

CASE REPORT

PARAOESOPHAGEAL HERNIA REVEALED BY SMALL PLEURAL EFFUSION

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SUMMARY

We report the case of a 79 year-old female with dry cough, exertional dyspnea, fatigue and possible small repeated haemoptysis in which Chest X-Ray revealed a mixed hydro-aeric image in the lower part of the left haemithorax. Differential diagnosis issues imposed further investigation conducting to a surprising and rare condition: paraoesophageal hernia. Barium swallow imaging and computed tomograph scan, as well as digestive endoscopy confirm the diagnosis and specify the type and size of hiatal hernia. Laparoscopic surgery is recommended as a choice of treatment because of the high risk of complications and often high amount of herniated stomach in the chest, especially for patients younger than 65 years old.

Key words: paraesophageal hernia, hydro-aeric opacity, clinical case

RÉSUMÉ

Hernie para-oesophagienne rélevé par un petit épanchement pleural

Nous rapportons le cas d'une femme de 79 ans qui présentée une toux sèche, dyspnée d'effort, asthénie et possible petite hémoptysie répétée, avec une image mixte hydro-aérique dans la partie inférieure de l'haemithorax gauche sur la radiographie pulmonaire. Plusieurs problèmes de diagnostic différentiel ont reçu des nouvelles investigations; toutes ces données ont conduit à une condition médicale surprenante et rare: hernie para-oesophagienne. Le diagnostic est confirmé par imagerie avec Baryum, la tomodensitométrie, ainsi que l'endoscopie digestive, qui relève aussi le type et la taille d'une hernie hiatale. En raison du risque élevé de complications on recommande la chirurgie laparoscopique comme première choix de traitement, mais aussi parce qu'une large portion de l'estomac peut hernier dans la boîte thoracique, en particulier pour les patients âgés de moins de 65 ans.

Mots clés: hernie para-oesophagienne, opacité hydro-aérique, cas clinique

INTRODUCTION

Hiatal hernia is frequent between peoples with gastro-oesophageal reflux symptoms. The para-oesophageal (rolling) hiatus hernia might be discovered during the pulmonary evaluation. Knowing the diaphragm pathology is important to identify the correct diagnosis.

CASE REPORT

We report the case of a 79 year-old female non-smoker, without occupational exposure, recently diagnosed with

diabetes mellitus type II (DM), presenting rarely dry cough, exertional dyspnoea with modified Medical Research Council scale (mMRC) as II, fatigue and suspicion for haemoptysis in small amounts.

The physical examination revealed good general condition, no febrile; pale and dry skin and mucous; grade I obesity (BMI=32.44 Kg/m²), dullness with diminished vesicular murmur in the 1/3 lower left hemithorax; oxygen saturation in room air (SpO₂) of 97%; arrhythmic heart sounds, blood pressure=130/80 mmHg, irregular heart rate, atrial fibrillation; abdomen sensitive in epigastric region. The patient denies other digestive symptoms; she also denies vomica or fever in the last four weeks. Labo-

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ratory data showed haemoglobin: 12.7 g/dl; white blood cells: 6800/mm³, erythrocyte sedimentation rate: 74 mm/h, serum glucose: 121 mg/dl, normal liver and kidney function. ECG: Atrial Fibrillation, HR=150 bpm, QRS axis= 90°, without ST-T abnormalities. Frontal Chest X-Ray revealed mixed hydro-aeric image located in the lower part of the left hemithorax, with an undefined of the hemidiaphragm on the same side (Fig. 1a). We suspected several possible diagnoses: giant lung abscess, ruptured and partially evacuated hydatid cyst or loculated hydro-pneumothorax, lesion being projected anteriorly (Fig. 1b).

Clinical and imaging discrepancy led to further investigation as follows: bacteriological examination of sputum for bacteria and Myc. Tuberculosis (MycT) were negative; pleural ultrasound revealed the presence of a small effusion fluid. Pleural fluid had serous-citrine aspect, positive Rivalta, proteins=3.4mg/dl, LDH 212 UI, adenosindesaminase (ADA) 22 UI, glyco-pleurisy 118 mg/dl and the cytology examination revealed numerous red blood cells, frequent lymphocytes and numerous „reactive” isolated or in placards mesothelial cells; some cells of uncertain aetiology. Cyto-hysto-pathological investigation in the anatomo-pathologic department revealed tumour appearance (secondary pleural determinations of adenocarcinoma). The patient refused bronchoscopy and chest computed tomography was performed after 10 days of hospitalization, after the patient had followed antibiotic and anti-inflammatory treatment: (Fig. 2. a,b,c,d)

The final diagnosis was paraoesophageal hernia, left serofibrinous pleural affusion completely resorbed, possible of infectious etiology, atrial fibrillation, diabetes mellitus type II. She was discharged in good general condition, with the indication to continue therapy for comorbidities and also surgical cure of hiatal hernia. The patient returned for clinical examination after 6 months, asymptomatic and

without pleural problems, in good general condition without surgical cure of hiatal hernia.

