. Some complications that may occur with mesh placement are; severe fibrosis, esophageal strictures, esophageal perforations, mesh migration to the upper gastrointestinal tract, and mesh erosion in the intestinal wall, etc. In this report, the migration of the leathery esophagus developed after about 11 years was presented. In such cases, patients may have several surgical options. Among these options, the mesh was completely removed endoscopically. No further surgery was required. In conclusion, it is recommended to use a very selective mesh in the laparoscopic repair of the hiatal hernias, considering the surgeon's experience, hiatus anatomy, and patient's symptoms.

Keywords: Nissen fundoplication; mesh migration; endoscopic removal.

ÖZ

Laparoskopik Nissen fundoplikasyonunun hiatal hernilerin tedavisi için güvenli ve uygulanabilir bir yöntem olduğu bilinmektedir. Bununla birlikte, %42 gibi bir nüks oranı da bildirilmiştir. Nissen fundoplikasyonu yapılan hastalarda meş onarımının kullanılması, bildirilen birkaç komplikasyon olmuş olsa bile, primer sütüre göre daha az nüks göstermiştir. Meş konulmasıyla oluşabilecek bazı komplikasyonlar şunlardır; şiddetli fibrozis, özofagus darlıkları, özofagus perforasyonları, barsak duvarında meş erozyonu ve üst gastrointestinal sisteme meş migrasyonu, vb. Bu raporda, yaklaşık 11 yıl sonra gelişen meşin özofagusa migrasyonu sunulmuştur. Bu gibi durumlarda, hastalarda birkaç cerrahi seçenek bulunabilir. Bu seçeneklerin arasından, endoskopik olarak meş tamamen yerinden çıkarıldı. İleri cerrahiye ihtiyaç duyulmadı. Sonuç olarak, hiatal hernilerin laparoskopik onarımı için cerrahın deneyimi, hiatus anatomisi ve hastanın semptomları da dikkate alınarak çok seçici bir meş kullanılması önerilir.

Anahtar kelimeler: Nissen fundoplikasyonu; mesh migrasyonu; endoskopik çıkarma.

INTRODUCTION

Open and laparoscopic Nissen fundoplication surgeries are commonly performed for hiatus hernias (1-3). However, high recurrence rates have been reported after these operations (2,4). Therefore, to reduce recurrence rates, recurrences were reduced by using mesh after cruroraphy. Although there are mesh-related complications, recurrences have decreased significantly with the use of mesh (1,4,5). Complications related to mesh include severe fibrosis, erosion of the esophageal wall and mesh migration, esophageal strictures and related swallowing difficulties, esophagus and stomach perforation, etc. (1-3). When complications develop in patients, the procedure is performed according to the complication (3,5).

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Sorumlu Yazar

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This case report presented a patient with the complete transmural migration of the mesh and the surgical management of the case.

CASE REPORT

A 57-year-old female patient presented to the hospital with abdominal pain, dysphagia, and dyspeptic complaints, who had undergone laparoscopic Nissen fundoplication with polytetrafluoroethylene dual mesh

due to gastroesophageal reflux disease 11 years ago. The patient's complaints have occurred in the last 1 year and have not had any complaints for 10 years. The patient had dysphagia and dyspeptic complaints due to partial gastroesophageal occlusion due to mesh compression. An upper gastrointestinal endoscopy was performed on the patient. In the endoscopy, it was observed that most of the mesh migrated in the cardia part of the stomach (Figure 1).

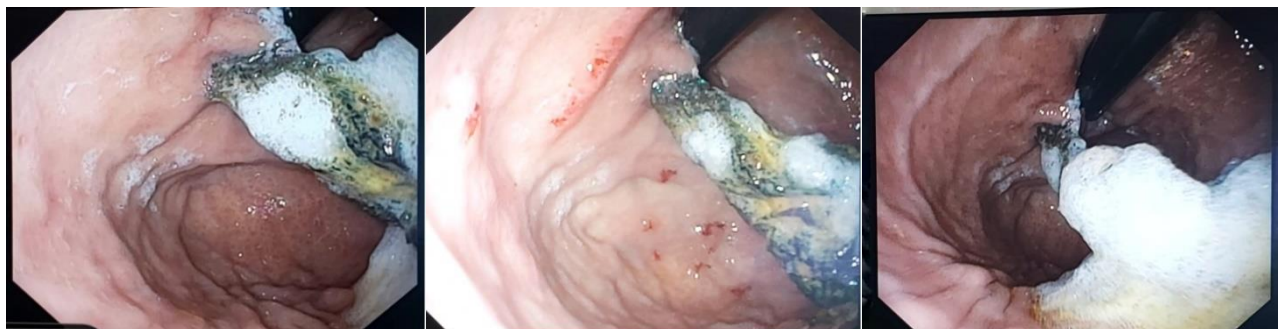


Figure 1. Endoscopic images of the surgical mesh migrated farther into the gastric lumen

The mesh was pulled into the stomach (Figure 2) and taken out endoscopically (Figure 3). Mesh removed an endoscopic grasping forceps (Olympus, FG-25C-1) using a standard adult upper endoscope (GIF-Q180; Olympus). The mesh out of the stomach was measured at about 3 cm (Figure 4).

The patient was hospitalized at the general surgery service. The esophageal wall was inspected again after the endoscopic extraction and we saw that there was no other pathology except some superficial ulcerated areas.

The patient was observed at the hospital for 24 hours in terms of the risk of developing an unexpected complication. Oral intake was stopped and parenteral treatment was started. No complications developed, and any further surgery was not required. The patients was discharged after 5 days.



Figure 3. Endoscopic image revealing a mobile foreign body corresponding to the migrated surgical mesh (more distally) and the stent (more proximally)

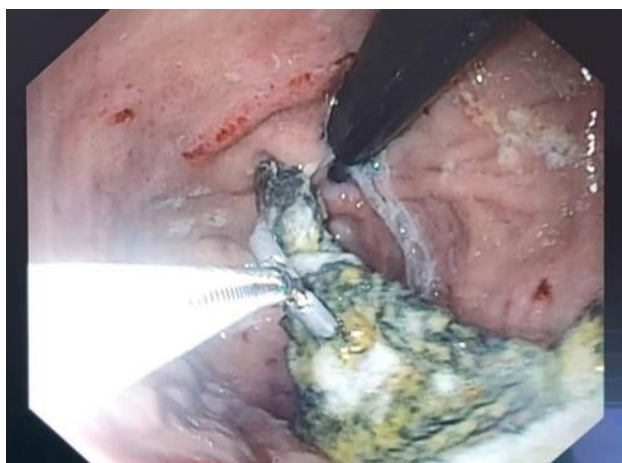


Figure 2. Endoscopic image of the surgical mesh grasping with stent removal forceps



Figure 4. The removed surgical mesh

DISCUSSION

The use of mesh reduces recurrences from 40% to 2% in patients who have undergone open or laparoscopic Nissen fundoplication and crurography (2,4). Long-term complications are scarce (6). However, the use of mesh also brings some complications. Among these complications, stenosis, and difficulty in swallowing due to severe fibrosis, perforation, and mesh migration due to mesh erosion, abscess, and fistula formation are the most important (2,5,7). Goldschmiedt et al. (8) reported mesh-related esophageal perforation in 1992. Serious clinical conditions reported to occur in these patients.

Our patient had abdominal pain, dysphagia, and dyspeptic complaints before the mesh was removed, and no complications developed after the mesh was removed. In our patient, in whom the mesh completely migrated, endoscopic removal was achieved and any further surgery was not required. Transmural mesh migration to the posterior esophageal wall developed and was healed by fibrosis, and perforation did not occur. When the mesh was removed, it was observed that there was no injury to the serosal and mucosal wall of the esophagus, and it was completely free. In the endoscopic examination, no fundoplication was observed in the fundus. The clinic improved very quickly.

Full thickness migration of the mesh to the stomach wall enabled diagnosis and removal of the mesh by upper gastrointestinal endoscopy (4,9). It has been reported in the literature that very few mesh migrations exceed full thickness (3,10). In our case, full-thickness migration enabled the removal of the mesh with the help of upper gastrointestinal endoscopy. In order to reduce mesh reactions, some authors have suggested alternative methods such as the use of biological mesh (9).

Complete transmural gastric migrations of the mesh were rarely reported (2). Some authors recommend the biological mesh as an alternative (6), to decrease these kinds of complications.

The use of mesh in open or laparoscopic hiatal hernia repair significantly reduces recurrences. Patients should be informed about the development of complications after operations performed with mesh. In patients with mesh migration, in case of full-thickness migration of the mesh, the mesh can be removed by upper gastrointestinal endoscopy.

CONCLUSION

Some of the complications related to mesh use may be seen as in this case, like fibrosis, dysphagia, stenosis at the esophagogastric junction, or complete transmural gastric migration of the mesh. These complications sometimes can be life-threatening, can require complex surgical intervention, and may result in severe morbidity for the patient. For this reason, predicting possible complications is important. It is recommended to use a very selective mesh and to have an experienced surgeon for laparoscopic repair of hiatal hernias, considering the hiatus anatomy and the patient's symptoms.

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