



Laparoscopic Repair of Morgagni Hernia

Laparoskopik Morgagni Hernisi Onarımı

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ABSTRACT

Morgagni hernia is a congenital herniation of abdominal contents into the thoracic cavity through a retrosternal diaphragmatic defect and make up about 1 % - 5 % of all types of congenital diaphragmatic hernias. Surgical repair of Morgagni hernias is usually indicated when patients are symptomatic and have a high risk of strangulation or incarceration of the contained viscera. 71-year-old male patient admitted to emergency department with a 2-day history of abdominal pain, vomiting and obstipation. Laparoscopic repair for Morgagni hernia was performed. Laparoscopic repair for Morgagni hernia with mesh repair is secure, satisfactory and easily performed.

Key words: Morgagni hernia, laparoscopy, mesh.

ÖZET

Morgagni hernisi, retrosternal diyafram defektinden toraks içine doğru karın içeriğinin doğumsal fıtığı olup tüm diyafram hernilerinin % 1-5'ini oluşturur. Morgagni hernisinin cerrahi onarımı genellikle semptomatik ve strangülasyon veya inkarasyon riski yüksekse gerekmektedir. 71 yaşında erkek hasta 2 günlük karın ağrısı, kusma ve obstipasyon nedeniyle Acil servise başvurdu. Laparoskopik Morgagni hernisi onarımı yapıldı. Morgagni hernisinin yama ile laparoskopik onarımı güvenli ve tatminkar olup, kolaylıkla uygulanabilmektedir.

Anahtar kelimeler: Morgagni Hernisi, Laparoskopi, Ağ.

INTRODUCTION

Morgagni hernia is a congenital herniation of abdominal contents into the thoracic cavity through a retrosternal diaphragmatic defect and make up about 1 % - 5 % of all types of congenital diaphragmatic hernias¹. Although usually diagnosed in childhood, it can remain asymptomatic until adulthood². It was first described by Giovanni Morgagni in 1761³. The triangular retrosternal foramen of Morgagni is formed by muscle fibers originating from the sternum and costal margin as they join the central tendon of the diaphragm⁴. Incomplete congenital muscle fiber development

predisposes patients to intrathoracic abdominal visceral herniation. 91% of Morgagni hernias occur on the right side and usually contain a combination of omentum and colon⁵.

Surgical repair of Morgagni hernias is usually indicated when patients are symptomatic and have a high risk of strangulation or incarceration of the contained viscera⁶. There have been a variety of approaches described including laparotomy, thoracotomy, laparoscopy and thoracoscopy.

In recent years laparoscopic repair with or without use of mesh has been the popular treatment modality. We report a 71-year-old man

who underwent a successful laparoscopic surgery for Morgagni hernia.

CASE

71-year-old male patient admitted to emergency department with a 2-day history of abdominal pain, vomiting and obstipation. Physical examination revealed obstructive bowel sounds, abdominal distention and tenderness in all four quadrants. Laboratory findings were in normal range. Plain chest X-ray demonstrated opacity and air-fluid level in the right paracardiac region and right lower lung field most probably belonging the Morgagni hernia (Figure-1). Computed tomography (CT) scan demonstrated; a right anterolateral diaphragmatic hernia of Morgagni, containing part of transverse colon and omentum; fluid-gas levels

and dilatation of bowel segments proximal to transverse colon (Figure-2). Beneath these findings emergent laparoscopic exploration was performed for the patient.

Under general anesthesia, the patient was proceeded to a laparoscopic hernia repair. The longest length of the hernia was 5 cm. After reducing the contents of the hernial sac, defect was closed with use of 12x10 cm. single layer polypropylene mesh (Surgipro Mesh, Autosuture, Norwalk, CT) and mesh was fixed to diaphragm by ProTac™ (Covidien, Mansfield, MA, USA) (Figure-3). Primary closure was not performed to avoid tension. Operative time was 45 minutes. The patient was discharged on second postoperative day. No complication was observed.



Figure 1. Plain chest X-ray film

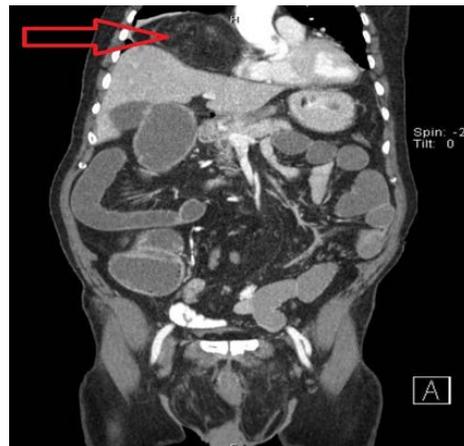


Figure 2. Computed tomography; omentum in hernia sac is demonstrated with red arrow



Figure 3. Intraoperative image showing closure of the defect with polypropylene mesh fixed to diaphragm

DISCUSSION

Morgagni hernia presents as congenital, acquired and mixed forms. Increased intraabdominal pressure resulting from obesity and trauma are predisposing factors⁷. Morgagni hernia usually contains transverse colon, omentum and liver⁸. In our case, the omentum and transverse colon was located in hernia sac. Both transabdominal and transthoracic approaches are recommended in the surgical repair of Morgagni hernia⁷. Transabdominal repair of Morgagni hernia has given favorable results. Transabdominal approaches allow better visualization and management of complex hernias, especially when contains an incarcerated viscus⁹. Minimal invasive surgery became the gold standard treatment¹⁰. Different minimal invasive techniques are used. Sherigar et al. state that smaller defects can be closed with sutures without tension and a mesh can be used for larger defects¹¹. We used polypropylene mesh that provides tension-free repair. Permeability of the mesh allows the seroma collection which is superior to dual layer mesh and primary closure.

Another issue is the removal of the hernia sac. Some authors recommend removal of the sac and some do not¹⁰⁻¹⁴. We did not remove hernia sac in our case. In our opinion removal of the sac not only increase the operation time but also extra dissection may result in some complications. Kuster et al. believe that hernia sac dissection may result in pneumomediastinum with subsequent circulatory and respiratory compromise¹⁵.

Conclusion

Laparoscopic repair became the standard treatment for Morgagni hernias, is an effective and safe technique. Laparoscopy can be diagnostic as well as therapeutic for these patients. We believe that the mesh repair without suture fixation is secure, satisfactory and easily performed.

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