DISCUSSION

The present case raised issues of differential diagnosis and course of treatment. Front and lateral chest radiographies raised the suspicion of lung abscess or loculated hydro-pneumothorax, with possible tuberculosis etiology, in a patient recently diagnosed with diabetes mellitus. The clinical presentation was nonspecific, without sign and symptoms suggestive for severe pulmonary infection such as bronchorrhea, high-level fever, and bacteriological examinations were negative. Partially evacuated hydatid cyst and pleuropericardic cyst were also taken into consideration as a possible diagnosis. Pleural ultrasound performed in this case in order to investigate hydro-aeric image affiliation, enabled us to detect the presence of a small amount of pleural fluid. This method has a much greater sensitivity than a standard radiography (3-5 ml vs. 75 ml), and the advantage to perform a guided thoracocentesis, identifying anatomical structures with their movements, the presence of free or loculated fluid in pleural space, and also differentiating between fluids, pleural thickening, or a process of condensation (1-3). Pleural fluid cytological analysis raised the suspicion of tumor pathology, due to the presence of reactive cells, suggestive for a secondary adenocarcinoma. The small amount of pleural fluid and rapid resorption made pleural biopsy impossible. However, we have maintained the suspicion of pulmonary tumor and chest CT was performed. The presence of large paraesophageal hiatal hernia excluded the presumption of lung tumor. Nevertheless, it is well-known that lung, breast, ovary or lymphoma carcinomas are the most common causes of neoplastic pleurisy.³ For this reason, a medical screening was performed in order to detect malignancy with

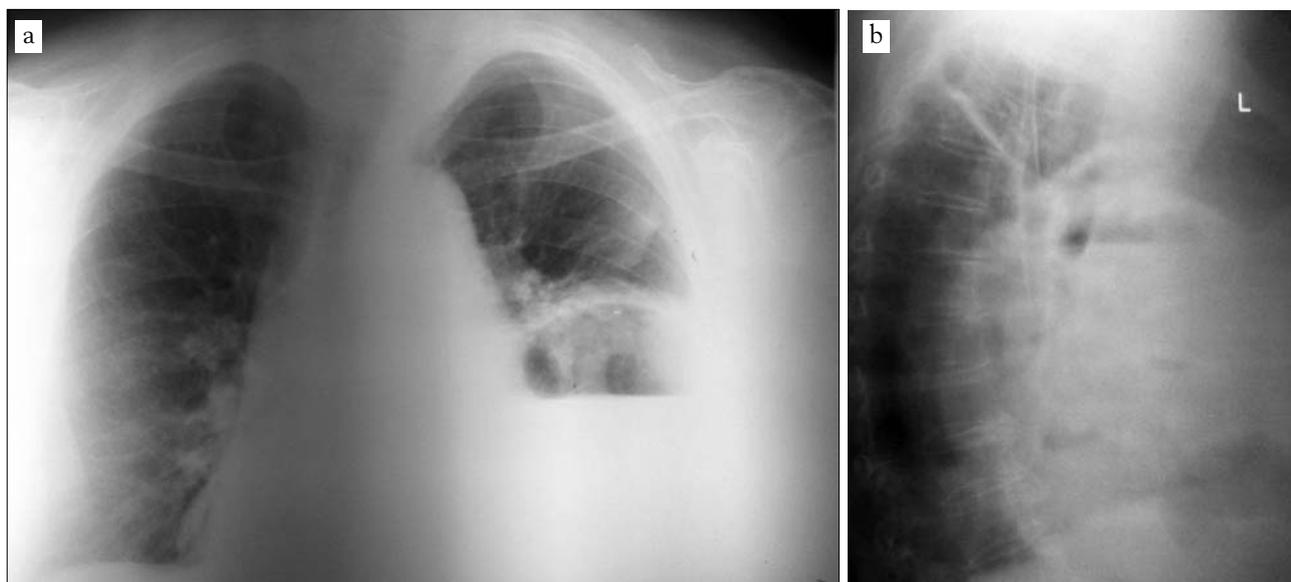


Figure 1 - (a,b) Frontal and lateral chest X-Ray - large opacity with air-fluid level

