Minimally Invasive Repair of Massive Morgagni Diaphragmatic Hernia with Mediastinal Displacement has Significant Impact on Pulmonary Function and Exercise Tolerance

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INTRODUCTION

• The purpose of this case report is to demonstrate the repair of two giant Morgagni hernias with bowel contents in the right chest.
• A minimally invasive surgical method was used to reduce the herniated contents and to repair the hernia.

RESULTS

Case 1: A 26-year-old male with obesity
• Hx of recurrent pneumonia
• Morgagni Hernia discovered following a CT abdomen performed to evaluate for kidney stone.
• Preop: Low PFTs; RL/ML lobar and segmental obstruction; Small & large bowel in chest.

Case 2: A 56-year-old female with morbid obesity
• 4 or 5-year Hx of worsening shortness of breath.
• Morgagni Hernia discovered on CT
• Preoperative labs: Low PFTs; abdominal contents in right chest;
• Complete collapse of subsegmental divisions of RUL, RML, and RLL to extrinsic compression.

• Patient 1: Pulmonary function tests (PFTs) improvement
  • Preoperative PFTs included an FVC and FEV1 of 3.11 and 2.37, respectively. There was an increase in the post-operative PFTs to an FVC and FEV1 of 4.59 and 3.64, respectively.
  • FVC & FEV1 predicted value: 3.51 and 2.74

• Patient 2: Pulmonary function tests (PFTs) improvement
  • Preoperative PFTs included an FVC and FEV1 of 1.97 and 0.96, respectively. There was an increase in the post-operative PFTs to an FVC and FEV1 of 1.97 and 1.63, respectively.
  • FVC & FEV1 predicted value: 5.53 and 4.54

DISCUSSION

• The symptology of patients with Morgagni Hernias can range from asymptomatic to progressive shortness of breath and exercise intolerance.
• Morgagni hernias are the rarest form of diaphragmatic hernia and they are represented in approximately 3% of cases.
• The use of a hybrid approach utilizing both laparoscopic and thoracoscopic techniques can assist in both reduction of the intra-abdominal contents from its location in the thorax and recruitment of the affected lung.
• Utilizing these maneuvers improved exercise tolerance and pulmonary function tests in the post-operative period of both patients.

TAKE HOME POINTS

1. Morgagni Hernias can be asymptomatic or can present with nonspecific pulmonary symptoms.
2. Chest X-rays are the recommended diagnostic method.

REFERENCES