

Imaging of a rare case of Bochdalek hernia in an adult female

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Small bowel obstruction is usually seen in emergency room and represents at least 15% of hospital admissions.¹ It occurs when the flow of intraluminal contents is interrupted. We are able to distinguish two main forms of intestinal obstruction: functional due to altered intestinal physiology or mechanical. In advanced stage, small bowel obstruction leads to bowel dilation and retention of fluid within the lumen proximal to the obstruction. If bowel dilation is excessive, or strangulation occurs, perfusion to the intestine can be compromised leading to necrosis or perforation, complications, which increase the mortality, associated with small bowel obstruction. Hernia represents about 2% of all mechanical small bowel obstruction.² Sometimes the clinical presentation is challenging, especially in its early phases when clinical signs and symptoms are poor and overlap with other diseases. For this reason we believe that the imaging study of this case is worthy to be reported.

A 48 year-old female was admitted to our emergency room for persistent pain of 2 hours duration localized in the right lower abdomen radiated to the homolateral flank and associated with headache, nausea and vomiting. In the past the patient was operated of tonsillectomy and enucleation of uterin fibroma and suffered of migraine; she was not tolerant to non-steroidal antinflammatory drugs and triptans. Physical examination showed an increase of pain at palpation in the right iliac fossa and no alterations of the cardiopulmonary system. She was afebrile, blood arterial pressure was 110/70 mmHg and had a normal oxygen saturation. Blood analyses showed an increase of white blood cells (12.140 mmc); renal and hepatic functions were both normal as well as serum human chorionic gonadotrophin concentrations. Transabdominal ultrasonography showed no alterations of the liver, spleen, pancreas and kidney; a dilated bowel loops without free abdominal fluid was also seen (Figure 1). Patients underwent x-ray of the abdomen that showed a dilation of bowel and moderate gas retention without clear signs of intestinal obstruction (Figure 2) and the chest x-ray showed a raised left hemidiaphragm without densification of the lungs and the presence of

intestine in the thorax (Figure 3). The patient was treated with analgesics and fluids but the pain worsened; thus, a computed tomography of the thorax and abdomen was carried out. This examination showed a dilated loop of the ileum and ascendent colon, the presence of descendent colon above the diaphragm and segmental atelectasis of the left lower lobe (Figure 4). The patient was operated and at laparoscopy a herniation and strangulation of the colon was found as well as the presence of left postero-lateral defect of diaphragm; the thoracic herniated colon was reduced in the abdominal cavity and the diaphragm was repaired. The patient was discharged after seven days with a final diagnosis of intestinal obstruction due to Bochdalek hernia and the chest x-ray was completely normal (Figure 5).

Bochdalek hernia is a rare condition in adult and account from 0.2 to 17% of all diaphragmatic hernias;³ the symptoms are clinically vague and patient may present chest pain or may describe symptoms related to gastrointestinal tract as in our case.⁴ Most importantly, the lack of awareness of this illness leads to an incorrect diagnosis in about 40% of cases.⁵ Both early diagnosis with proper imaging and prompt operative management lead to good results, as our case demonstrates. Finally, as in our case, the ultrasonography has been found also able to show bowel obstruction,⁶ but it does not rule out a clear definition of intestinal occlusion.⁷ Thus, computed tomography is the most accurate

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method able to confirm the presence of diaphragmatic herniation as well as the presence of intestine in the thorax and its localization as cause of intestinal occlusion^{8,9} and facilitating the best management of this condition. In our opinion, when patient had mild signs of intestinal occlusion as demonstrated by abdominal ultrasonography, a computed tomography examination should be carried out for a better evaluation.



Figure 1. Transabdominal ultrasonography: dilation of small bowel loops associated with bowel wall thickness, presence of fluid-fluid levels and thickness of valvulae conniventes.



Figure 2. Plain x-ray of the abdomen: dilation of moderate gas retention without clear signs of intestinal obstruction.

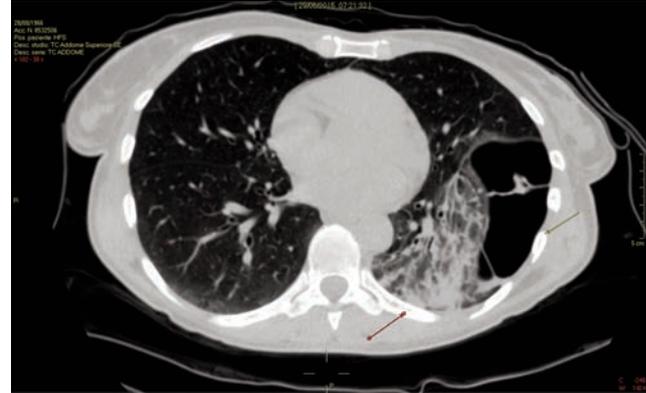


Figure 4. Computed tomography: herniation of the descending colon in left thorax (yellow arrow) and segmental atelectasis of the left lower lobe (red arrow).



Figure 3. Chest x-ray: suspected descending colon herniation in left thorax.

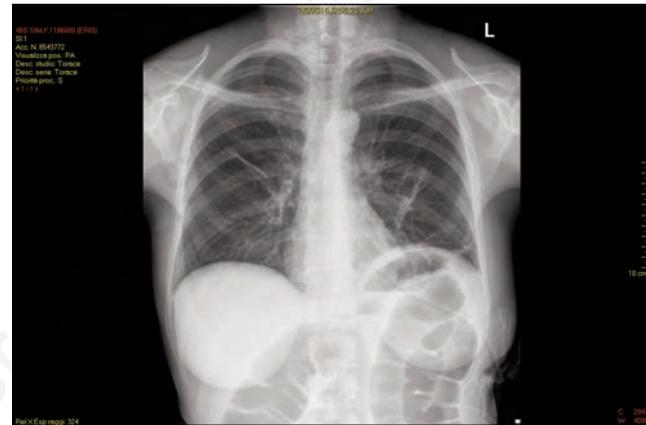


Figure 5. Chest x-ray at discharge: completely normal.

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