BJCR
Brazilian Journal of Case Reports

PCAA
Publicações Científicas de Acesso Aberto

Case Report

Symptomatic congenital Morgagni hernia presenting as a dyspnea in elderly patient

Josue Rueda Cervantes [1], Jose Angel Facio Treviño [1], Alberto de Anda Coronado [1], Luis Fernando Zorrilla Nuñez [1], Gerardo Ivan Muñoz Morales [1], Abraham Alexander Alarcon Sandoval [1], Luis Rodrigo Gomez Alvarez [1], Gerardo Enrique Muñoz Maldonado [1,*]

[1] General Surgery Department, Hospital Universitario Dr. Jose Eleuterio Gonzalez, Monterrey, México.

* Correspondence: cevam99@gmail.com.

Abstract: Morgagni's hernia is a very uncommon congenital diaphragmatic hernia. A few patients may remain asymptomatic until adulthood. Clinical presentation may include bowel obstruction, chest pain or dyspnea. Here we present a case of symptomatic Morgagni hernia diagnosed in a 64 years' female. A 64-year-old female patient, go to the consultation with a private doctor due to 10 years of evolution of respiratory symptoms due to respiratory symptoms, whose thoracic computed tomography revealed a large Morgagni's hernia, containing colon. She underwent an elective laparoscopic repair with mesh. Morgagni hernias are mostly diagnosed incidentally on a chest radiograph or can present with cardiorespiratory or abdominal symptoms. Our case was an adult who was diagnosed to have Morgagni hernia presenting with chest symptoms. The investigation of choice to diagnose and evaluate this condition is CT of chest and repair of hernia. Thoracic computed tomography is the best imaging study for its diagnosis. Laparoscopic repair is safe and allows symptomatic relief and incarceration risk reduction.

Keywords: Hernias; Diaphragmatic; Congenital; Laparoscopy; Dyspnea.

Citation: Cervantes JR, Treviño JAF, Coronado AA, Nuñez LFZ, Morales, GIM, Sandoval AAA, Alvarez LRG, Maldonado GEM. Symptomatic congenital Morgagni hernia presenting as a dyspnea in elderly patient. Brazilian Journal of Case Reports. 2023 Jul-Sep;03(2):8-12.

Received: 27 October 2021
Accepted: 11 January 2022
Published: 21 February 2023

1. Introduction

Tumor necrosis factor alpha (anti TNF) inhibitor agents have become an effective therapy and an important advance in the management of chronic inflammatory diseases. The experience accumulated so far demonstrates a good safety profile, low toxicity, and high efficacy [1]. Although safe, this biological therapy option can cause some side effects, especially paradoxical reactions. There is evidence of an increased risk of upper airway infections, reactivation of latent infections, and infusion reactions. It is known that there is a lack of information on specific recommendations for the management of these lesions resulting from the side effect of the use of anti TNF such as infliximabe, etanercept and adalimumab, mainly since the pathophysiology of these reactions is not yet fully understood [1].

In 1761, Morgagni described the classical anterior diaphragmatic hernia. It accounts for only 5–10% of congenital diaphragmatic hernias (CDH) [1]. The estimated prevalence of CDH is 1/2000 to 1/5000 live births [2]. In total, 61% of cases occur in females [3]. The 'foramen' of Morgagni's hernia occurs in the anterior midline of the diaphragm, predominantly on the right side. A few patients may remain asymptomatic until adulthood [4]. Clinical presentation may include obstructive symptoms from protrusion of the colon, epigastric or chest pain and dyspnea, to name just a few.

The finding of mediastinal abnormalities on a chest X-ray, such as widening or air-f luid levels, should raise suspicion of a diaphragmatic hernia. Thoracic computed

tomography (CT) is the gold-standard imaging study for determination of its content and 'foramen' localization. Surgical repair is recommended for all fit patients [5], preferably through a minimally invasive approach.

2. Case Report

The authors report the case of a 64-year-old female patient, with a history of mild asthma, hypothyroidism, systemic sclerosis, and hypercholesterolemia, who went to the referred consultation due to the finding of a diaphragmatic hernia during the diagnostic approach of a lipoma. Upon examination, there seemed to be bowel sounds on the thorax, heart sounds were slightly diminished. She had a chest X-ray done (Figure 1) that showed widening of the mediastinum, as well as a few air-fluid levels, which raised suspicion of a diaphragmatic hernia.

