Intrathoracic colon carcinoma developing in a sac of Morgagni Hernia

Clinical History:
Complaint: High fever, pain in the lower thorax. History: Anorexia, weight loss and pain in the upper abdomen for a couple of weeks. On admission she had high infection parameters and in the diagnostic work-up a right-sided pleural empyema together with an intrathoracic solid mass of 10 cm in diameter was discovered. Two weeks later, after the treatment of empyema and transthoracic tru-cut biopsy of the mass, the patient was operated (right-sided thoracotomy).

Imaging Findings:
Complaint: High fever, pain in the lower thorax. History: Anorexia, weight loss and pain in the upper abdomen for a couple of weeks. On admission she had high infection parameters and in the diagnostic work-up a right-sided pleural empyema together with an intrathoracic solid mass of 10 cm in diameter was discovered. Two weeks later, after the treatment of empyema and transthoracic tru-cut biopsy of the mass, the patient was operated (right-sided thoracotomy).

Discussion:
The intrathoracic mass was an adenocarcinoma of the colon confined in a hernia sac, together with the herniated bowel segments. Compared to posterior diaphragmatic hernias (Bochdalek hernias), Morgagni hernias are uncommon and are seen most frequently on the right side, anteromedially (1). In most cases there is no peritoneal sac (2,3), however the long term survival of the patients may be due to the persistence of a confining pleuroperitoneal sac, rupture of which in later life coincides with the onset of symptoms (2). The herniated bowel segments and the tumor were enclosed in a sac in our patient and the diaphragmatic defect (4 cm in diameter) was unusually located anterolaterally, instead of the usual anteromedial localization. Unlike the sudden onset in infants, the symptoms in adults are insidious and caused mainly by obstruction of abdominal viscera (2,3). The patient may be totally asymptomatic or can be discovered coincidently (2). Our patient had been totally symptomfree for 60 years. Carcinoma of the colon in diaphragmatic hernias is uncommon. Previously two cases of colon carcinoma in Morgagni hernia have been reported (4,5). Although Bochdalek hernias are about ten times more common than Morgagni hernias, only one case of colon carcinoma associated with Bochdalek hernia has been reported (4). Although rare, presence of associated intraabdominal contents with an intrathoracic tumor should raise the suspicion of a gastrointestinal malignancy.
**Differential Diagnosis List:** Adenocarcinoma of the colon in a sac of Morgagni hernia

**Final Diagnosis:** Adenocarcinoma of the colon in a sac of Morgagni hernia

**References:**

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Description: Axial CT scan shows colon segments, mesentery and a solid tumor in the right hemithorax. The heart is displaced to the left. Origin:
Description: Axial T2-weighted fast spin echo image (TR/TE:1800/100) shows the low signal intensity mass and the gas containing bowel segment confined in the mesenteric fat tissue in the right hemithorax. Origin:

Description: Coronal T1-weighted gradient echo image (TR/TE/flip angle:15/2.8/20) shows the contiguity of the hernia sac and the liver. Origin:
Description: Sagittal T1-weighted gradient echo image (TR/TE/flip angle:15/2.8/20) better delineates the upward herniation of the bowel segments into the thorax. Origin: