Primary malignant tumours of the pericardium, pleura and peritoneum are rare. Typically, these tumours are characterized by serosal spread and shallow invasion into parenchymatous organs. Peritoneal mesotheliomas are less common than those of the pleura. We treated a man who had a primary peritoneal mesothelioma with an unusual presentation — an acute abdomen. We report this case and discuss the relevant literature.

Case report

A 79-year-old man was referred with constipation, worsening abdominal pain and weight loss. He complained of a 1-month history of gradual onset of severe generalized abdominal pain, abdominal distension and 2 episodes of vomiting. The patient reported increasingly irregular bowel movements for the preceding 3 weeks and had 13-kg weight loss over 1 year. His medical history included recurrent chest infections. He was a known smoker, with a 50 pack/y history. He had worked for 30 years at an asbestos factory.

On examination, the patient was dehydrated and pale but clinically stable. Abdominal examination revealed generalized tenderness with right upper quadrant distension with localized guarding and rigidity. Bowel sounds were quiet.

Results of blood tests demonstrated a raised C-reactive protein level of 77 and hemoglobin level of 11.5 g/L. His leukocyte count, blood urea, serum electrolyte and amylase levels and liver function tests were all normal. Carcinoembryonic antigen and CA19–9 levels were not elevated. A plain chest radiograph revealed increased lung markings in both lower zones, suggestive of pulmonary fibrosis. No free air was seen beneath the diaphragm. There were no signs of intestinal obstruction. An urgent computed tomography (CT) scan revealed extensive peritoneal thickening and enhancement, particularly in the right upper quadrant, with omental thickening. Free fluid was noted in the rectovesical space, but there was no ascites. A round, ill-defined, hypoechoic lesion, consistent with a metastatic deposit, was present in the right hepatic lobe (Fig. 1).

The findings were suggestive of advanced peritoneal malignant disease, and an ultrasound-guided biopsy of the peritoneum was undertaken to confirm the diagnosis. On day 3 of his admission, the patient suffered cardiac failure. After discussion with the family regarding the likely diagnosis, we initiated palliative care. Two weeks after admission, the patient died of multiorgan failure. Histologic examination of sections of the peritoneum demonstrated a spindle cell...
tumour with marked pleomorphism of cells and infiltration of fat. A firm diagnosis was reached after immunostaining showed diffuse cytokeratin and calretinin positivity, supporting a diagnosis of sarcomatoid mesothelioma (Fig. 2).

Discussion

Peritoneal mesothelioma was first described by Miller and Wynn in 1908. It is the only primary malignant tumour of the peritoneum. Malignant mesothelioma is an aggressive tumour of serosal surfaces. It commonly arises from the pleura (87%) or peritoneum (5.1%) and very rarely the pericardium (0.4%) and tunica vaginalis. Median survival from onset of symptoms is 11 months. The disease is more common in men (75%), with the peak incidence in the fifth to seventh decades.

The most common signs of peritoneal mesothelioma include abdominal distension, ascites, weight loss and an abdominal mass. A recent article described 3 patterns of clinical presentation that correlate with the CT manifestations of the disease. The most common presentation is the dry painful type, in which CT reveals multiple, small, peritoneal masses or a single dominant mass localized to a single abdominal quadrant. Less common is the wet type, which is associated with abdominal distension and ascites. The third manifestation is a combination of the 2 types. It tends to spread along serosal surfaces and to invade abdominal organs directly, most commonly the liver and colon.

There are 3 primary histologic appearances of peritoneal mesothelioma: epithelioid (55%–65%), sarcomatoid (10%–15%) and biphasic (20%–35%). Laparoscopic biopsy with immunohistochemistry helps to increase diagnostic accuracy. Calretinin appears to have the highest sensitivity for malignant epithelioid mesothelioma.

When possible, resection is performed; debulking is done in the late stages. New methods that are yet to be put into practice are photodynamic therapy and gene therapy, and studies are ongoing to discover new tumour markers for assessing the progress of this disease.

Malignant peritoneal mesothelioma is a rare but rapidly spreading tumour of the peritoneum. It is important to consider this diagnosis at an early stage and perform the necessary investigations. The treatment undertaken should be based on the results obtained and the success rates documented.

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References