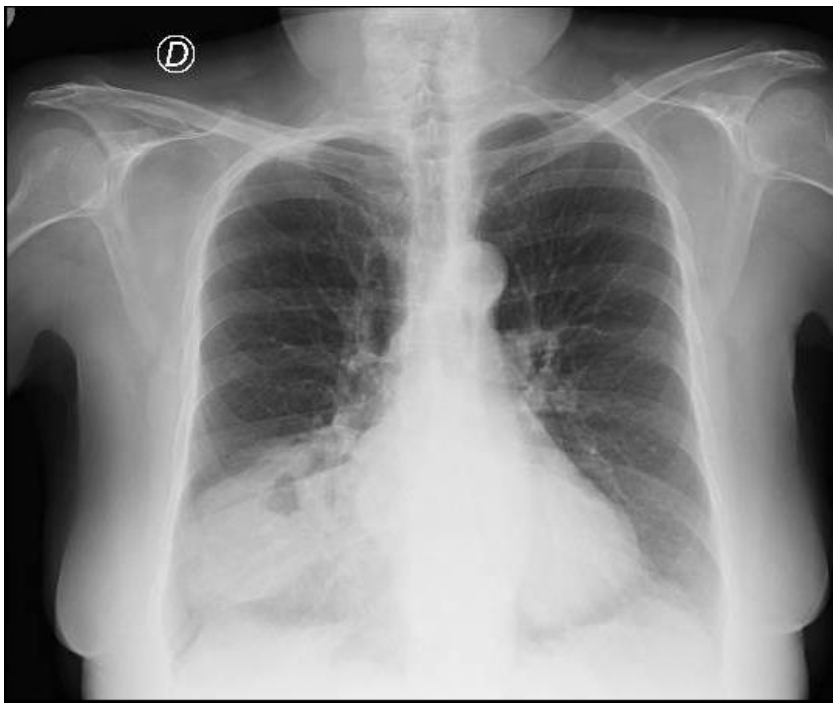

Figure 1. Chest X-ray showing widening of the mediastinum and a few air-fluid levels.

She also had a thoracic CT done (Figure 2) that revealed a large hernia in the anterior mediastinum, containing transverse colon and a significant amount of '*omentum*,'. She described episodes of dyspnea. Subsequently, she was referred to General Surgery and offered elective surgical repair of the hernia. Then, she underwent a laparoscopic repair, through 4 trocars (2 of 10 mm on the umbilicus and left hypochondrium, and another 2 of 5 mm on the right hypochondrium and left f lank), with gentle reduction of all herniated content (transverse colon and greater '*omentum*') (Figure 3), adhesiolysis, measurement of the defect (7.3 cm in diameter) and placement of a flat sheet mesh, consisting of monofilament polypropylene, from 'COVIDIEN'®, of 20 × 20 cm (Figure 4), that was fixed with a few anchoring sutures of a monofilament non-absorbable thread (polypropylene) 'Ethicon'®. The procedure ran uneventfully.

Figure 2. Axial (A), coronal (B) and sagittal (C) images, respectively, of thoracic and abdominal CT showing the localization of this hernia.

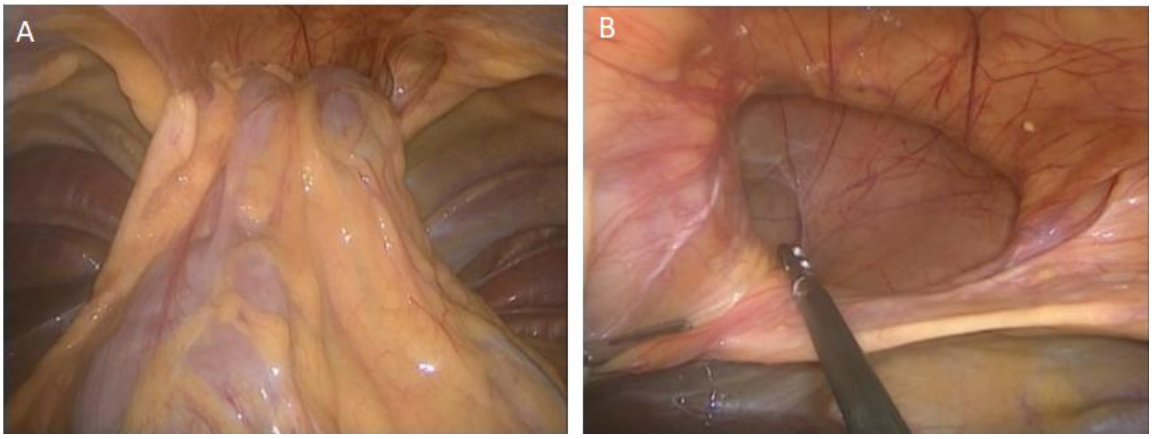

Figure 3. Laparoscopic repair surgery.

