LARGE DIAPHRAGMATIC HERNIA SUBJECT TO SUCCESSFUL RECONSTRUCTION – CASE REPORT

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The study presented a case of a large left-sided diaphragmatic hernia treated by means of successful phrenic reconstruction. The above-mentioned are very challenging considering general surgery, although reluctantly supplied in General Surgery Departments.

Key words: diaphragmatic hernia, reconstruction of the diaphragm, Nissen’s fundoplication

Large hiatal and diaphragmatic hernias are acquired defects of the diaphragm with gastroesophageal junction translocation, or in many cases translocation of the stomach with or without abdominal cavity organs. Hiatal hernias are also subject to complication. Surgical treatment is recommended in case of hiatal hernias type II, III, and IV (1). The above-mentioned are subject to high risk of recurrence (between 9% and 44%) (2, 3). Recurrences are often observed in the form of phrenic hernias. In such cases the diaphragm may be repaired using several mesh types. The above-mentioned may be either synthetic or biological. The treatment of choice is laparoscopic Nissen’s fundoplication, although in case of very large hiatal and phrenic hernias, fundoplication preceded by laparotomy seems to be a better solution.

CASE REPORT

A 79-year old male patient was admitted to the Department of General and Endocrinological Surgery on February 6, 2012 for surgery of recurrent, left-sided phrenic hernia (after Nissen’s operation). The patient complained of the following symptoms: difficulties in breathing and dysphagia. The patient mentioned that he underwent Nissen’s fundoplication in 1987. Concomitant diseases were as follows: stable ischemic heart disease, COPD, benign prostatic hypertrophy. Prior to hospitalization abdominal CT and gastroscopy were performed. Abdominal CT demonstrated left-sided phrenic hernia (fig. 1). The patient was qualified for surgery, which was performed on February 7, 2012.

The peritoneal cavity was opened by means of the upper median incision. Intestinal adhesions were observed. After their release the phrenic hernial ring was visualized. On the left side of the diaphragm, posteriorly, the hernial ring was observed, 10 x 10 cm in size. The hernial sac was ingrown into the mediastinum comprising the stomach, omentum, transverse colon, part of the small bowel, and pancreatic tail. The hernial sac content was released from the adhesions and emptied into the peritoneal cavity, and then excised. A drain was placed into the pleural cavity through the 6-th intercostal space (posterior axillary line). The hiatal ring was closed by means of PHYSIOMESH 15x20 cm to the left phrenic lobe using a non-absorbable Prolene „0” suture. Nissen’s fundoplication was performed. The peritoneal cavity was subject to lavage. A latex drain was placed in the peritoneal cavity, as well as a stomach tube. Surgery was termi-
nated by means of layered sutures of the integument. Due to risk of respiratory failure the patient was directly transferred to the ICU. The patient remained under analgesedation, mechanical ventilation, and received wide spectrum antibiotics. Additionally, treatment consisted in the administration of the following: proton pump inhibitors, fluid therapy, parenteral nutrition, antiocoagulation and neuroprotective drugs, B2 bronchodilators, mucolytics, water-electrolyte and albumin insufficiency supplementation. On the third postoperative day prokinetic drugs were introduced and fluid supplementation was performed by means of the stomach tube. After improvement of the patients’ general condition he was extubated and transferred to the Department of General and Oncological Surgery, on February 24, 2012. The patient was discharged from the hospital on March 13, 2012 in good general condition with recommendation for further outpatient follow-up.

The next hospitalization was between May 21-24, 2012. The patient had the following performed: abdominal ultrasound, gastroscopy, esophageal contrast study, and X-ray of the cervical spine. Normal gastrointestinal passage and insignificant hiatal ring inflammation were observed. The ultrasound and X-ray showed a higher left-sided position of the diaphragm. The patient was subsequently hospitalized between June 1-6, 2012, due to fever. The chest X-ray showed signs of left-sided fluid presence and right-sided pneumonia. Gastroscopy (04.06.2012) showed prepyloric erosions.

Antibiotics were administered obtaining improvement in the patients’ general condition and temperature normalization. The patient was discharged from the hospital with recommendations for further follow-up. At the beginning of September the patient complained of fever and general weakness. Imaging examinations showed the presence of a suprphrenic abscess.

On September 11, 2012 the patient was subject to abscess drainage with placement of a drain by means of trocar laparoscopy through the 7-th intercostal space (posterior axillary line). The material was sent for bacteriological examination. Targeted antibiotic therapy was implemented obtaining improvement of the patients’ general condition. The patient was discharged from the hospital for further outpatient control. The final emergency hospitalization was between November 14-23, 2012, due to hectic fever. During the hospitalization abdominal and chest contrast CT were performed, which showed the presence of a left-sided, thick-walled fluid compartment. The inferior wall of the fluid compartment and infiltrating lesions merged with the tail of the pancreas. During hospitalization symptoms regressed after treatment and the patient was discharged with recommendations for further follow-up. Currently, the patient does not require surgical intervention. The patients’ comfort of life significantly improved after the above-mentioned surgery.

**DISCUSSION**

Hernias are amongst the most common diseases requiring surgical intervention in surgery departments. They are usually associated with the translocation of the gastroesophageal junction (5). Many randomized trials presented the superiority of surgical manage-
ment in case of GERD (6, 7, 8). Due to the character of phrenic hernias the above-mentioned are most often treated in Thoracoscopic Departments.

The study presented a case of a patient with a large left-sided phrenic hernia. Left-sided phrenic hernias represent 80% of all diaphragmatic hernias (9, 10).

The method of choice in case of such a large hernia consists in mesh suturing (9, 10). Therapeutic success was obtained. The presented case is evidence that even such large hernias may be subject to effective surgical management. Based on our observations many surgical centers are afraid to perform such operations. Most often, due to lack of experience and economical reasons (high mesh cost). Due to the high risk of hernia recurrence (9-44%), proper health care seems essential, especially after Nissen’s surgery. However, surgery using mesh show a lower recurrence rate (0-24%) (8, 11). Thus far, our center has not experienced hernia recurrence. Prevention and early detection of hiatal hernias is very important, since the less advanced the hiatal hernia the better the chances for successful recovery. It is important to raise awareness amongst patients about the surgical possibilities in case of hiatal (laparoscopy a standard) and phrenic hernias. Currently, many examinations facilitating the diagnostic process (pH-metry, manometry) can be performed in the outpatient clinic, which significantly affects detection and the cure rate of hiatal hernias, as well as minimizes the possibility of large recurrent phrenic hernias, as presented in the study case.

CONCLUSIONS

1. Recurrent left-sided phrenic hernia (after Nissen’s fundoplication) is a frequent late complication after reconstructive dia-

phragm operations.

2. A patient after Nissen’s surgery requires constant outpatient control.

3. A large phrenic hernia may cause many life-threatening complications, such as intestinal incarceration, cardiac tamponade, respiratory insufficiency, but can be effectively treated by means of surgical intervention in centers with significant experience and relevant technical facilities.

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