Laparoscopic treatment of a solitary fibrous tumor of the greater omentum presenting as spontaneous haemoperitoneum



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A 24-year-old man was admitted at the emergency department with a lower quadrant abdominal pain and a slight hypoglycaemia. Abdominal ultrasonography showed the presence of a fluid peritoneal collection and a 3.2 x 2.5 cm hypoisoechogenic mass closed to the left iliac vessels with an echo-color-Doppler pattern similar to that of a hamartoma. CT examination confirmed the hypothesis of a vascular tumour. Although an abdominal angiography added no new information to establish a preoperative diagnosis, it showed a well vascularized mass. The patient underwent laparoscopy that revealed a bleeding mass of the great omentum. Laparoscopic stapled resection of the greater omentum was carried out. The solid lesion consisted of spindle-shaped cells, but no atypical cells were observed. The histological findings were diagnostic of a benign solitary fibrous tumor, an extremely rare neoplasm for a long time considered to be an exclusively thoracic lesion.

This is the first case of a solitary fibrous tumor presenting as haemoperitoneum and the first time it was removed laparoscopically. The patient is disease-free at the 2-year follow-up.

KEY WORDS: Greater omentum, Haemoperitoneum, Laparoscopy; Solitary fibrous tumour, Surgery.

Introduction

Solitary fibrous tumour is an uncommon spindle cell neoplasm for a long time considered to be an exclusively pleural-based lesion. In recent years the increased interest in this type of tumor and the definition of its histomorphological features led to its recognition in a wide variety of extrapleural sites where generally it is clinically detected for its mass effect ^{1,2}.

Here we describe the first case of a solitary fibrous tumor of the greater omentum.

The interest for such case is also related to its atypical clinical presentation and to the laparoscopic approach never described elsewhere to treat this type of neoplasm in its abdominal localization.

Case report

A 24-year-old man with a lower quadrant abdominal pain, diarrhoea and fever was admitted to the hospital. On physical examination pain at palpation of the lower quadrants was detected but no tenderness and Blumberg sign. Normal the biochemical examinations except for the presence of a mild hypoglycaemia (70 mg/dL) and anaemia (Hb 11.8 g/dL).

Echography revealed the presence of a little fluid collection in the Morrison space and in the Douglas fossa, a 3.2×2.5 cm hypo-isoechogenic mass was observed closed to the left iliac vessels with an echo-color-Doppler pattern similar to a hamartoma.

The day after the admission the abdominal pain became harder and the physical examination revealed Blumberg sign and abdominal tenderness.

Arteriography revealed a hypervascularized mass in the pelvic region with a 20 cm long artery coming from the left splenic artery (Fig. 2).

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CT scan was performed and the presence of the mass closed to the left external iliac vessels was confirmed; its densitometry was similar to the adjacent vascular structures, confirming the hypothesis of a vascular tumor. A concomitant haemoperitoneum was also observed (Fig. 1).





At laparoscopy, a smooth-surfaced, peducolated tumour of the greater omentum located in the right iliac fossa with a surrounding haemoperitoneum was observed. Laparoscopic stapled resection of the greater omentum was performed taking care to obtain macroscopic free margins. Solitary fibrous tumor was diagnosed by histopatological examination. Immunohistochemical staining tests for CD34, bcl-2 protein were positive, Pan cytokeratin reaction was negative and only 3 mitosis per 10HPF were observed.

Free margins were confirmed at the microscopic examination.

The postoperative period was uneventful and the patient was discharged on postoperative day 3. At the two year follow-up the patient is disease-free.

Discussion

Solitary fibrous tumor is a spindle cell tumor first described in the pleura, but also found in multiple extrathoracic sites including the meninges, orbit, nasal and paranasal sinuses. No cases have been previously reported in the greater omentum nor cases of spontaneous haemoperitoneum related to such neoplasm are described ^{1,2,3,4}. Most of the solitary fibrous tumors of the abdominal cavity are in fact detected in the retroperitoneal space and are incidentally diagnosed as a giant abdominal mass ²⁻⁴.

In 5% of cases it is manifested by abdominal pain and the symptoms of hypoglycemia secondary to the production by the tumor of an insulin-like growth factor ^{2,4,5,6}. In our case a low glycemic levels were found but not at a level to determine a hypoglycemic syndrome nor to justify its relation with the tumor.

As for thoracic forms, CT and the other imaging techniques lacked specificity for this tumor that can present



Fig. 2: Arteriography. The picture is the result of the fusion of two images resulting from the selective cannulation of the splenic artery showing the long artery irrorating the tumour.

a wide range of imaging findings, sometimes similar to that of a vascular tumor 7 .

As for intrathoracic lesions, the behavior of extrathoracic solitary fibrous tumors is currently unpredictable because of its recent histomorphological recognition and the lack of data from a long term follow-up ^{8,9}.

Generally most extrathoracic solitary fibrous tumors appear to pursue a benign course, although some have the potential to recur or metastasize ^{1,8}.

The patient after the laparoscopic resection presented at 2 year follow-up no local recurrences nor distant meta-

stases or trocar site seeding. This benign course can be attributed to the presence of a pedicle and to the low rate of mitosis, as previously demonstrated for thoracic lesions ⁷⁻⁹, and the presence of the haemoperitoneum nor the laparoscopic approach seem to have changed this biological behavior.

Although more detailed studies are necessary to define the optimal treatment for this tumor and to identify all its prognostic factors, from the present report seems likely that haemoperitoneum does not influence its prognosis in case of peritoneal localization and that laparoscopic resection, when feasible, can be safely performed.

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