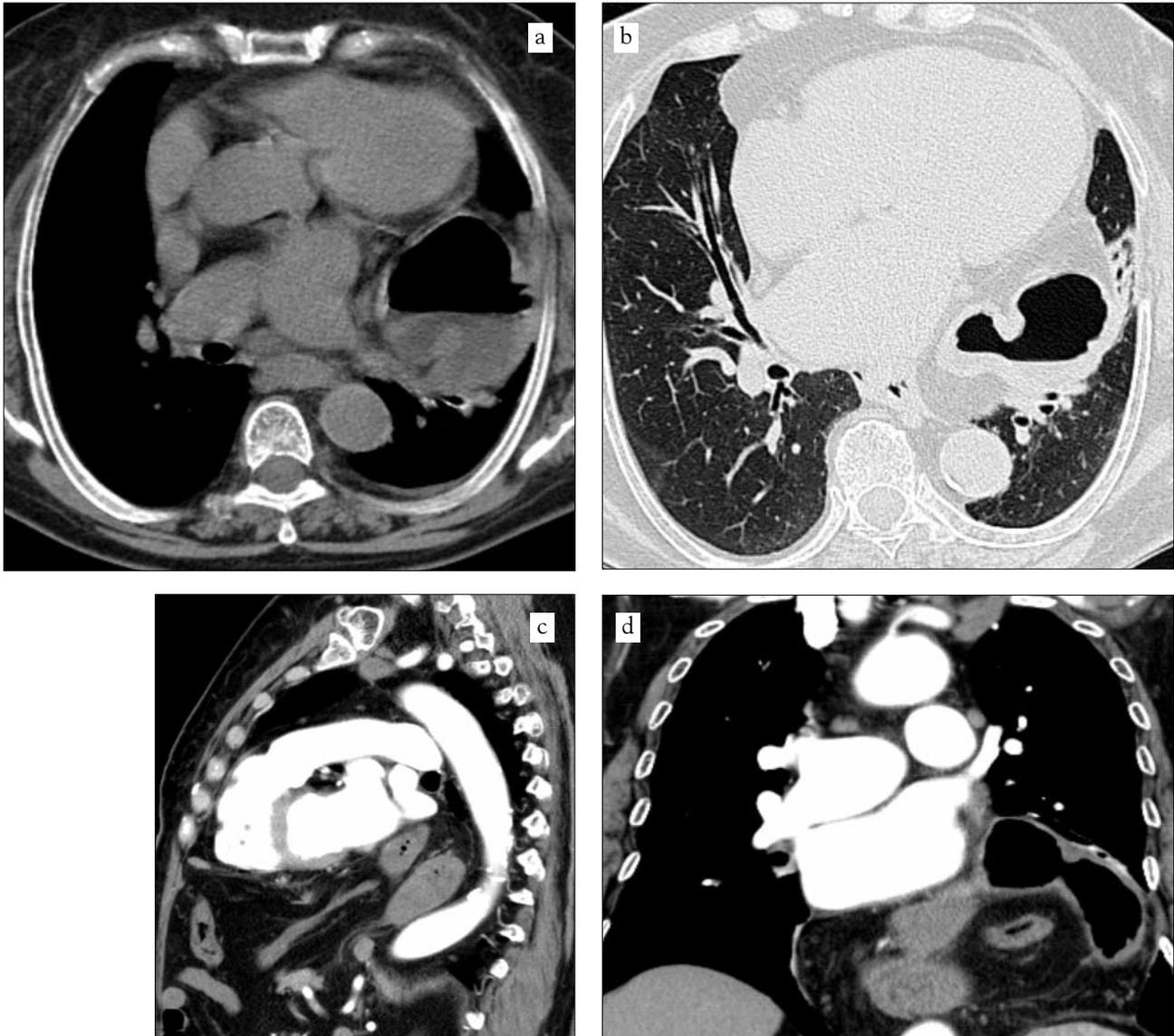


Figure 2 - (a, b, c, d) CT scan: epigastric mass with air-fluid level on axial CT scan (a,b), stomach emerges into the chest next to oesophagus and the gastro-oesophageal junction remains in place on coronal sagittal plane (c,d).

another starting point, to investigate the tumoral aspect of pleural fluid but no other pathological changes were found. The favorable evolution in time questioned the correct interpretation of pleural fluid cytology and the possibility of confusing the old mesothelial cells with the neoplastic ones. The patient delayed intervention for hiatal hernia, and the digestive and respiratory symptoms were minimal.