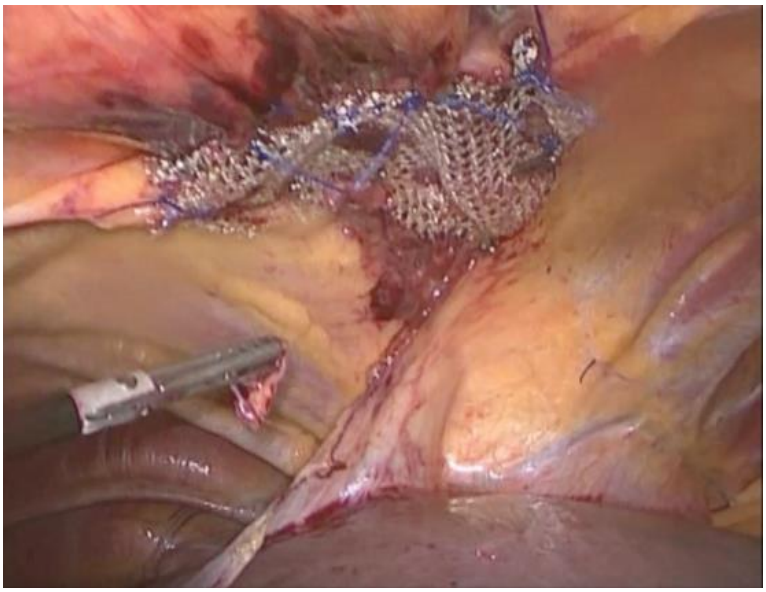

Figure 4. Photograph taken during surgery: placement and fixation of the mesh.

She had a chest X-ray done on the first postoperative day that showed no thoracic complications (pneumothorax nor hemothorax). She had an uneventful recovery and was discharged home on the third postoperative day.

3. Discussion and conclusion

Even though it is rare, Spiegel's hernia is a diagnosis that must be kept in mind when investigating abdominal wall hernias. Predisposing factors include aging, previous surgery, and increased intra-abdominal pressure secondary to obesity, multiparity, ascites, chronic cough, and chronic obstructive pulmonary disease, among others [3, 5]. In this report, we describe the case of a patient in her 50th decade of life, obese, multiparous (two cesarean deliveries), and with a previous hysterectomy, which corroborates the literature.

Diaphragmatic hernia can be either congenital or acquired. Acquired hernia can be primary/spontaneous or secondary. Congenital diaphragmatic hernia in adulthood can occur through an anterior parasternal Morgagni foramen or through a posterolateral, mainly left sided, named as Bochdalek hernia [6]. Blunt trauma of the lower chest and upper abdomen is the major cause of diaphragmatic rupture and hernia.

Traumatic diaphragmatic hernias are produced by a sudden increase in the pleuroperitoneal pressure gradient at areas of potential weakness along embryological points of fusion. A spontaneous rupture implies the absence of trauma, but there is always possibility of forgotten trauma in past or structural origin [7].

Our patient had a chest X-ray done (Figure 1) that showed a widening of the mediastinum, which raised suspicion of a diaphragmatic hernia. Once a patient presents a widening of the mediastinum, shifting of heart and mediastinum (usually to the right), or presence of thoracic air-fluid levels on a chest X-ray, one should always consider the possibility of a diaphragmatic hernia, regardless of their age. The lesser the diaphragmatic defect the later will the patient become symptomatic. Twenty-eight percent of patients are asymptomatic at the time of diagnosis [3].

Our patient remained nearly asymptomatic until elder hood except for dyspnea, which was the only symptom our patient presented. The aging process is naturally associated with muscular weakening and thinning, accompanied by visceral fat and intra-abdominal pressure increases.

Clinical presentation may vary from subtle and insidious respiratory or functional digestive symptoms to life-threatening conditions, such as bowel obstruction or ischemia, gastric or splenic volvulus and significant pulmonary dysfunction. Our patient had a history of mild asthma; therefore, she may not have realized the decline in her pulmonary compliance and exercise tolerance.

