Clinics in Surgery

Case Report
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A Way to a Man's Heart is through His Stomach

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Abstract

Thanks to the advent of advanced surgical techniques, partial lung resection through thoracoscopy has been increasingly used in far more cases of benign or malignant pulmonary lesions, providing with a significant improvement of the outcome. Though thoracoscopy is a less invasive technique, patients may rarely undergo unexpected late complications after operation. A rare case of left incarcerated diaphragmatic hernia of the stomach developed in a 46-year-old male patient as a late complication, four months after thoracoscopy-assisted atypical lung resection due to metastases from clear renal cell carcinoma.

Case Presentation

A 46-year-old Caucasian male came to our observation with a 10-days history of abdominal postprandial pain accompanied by a sense of constriction in June 2018. Pain improved with lateral decubitus and belching. The patient went to the emergency room twice, the latter the day before admission. During the first access to the emergency room he underwent chest and abdomen X-ray, as well as abdominal echography, all negative. During the second access, the patient underwent abdominal echography, again negative, whilst blood tests showed: WBC 15000 U/l; CRP 8.61 mg/ml; normal amylases and lipases. Both times he was treated with trospium chloride 40 mg/4 ml 1 vial, improving symptoms.

Anamnesis

The patient had a family history for cancer (father died at the age of 48 years old for lung cancer).

He is affected by multiple sclerosis in treatment with Natalizumab, rheumatoid arthritis treated with prednisone and arterial hypertension.

In 2017, due to renal clear cell tumor, he underwent nephrectomy. Due to relapse, he underwent a thoracoscopic left pulmonary apical nodulectomy and right lower lobe pulmonary lobectomy, with simultaneous diaphragmatic partial resection in February 2018. During the routine follow-up, a total body CT with contrast material, performed 2 weeks before admission, discovered an additional metastasis, at the apical segment of the left upper lung lobe.

Laboratory Tests and Clinical Course

At physical examination the patient was a febrile, with blood pressure 110/80 mmHg, breathing rate 20 per minute and oxygen saturation 97%. Lung examination showed: left chest side decreased movement, with breath sounds abolished to the base. The abdomen was treatable, widely painful to deep palpation, particularly in the epigastric region. Heart examination revealed tachycardia, confirmed at the ECG as sinus tachycardia.

Laboratory tests showed: WBC 12900/μL (58% granulocytes); haemoglobin 12.2 g/dL; platelet 518000 u/L. All other laboratory tests and hemogasanalysis values were within the reference ranges.

Abdomen ultrasound identified a left kidney hypertrophy, also confirming the absence of the right one. Chest ultrasound was significant in right lateral for a corpuscular fluid collection extending for about 4 cm.

Esophagogastroduodenoscopy, performed the second day, showed a dilated gastric cavity placed in a horizontal position, with difficult passage of the instrument as an obstruction from the outside. Due to this picture, both an abdomen and chest X-ray were performed, showing the presence of stomach in the left hemithorax (Figure 1). After gastric nasal tube placing, an abdomen and thorax CT with contrast material were performed (Figure 2), showing a 6 cm tear of the diaphragm and herniation of the stomach, perivisceral fat and left gastric artery, in the absence of signs of vessel

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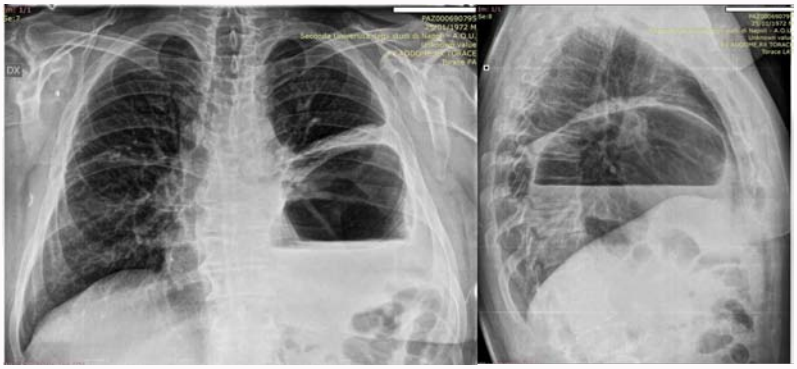

Figure 1: Chest X-Ray in PA and lateral view, showing air-fluid levels by the herniated stomach in the left pleural cavity.

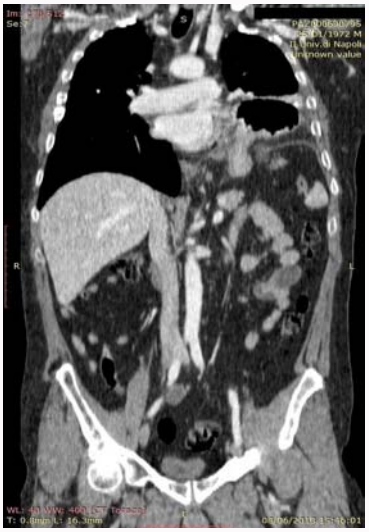

Figure 2: Contrast-enhanced, abdominal and thorax computed tomography with coronal reconstruction easily pointed out herniated stomach into the left pleural cavity through a possible defect of the left hemidiaphragm.

suffering. The patient was thus transferred to the thoracic surgery ward and urgently operated.

Discussion

Dyspepsia is a common gastrointestinal condition worldwide and may be correlated to either an organic (25%) or functional disease (75%) [1]. The most likely organic cause of dyspepsia, in this case, was the gastric ulcer disease, though symptomatology has a limited predictive value, as symptoms are non-specific [2]. Corticosteroids increase acid secretion and reduce the production of mucus by the gastric mucosa, delaying the healing lesions. This observation has conferred a biological plausibility to the association between chronic steroids users and peptic ulcer disease; though more studies are needed. Endoscopy represents the gold-standard for peptic ulcer diagnosis, also allowing us to discriminate between organic and functional forms.

Unexpectedly, esophagogastroduodenoscopy, chest ultrasound, thorax X-ray and CT with contrast material showed a picture of diaphragmatic hernia with stomach prolapse. Because of the presence of the organ in chest, the heart suffered from a compression, thus explaining the tachycardia symptom.

Etiologies for acquired diaphragmatic hernias usually occurring in adulthood are several: hiatal hernia, diaphragmatic traumatic rupture due to penetrating lesions or contusive trauma and iatrogenic, as in this case.

Chest radiography represents a good screening examination, though only the 50% of patients shows an abnormality, especially as the herniation of the bowel in thorax may initially be transitory [3]. CT-scan is the best imaging modality to diagnose diaphragmatic hernias. Its sensitivity is high, whilst specificity is only of the 50% for the right side [4]. Surgery is the gold-standard treatment of diaphragmatic hernia, even in asymptomatic patients, as intra-abdominal organs and tissues may prolapse and suffer from organ necrosis, due to the involvement of the nutritious artery [5].

Conclusion

The narrowing path of differential diagnosis is paved by our instinct and knowledge. The main aim of this case report is to highlight an unexpected, rare, late complication to improve our initial differential diagnosis, remembering that “When you have eliminated the impossible, whatever remains, however improbable, must be the truth”.

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