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Morgagni Hernia: How to approach!

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ABSTRACT

Background: Morgagni Hernia (MH) is a retrosternal herniation through inherent diaphragmatic defect manifested by respiratory and/or gastrointestinal symptoms and is repaired through transabdominal or transthoracic approaches.

Methods: The study aimed to evaluate thoracic and abdominal approaches in terms of operative and postoperative sequalae. Herein, we included 18 patients with MH operated in the Cardiothoracic Surgery Department at Mansoura University Hospital, Mansoura, Egypt over a period of 7 years. They were divided into two groups. Group I operated via right thoracotomy and Group II operated via paramedian laparotomy. Each group included 9 patients.

Results: Twelve males and 6 females with right sided MH were included. The mean operative times in thoracotomy and laparotomy groups were 99.44 ± 13.33 and 85.0 ± 20.92 min respectively but without statistical significance $P = 0.100$. We recorded one recurrence in the thoracotomy group (group I) and one post-operative incisional hernia in the laparotomy group (group II).

Conclusions: MH should be repaired upon diagnosis. The optimal surgical technique should be tailored to the patient characteristics. Still, the abdominal approach was linked to easier feasibility, less operative time and recurrence rates.

1. Introduction

Foramen of Morgagni Hernia (MH) is defined as an erratic parasternal or a retrosternal hernia attributed to anterior diaphragmatic defect. It was foremost designated by the Italian pathologist and anatomist Giovanni Morgagni in 1769 [1].

MH is a rare disorder in all age clusters particularly in pediatric age group; being still asymptomatic or not sizable. It represents 3–4% of all other diaphragmatic hernias [2].

The mechanism of development of MH is ambiguous. Some authors claim that it is an acquired process through a congenital diaphragmatic defect buttressed by recording of previously normal chest X-ray for such patients [3].

The clinical manifestations of MH are often non-specific including respiratory complaints in the form of dyspnea and chest pain, or gastrointestinal complaints in the form of nausea & vomiting [1].

Repair of MH could be via thoracic, abdominal or minimally invasive techniques [4].

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The aim of this study was to determine the superlative approach for this defect per every patient characteristics in terms of feasibleness, operative time, hospital stay, patient satisfaction and post-operative complications on follow up.

2. Patients and methods

In this retrospective descriptive single center study, we reported all patients with MH diagnosed and operated upon at the Department of Cardiothoracic Surgery, Mansoura University Hospital, Egypt from January 2006 to January 2013. Being a rare anomaly, only a total of eighteen patients, 12 males (66.7%) and 6 females (33.3%) were encountered. Of these, 12 patients (66.7%) were symptomatic and 6 were accidentally discovered.

Routine workup with X-ray and Computed tomography (CT) of the chest was performed preoperatively to all patients. Contrast study in the form of barium follow through was done for 9 patients.

Preoperative colon preparation was performed by 24-hours solid food fasting and enema at the night of surgery to ease reduction of contents into the peritoneum.

The surgical approach was based on surgeon's preference tailored per every patient preoperative characteristic. Thoracotomy was avoided in patients with respiratory comorbidities where laparotomy was performed.

Right posterolateral thoracotomy in the 7th intercostal space was performed for the 9 patients (50%) of Group I. Anterior extension of the wound was needed for better exposure. The sac contained the omentum alone (3 patients), or omentum and colon (6 patients) and it was filling the right cardiophrenic recess and extending for a variable distance into the pleural space. The sac was routinely opened, its edges were held with artery forceps and then the contents were slowly reduced into the abdomen to evade injury of the colon or the omentum. The neck of the sac was closed with transverse mattress non-absorbable suture, descended into the abdomen. The defect was closed by interrupted single layer heavy polypropylene sutures. Chest tube drainage was left for 24 h.

Right paramedian muscle sparing incision was performed in the other half of the patients (Group II). After retraction of the wound edges, it was easy to detect the defect, pull the contents, excise the sac and ligate the neck, and close the defect by interrupted single layer non-absorbable sutures. We fully inflated the lung at the end of the operation with no need for chest tube but only abdominal drain (see Figs. 1 and 2).

3. Results

Included were 18 patients (33.3% females) with a mean age of 26.83 ± 17.80 years, ranging from 8 to 54 years old. Of which, 50% were in pediatric age group (Table 1 and Fig. 3).

In this study, all patients presented with right sided MH. As regard symptoms, 12 patients were symptomatic in the form of dyspnea (7 patients) and cough (5 patients) with recurrent chest infection (4 patients). Six patients were discovered inadvertently during chest X-ray evaluation for other problems as shown in (Table 1 and Fig. 4).

Table 1
Demographic and Perioperative data of studied group.

Parameter	No (%) – Mean ± SD.
Age	26.83 ± 17.80
Sex	
Male	12 (66.7%)
Female	6 (33.3%)
Symptoms	
Dyspnea	7 (38.9%)
Cough	5 (27.8%)
Recurrent chest infection	4 (22.2%)
Asymptomatic	6 (33.3%)
Laterality	
Right	18 (100%)
Left	0 (0%)
Approach of surgery:	
Right thoracotomy	9 (50%)
Paramedian abdominal incision	9 (50%)
Contents:	
Omentum only	9 (50%)
Omentum and colon	9 (50%)
Operation time (min)	
Thoracotomy group	99.44 ± 13.33
Laparotomy group	85.0 ± 20.92
Postoperative complications	
Incisional hernia	1 (5.6%)
Recurrence	1 (5.6%)
No complication	16 (88.9%)

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