The risk of an emergency presentation is between 12 and 14% [8]. This is the rationale that supports the recommendation of an elective surgical repair for all fit patients, even if asymptomatic [9]. Laparoscopic repair is an attractive approach, as it has recurrence and complication rates that are like open repairs. The recurrence rate is very low (2.3%) [10].

Our patient had transverse colon and a large amount of greater '*omentum*' herniated toward the anterior mediastinum, which required gentle traction with atraumatic graspers. According to a recent review, hernia contents include large bowel (in 72% of cases), '*omentum*' (65%), small bowel (25%), stomach (4%) and fat (2%) [10].

Mesh placement is recommended for defects larger than 3 cm [11], as was the case in our patient. We chose a flat sheet mesh: monofilament polypropylene for the abdominal side. Ideally, there should be a 2 cm overlap between the mesh and the border of the defect, to preclude recurrence, because meshes may shrink over time.

Thoracic CT is the gold-standard imaging study for determination of the content and localization of the 'foramen' of its hernia, outpatient had a thoracic CT done that revealed a large hernia in the anterior mediastinum, containing transverse colon and a significant amount of "*omentum*".

Currently, urgent thoracic CT has been more frequently requested, to clarify some respiratory conditions, which has allowed us to detect asymptomatic diaphragmatic

hernias, and properly refer these patients to surgery. It has been estimated that the diameter of the defect may grow up to 7 mm per year, if left untreated [10].

To conclude, in the absence of a past traumatic history, the radiographic finding of widening of the mediastinum with air fluid levels, and a relative paucity of air below the diaphragm, should raise suspicion of a congenital diaphragmatic hernia, regardless of patient age. Even in asymptomatic patients, the defect enlarges and stretches with aging, and life-threatening complications may arise. Thus, an elective surgical repair should be offered to all fit patients.

Funding: None.

Research Ethics Committee Approval: We declare that the patient approved the study by signing an informed consent form and the study followed the ethical guidelines established by the Declaration of Helsinki.

Acknowledgments: None.

Conflicts of Interest: The authors declare no conflict of interest.

Supplementary Materials: None.

References

1. Bragg WD, Bumpers H, Flynn W, Hsu HK HE. Morgagni hernias: an uncommon cause of chest masses in adults. Am Fam Physician. 1996;54(6).
2. Andión M, Molina B, Usano AI, Crespo D. Morgagni-Larrey Hernia: A Rare Cause of Pericardial Effusion. Rev Española Cardiol (English Ed. 2008;61(11):1220–1.
3. Horton JD, Hofmann LJ, Hetz SP. Presentation and management of Morgagni hernias in adults: A review of 298 cases. Surg Endosc Other Interv Tech. 2008;22(6):1413–20.
4. Naunheim KS. Adult presentation of unusual diaphragmatic hernias. Chest Surg Clin N Am. 1998;8(2):359–69.
5. Navakishore K, Sharma D, Gondu GR, Thumma VM, Gunturi SV, Reddy JM, et al. Surgical Management of Adult Diaphragmatic Hernia - An Instituitional Experience. Int J Contemp Med Surg Radiol. 2018;3(2):54–7.
6. H Poe R, G. Schowengerdt C. Two cases of atraumatic herniation of the liver. Am Rev Respir Dis. 1972;105(6).
7. Gupta V, Singhal R, Ansari MZ. Spontaneous rupture of the diaphragm. Eur J Emerg Med. 2005;12(1):43–4.
8. Aghajanzadeh M, Khadem S, Khajeh Jahromi S, Gorabi HE, Ebrahimi H, Maafi AA. Clinical presentation and operative repair of Morgagni hernia. Interact Cardiovasc Thorac Surg. 2012;15(4):608–11.
9. Minneci PC, Deans KJ, Kim P, Mathisen DJ. Foramen of Morgagni hernia: Changes in diagnosis and treatment. Ann Thorac Surg. 2004;77(6):1956–9.
10. Young MC, Saddoughi SA, Aho JM, Harmsen WS, Allen MS, Blackmon SH, et al. Comparison of Laparoscopic Versus Open Surgical Management of Morgagni Hernia. Ann Thorac Surg [Internet]. 2019;107(1):257–61.
11. Wadhwa A, Surendra JBK, Sharma A, Khullar R, Soni V, Baijal M, et al. Laparoscopic repair of diaphragmatic hernias: Experience of six cases. Asian J Surg [Internet]. 2005;28(2):145–50.