In general, posterolateral diaphragmatic defects are more common, and 85-90% occur in the left hemithorax, 10-20% of them featuring a 'hernia bag'. Among diaphragmatic hernias, hiatal hernias are the most common (90%), being present in 20% of the population (5). Hiatal (hiatus) hernia is a group of diseases caused by sliding a part of the stomach or other abdominal organs through the esophageal hiatus into the chest cavity, due to cardio tuberosus fixing means weakening and hiatus widening (5,6). The gastro-esophageal junction is a barrier formed at the lower esophageal sphincter (2,5- 4,5 cm in length), diaphragmatic crura and the

proximal stomach (the His angle formed between cardia and gastric fundus), which prevents gastro-esophageal reflux (5).

Depending on the maintaining the gastroesophageal (GE) junction position, hiatal hernias are divided into two categories: sliding hiatal hernia (type I, 95%- when GE junction slips into the chest and further attracts the stomach) and paraesophageal hernia (type II where GE junction remains fixed anatomical structures (fascia preaortica) and the bottom of the stomach slides into the chest next to the esophagus (5-9). Sometimes the two types combine (type III) or other organs than the stomach could herniate (hiatal hernia type IV) (5,6). Incidence increases with age, it is more common in men and obese persons, can appear after pregnancy or certain surgery procedures (gastrectomy, vagotomy, oesophageal plasty) (10,11). The present case is a type of paraesophageal hernia (rolling hernia) and occurs frequently due to gastrophrenic ligament weakening or destruction, due to abdominal overpressure where endocrine and metabolic

factors have great influence on. It is more rare than sliding hernia, representing between 1-10% of hiatal hernias and has the following features: the esophagus is of normal size or slightly elongated (different from brachiesophagus, where the esophagus is short), cardia is always situated subdiaphragmatically, it occurs in the left side of the esophagus and, as a rule, the greatest stomach tuberosity ascends in the chest through the widened hiatal ring or through a para-hiatal hole located in the right pillar (6,7,8,10). In general, they do not accompany the gastroesophageal reflux and this explains the absence of gastrointestinal symptoms in our patient, differently from the clinical picture of sliding hernias, where heartburn, regurgitation, nausea are common. In our case, respiratory symptoms such as dyspnoea and cough, were caused by compression of the tracheobronchial tree and mediastinum. The patient did not repeat microhemoptysis to be confirmed, but probably she presented small haematemesis due to secondary erosion of the gastric mucosa. In hiatal hernias, radiological examination reveals air-fluid level opacity, different sizes, retro or paracardiac in lower mediastinum. Differential diagnosis is often performed with lung abscess or hydro or loculated pleuro-pneumothorax. Stomach bubble absence may be suggestive of hiatal hernia (12). Chest radiography may be diagnosed when there are hydroaeric levels both above and below the diaphragm. Performing gastrointestinal barium examination would have been diagnosed if done before chest CT scan. On suspicion of hiatal hernia, although barium swallow is preferred being a cheap procedure, chest and upper abdomen CT scan is more accurate for anatomical precision and to identify the organs in the hernia bag (6,13). Ultrasonographic examination of the chest is a useful means of diagnostic suspicion due to the invasiveness and absence of radioionization (12). Gastrointestinal endoscopy could diagnose hiatal hernia as well as the complications that could appear: erosive esophagitis, ulcers or tumor (5), but the patient refused any semi-invasive method. Oesophageal manometry and esophageal impedance or pH monitoring are not routinely performed in our hospital. Paraesophageal hernia cannot be healed spontaneously and can generate mechanical complications such as intrathoracic gastric volvulus with a double folding of the stomach around its axis.

Surgery is recommended because of the high risk of complications and due to the high amount of herniated stomach in the chest. It includes volvulus reduction and hiatus hernia repair without gastric resection, but by closing it (5,14). The surgery can be done laparoscopically and it is indicated for the symptomatic forms, patients being satisfied with the procedure (15,16). However, the latest studies show that the risk of acute symptoms occurrence in asymptomatic paraesophageal hernias decreases exponentially below 2%, after the age of 65, and the mortality rate approaches 1.4% post-operatively (17,18).

CONCLUSIONS

Hiatal hernias should be discussed in the differential diagnosis of hydroaeric mixed images in the lower chest radiograph examination, especially when respiratory symptoms are nonspecific or dominate the digestive one. Barium swallow imaging and CT scan, as well as digestive endoscopy confirm the diagnosis and specify the type and size of hiatal hernia. Paraesophageal hernia can lead to an increased risk of complications. Surgical solution, preferably laparoscopically should be considered especially in young and symptomatic adults.

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