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Case report

# Bowel sounds in the chest: An uncommon presentation of adult hernia

Tahir Majeed, MD Resident[a,*], Ajaz Koul, MD, MRCP(UK), FRCP(UK), FCAN Consultant[a,c], Talib Khan, MD Resident[a], Sahil Hassan, MBBS year 3[b]

[a] Internal Medicine, SKIMS Soura, India
[b] SKIMS Medical College, Bemina, India
[c] Internal Medicine and Infectious diseases, SKIMS soura , India

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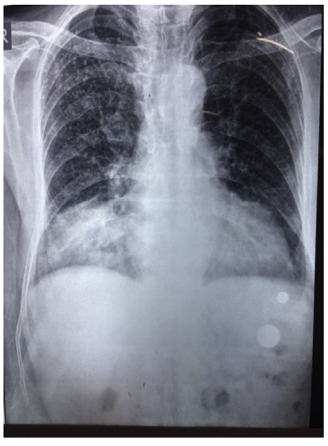
ABSTRACT

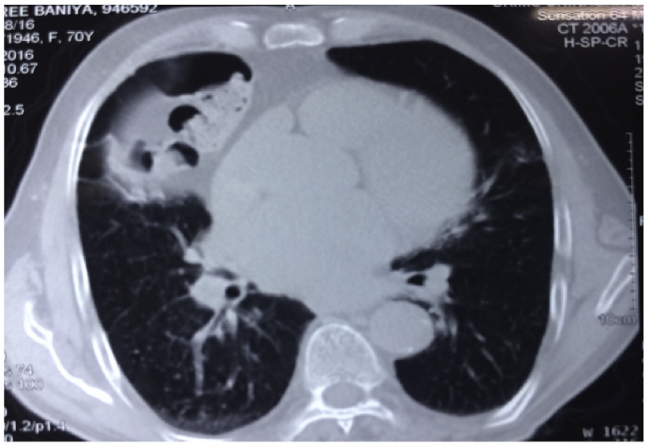
We report a case of a 65-year-old male, who presented with respiratory complaints of cough and breathlessness, managed initially as respiratory tract infection. However, the patient did not improve, and a thorough examination and imaging revealed herniation of a gut segment into the thorax. The patient was operated and respiratory symptoms improved dramatically.

## 1. Case

A 65-year-old male ex-smoker, farmer by occupation, presented with a history of dry cough and progressive breathlessness, of two weeks duration. There was no similar history in the past. The patient did not have any history of trauma, fever, haemoptysis, constipation, abdominal or chest pain.

On examination, the patient was conscious, cooperative, oriented but breathless. He was of an average built with BMI of around 25.8 kg/m$^2$. He was tachycardic (pulse = 110) and had tachypnea (RR = 24). There was no pedal edema or raised JVP. Chest examination revealed decreased movements, a dull note posteriorly with a tympanic note anteriorly and absent breath sounds in right infrascapular region. Bowel sounds were heard in the right infraclavicular area. Abdominal examination was normal. Blood gas analysis showed hypoxemia (pao2 = 54 mm Hg) with mild hyperlactemia (lact = 2.5 mmol/L). Chest X-ray revealed a right lower zone haziness with air levels. Ultrasonography of abdomen was unremarkable. Septic screen and tubercular profile were negative. The patient was treated empirically with antibiotics for community-acquired pneumonia. However, the patient did not improve, and a CT chest was done that revealed herniation of bowel loops into the chest through a right anterior diaphragmatic defect. Subsequently, the patient was managed surgically.






* Corresponding author.
*E-mail address:* tahirmajeed34@yahoo.com (T. Majeed).

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## 2. Discussion

MH was first described by Giovanni Battista Morgagni, an Italian anatomist and pathologist in 1769, while performing a postmortem examination on a patient who died of a head injury [1]. MH is the most rare of the four types of congenital diaphragmatic hernia (2%–3% of all cases) [2,3]. In adults, it can occur on either side of the sternum through a muscle-free triangular space called the Larrey space, although it is more common on the right. In rare cases, the hernia can be bilateral. Symptomatic adult cases of MH are rarer with only 12 cases described [4]. Most hernias of Morgagni are diagnosed late because patients can be asymptomatic or present with vague gastrointestinal and respiratory symptoms and signs [5]. Men present earlier in life than women. Very few adult patients present with chest symptoms, the majority describing abdominal pain due to strangulation of the viscera[4] · MH usually presents with recurrent chest infections in children (55%) and lateral chest radiographs are usually always conclusive [6]. Screening may apply to children with increased risk associated anomalies and familial forms of congenital diaphragmatic hernias (from 34% to 50%) [7]. Patients with Down's syndrome have increased risk of MH [8] · Obese patients may develop it later in life and sometimes it may follow trauma. Differential diagnosis would be an intrathoracic tumor, atelectasis, pneumonia, or pericardial cyst. Depending on the contents of the hernia—omentum, stomach, small intestine, or liver [9].

Pre-natal diagnosis by ultrasonography is possible in 50 percent to 90 percent of cases [10,11]. The intestine and the liver may be in the thorax and the lungs are small. Ultrasound scans allow detailed assessment of the heart. Lung growth is measured as a proportion of head growth. The lung-to-head ratio (LHR) has some prognostic value [12–18], because when it is below 1, survival is compromised [19]. After birth, a diagnosis can readily be made on the basis of symptoms and physical signs. Blood gases and pH status reflect the efficiency of gas exchange. An X-ray of thorax and abdomen may be sufficient, but passing a naso-gastric catheter into the stomach before a plain X-ray of the thorax and abdomen may help to locate it or to detect any esophageal displacement [20] · In some rare cases, herniation of viscera through the diaphragm is an incidental finding in adult patients. Computed tomography can be considered to be an accurate, non-invasive method of diagnosing MH. It can help establish a diagnosis if, as in some cases, the hernia sac is empty or contains omentum or part of the liver. But as described by Fagelman et al. the computed tomogram did not confirm the diagnosis after the chest radiograph as the presence of gas within the lesion was variable: the bowel was sliding in and out of the defect [21]. This might make diagnosis difficult or confusing. Other investigations such as magnetic resonance imaging (MRI) and radio nucleotide liver scan may help with diagnosis but the cost is difficult to justify. Collie et al. demonstrated with MRI a herniation of liver through MH on a patient who presented with increasing shortness of breath and exertional angina [22].

When diagnosis is made *in utero*, amniocentesis is often performed for detecting chromosomal aberrations [23] and may help to estimate lung maturity [24]. Surgery is appropriate for the management of symptomatic adult patients with MH, particularly those with findings of intestinal strangulation, with laparoscopic treatment an alternative approach in selected cases.

## 3. Conclusion

MH is rare in both adults and children. Diagnosis becomes difficult when abdominal symptoms are absent particularly in elderly. Diagnosis should be considered always in a patient who has dissemblance in examination and imaging features and in those who do not respond to medical management as treatment of this condition is essentially surgical.

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