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Ulysses S. Torres[a*], Daniel Nicoletti Cesar[b], Giuseppe D'Ippolito[ac]

[a]*Departamento de Radiología, Hospital São Luiz, Fleury Medicina Diagnóstica, São Paulo, Brazil*
[b]*Departamento de Radiología, Hospital de Base, São José do Rio Preto Medical School, São José do Rio Preto, Brazil*
[c]*Departamento de Diagnóstico por Imagen, Universidad Federal de São Paulo (UNIFESP), São Paulo, Brazil*

[*]*Corresponding author.*
E-mail address: usantor@yahoo.com.br (U.S. Torres).

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Spontaneous Hemoperitoneum Secondary to Metastases in the Liver Round Ligament, an Atypical Presentation☆

Hemoperitoneo espontáneo secundario a metástasis en el ligamento redondo hepático, una presentación atípica

Spontaneous hemoperitoneum secondary to intraabdominal metastasis is a very severe, rare emergency that is very difficult to diagnose. The symptoms and medical history of the patient should be considered from the onset.

Spontaneous intraabdominal bleeding is a very uncommon initial symptom in patients with intraabdominal metastases. Less than 2% of cases[1] present this symptom, and there are few reports in the literature. The primary tumours that are responsible can be very varied (melanoma, testicular, colon, stromal, etc.).[2] However, papillary renal cell carcinoma, with the intense microvascularisation of its metastases,[3] is an entity to consider, as we present in the following case report. Given the atypical location of the metastasis, there are no previous reports of this type in the literature.

The patient is a 76-year-old male with a history of type 2 diabetes mellitus, dyslipidaemia and arterial hypertension under medical treatment, and an infrarenal aortic aneurism measuring 4.8 cm that was under surveillance. In September 2014, the patient was diagnosed with type 2 papillary renal cell carcinoma and underwent laparoscopic right partial nephrectomy (pathology: pT1aN0). The patient's post-operative progression was favourable.

Six months after the surgery, the patient came to the emergency room with generalised abdominal pain, predominantly in the right hypochondrium and mesogastrium over the previous 24 h, associated with sweating and dizziness. On physical examination, the patient presented hypotension at 100/40 mmHg, 110 bpm and a distended abdomen with diffuse pain and signs of peritoneal irritation. Blood work showed hemoglobin 8.4 mg/dL, hematocrit 25%, and normal coagulation levels. Emergency CT scan reported anuncomplicated abdominal aortic aneurysm and widespread abundant free

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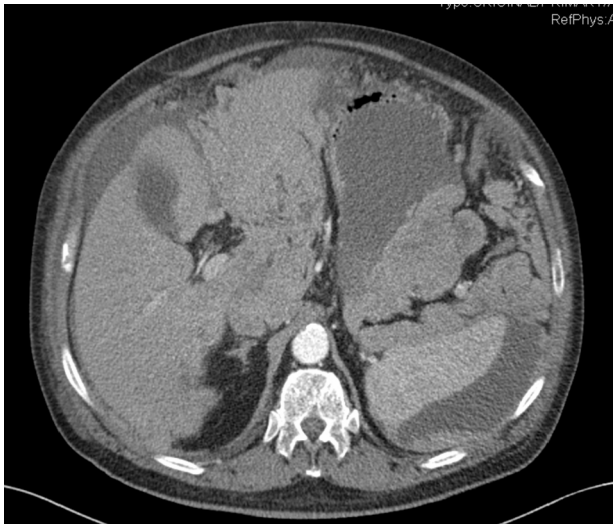

Fig. 1 – Hemoperitoneum and metastatic infiltration of the round ligament of the liver.

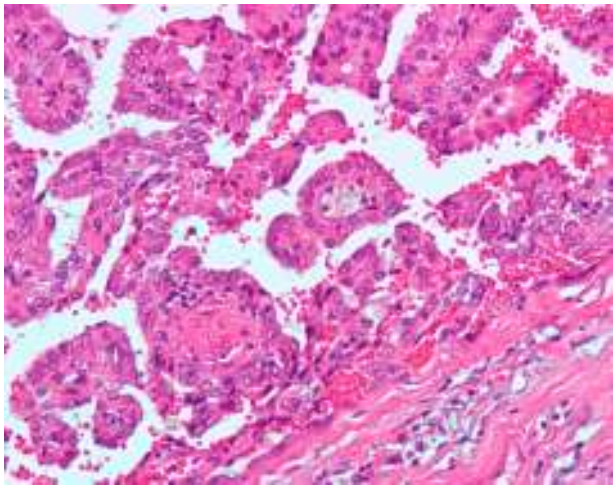

Fig. 2 – Metastasis of papillary renal cell carcinoma CD10+, with abundant hemorrhagic areas and neovascularisation.

fluid, especially in the superior hemiabdomen and pelvis (probably related with hemoperitoneum), as well as a tumour-looking mass of the round ligament of the liver (Fig. 1).

Given these findings, urgent exploratory laparotomy was indicated, which revealed diffuse hemoperitoneum of more than 3L, secondary to a metastatic mass measuring 10 cm and encompassing the round ligament with signs of active bleeding and extension to the hepatic hilum. There was no involvement of the liver parenchyma. Hemostasis of the lesions was achieved, multiple biopsies were taken, and an intraabdominal drain was inserted. The patient required transfusion of 3 units of packed red blood cells due to a postoperative hemoglobin level of 7.4 mg/dL, which later remained stable at around 10.5 mg/dL. The postoperative evolution was favourable, although the pathology study of the round ligament lesion reported ''metastasis of papillary renal cell carcinoma CD10+ with abundant hemorrhagic areas and neovascularisation'' (Fig. 2). The patient was referred to the oncology department in order to initiate palliative chemotherapy treatment.

Spontaneous hemoperitoneum is an uncommon cause of acute abdominal pain and is defined as the presence of blood in the peritoneal cavity in the absence of previous trauma. This clinical condition carries a high mortality rate in the absence of a prompt diagnosis.[4] There are multiple causes of spontaneous hemoperitoneum, including hepatic, splenic, gynaecological, vascular and altered coagulation states.[5] Among the hepatic causes, hepatic adenoma and hepatocarcinoma in a cirrhotic liver are the most frequent causes of spontaneous hemoperitoneum.[6] Massive bleeding due to tumour metastases is an uncommon condition[1] that may originate in metastases in the colon, lungs, kidneys or testicles. Reports of metastasis in the round ligament are exceptional in the literature, and the only case described involved breast cancer metastasis.[7] We have found no reports in the literature of hemoperitoneum due to bleeding lesions in this region. The location of papillary renal cell carcinoma metastases is very variable, but they most frequently affect the lungs (13%), bones (8%), skin (7%) and liver (6%). Because of their histopathology, they are highly vascularised tumours whose metastases tend to bleed,[8] so they are an aetiology to keep in mind.

We the authors believe that the peculiarity of this case report lies not only in the origin or the atypical location of the bleeding but also in the importance of a proper differential diagnosis in situations of acute abdomen and anaemia in patients with a history of neoplasms, especially in tumours with a tendency to produce metastases in the liver or other richly vascularised organs.

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Israel Abellán*, Antonio González, Antonio Bernabé, Pedro González

Servicio de Cirugía General y Aparato Digestivo, Hospital Universitario Los Arcos del Mar Menor, San Javier, Murcia, Spain

*Corresponding author.
E-mail address: isra_ab18@hotmail.com (I. Abellán).

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"Butterfly Wing" Shape Maximal Trans Sternal Thymectomy☆

Timectomía transesternal ampliada en forma de alas de mariposa

Extended thymectomy is superior to conventional thymectomy as it eliminates all tissue containing thymic remains, which could be responsible for the lack of remission after surgery.[1,2] Another reason to consider thymectomy in the treatment of this disease is the real possibility that myasthenic symptoms could be related with a thymoma, even when tomography shows a thymus with morphologically normal characteristics.

In this article, we describe how we conduct "butterfly wing" extended thymectomy for the surgical treatment of myasthenia gravis.

The indications for surgical treatment were based on the following criteria[3]: resistance to pyridostigmine or immunosuppressant treatment, generalised myasthenia with no improvement after 6 months of medical treatment, ocular myasthenia with partial response to pyridostigmine and lack of stable, complete remission for a period of more than 2 years. Prior to surgery, all patients received treatment with Intacglobin® 400 mg/kg, which was administered in 5 doses (3 pre- and 2 postoperative). This technique was performed by the same surgeon.

After median sternotomy, both pleurae were opened just under the lower end of the sternum, from the manubrium to the xiphoid process. We then began the dissection of both mediastinal pleurae and adhered fatty tissue. The way in which we carried out this dissection is the first modification of the traditional technique radical *en bloc* resection. For this, we used as a reference a longitudinal line from the base of the thymus to the diaphragm, as shown by the white arrow in Fig. 1a, where we initiated the dissection and resection of both pleurae. In this manner, we first dissected the left pleura to the phrenic nerve laterally and to the diaphragm underneath (Fig. 1b and c). The black arrows show the second modification of the traditional technique, involving the placement of sutures through the pericardium to then pull on them gently and facilitate the distal approach of the mediastinal pleura and accompanying fat, especially as we approach the phrenic nerve and diaphragm, which are areas with the most difficult access. This provided a better approach as we moved away from the midline. We then proceeded in the same manner with the right mediastinal pleura (Fig. 1d, see white arrows). Afterwards, both pleurae were dissected underneath from the diaphragm, laterally 1 cm above the phrenic nerve, turning to resect the largest possible quantity of fat, especially at the aortopulmonary window. The thymic vessels coming from the internal thoracic artery were ligated, and both dissected pleurae were placed outside the surgical field for the approach of the thymic veins. We then proceeded to mobilise the thymus, separating it from the brachiocephalic venous trunk and ligating the venous branches that drained into it. The fat occupying this region and the extrapericardial aortocaval space was also resected. We completed the dissection of the thymus and replaced all the resected tissue (over the pericardium), dissected the horns of the thymus and the accompanying fat from above the thyroid (respecting the parathyroid), the carotid arteries laterally and the trachea posteriorly. The branches coming from the inferior thyroid artery were ligated, concluding the complete resection of the thymus and all the fat that could include thymic remains and occupied the region between the thyroid above, the diaphragm below and both phrenic nerves laterally (Fig. 2a and b). Fig. 2c demonstrates the butterfly wing shape of the thymus and both mediastinal pleura with the accompanying fat when they were totally resected with this surgical technique.

Twenty-two patients were operated on with juvenile myasthenia gravis and a histological diagnosis of thymic hyperplasia. With a mean follow-up of 60.95 months (minimum 13 and maximum 145 months), 16 patients are treatment-free and 5 require less medication to control their myasthenic symptoms. No myasthenic crises occurred in the postoperative period. There were no deaths. One patient presented left pleural effusion that was evacuated by needle aspiration.

Extended radical thymectomy done in 2 *blocs* with the modifications that we have described in this article does not

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