A rare cause of systemic inflammatory response syndrome☆

Una causa infrecuente de síndrome inflamatorio sistémico

Liver haemangiomas are the most common primary tumours of the liver with a prevalence of 5–20%. Believed to be of congenital aetiology and benign, they consist of intrahepatic vascular malformations characterised by cavernous spaces lined with flat endothelial cells. They are most prevalent in middle-aged women, tend to be diagnosed as an incidental finding and generally manifest as single lesions measuring less than 4 cm. Large haemangiomas are known as giant or cavernous. They tend to be asymptomatic, irrespective of their size. Phenomena of intratumoral bleeding have been reported very sporadically, as well as Kasabach-Merritt syndrome and systemic inflammatory response syndrome secondary to haemangioma in very exceptional cases.[1,2]

In this article, we present a case of systemic inflammatory response syndrome secondary to a giant haemangioma.

The case concerns a 49-year-old female patient with a 10-cm liver haemangioma in the right liver lobe (RLL) discovered in 2013 following a computed tomography (CT) scan performed for another reason and asymptomatic to date. In January 2018, the patient experienced discomfort in her right upper quadrant and daily fever of up to 39 °c without signs of infection or constitutional symptoms. An abdominal CT scan was performed at another centre, which revealed growth of the haemangioma to 14 cm, with some intratumoral bleeding, associated with anaemia. In light of these findings, the patient underwent percutaneous embolisation of the right hepatic and phrenic arteries. Despite empirical antibiotic therapy with meropenem and teicoplanin, fever persisted after one month, so the patient was referred to our centre for diagnostic and therapeutic assessment. The blood test revealed elevated inflammatory markers with persistently high C-reactive protein levels of around 25 mg/dl (reference range: <1 mg/dl), without leukocytosis, and an abnormal liver profile of anicteric cholestasis (GGT 260 U/l, AP 175 U/l), with AST 39 U/l, ALT 43 U/l and bilirubin 0.4 mg/dl. All blood and urine cultures were negative. The study was concluded with an MRI that showed the 14-cm liver haemangioma in the RLL compressing the bile duct, right portal branch and suprahepatic vein, without collapsing them. No abscesses, sites of bleeding, lymphadenopathies or other abnormalities were observed in the structures of the abdominal or lower thoracic cavities. Having ruled out other processes that could explain the persistent fever, a suspected diagnosis of systemic inflammatory response syndrome secondary to giant liver haemangioma was established. Treatment was started with nonsteroidal anti-inflammatory drugs, without achieving clinical response. After deliberation by the multidisciplinary committee, the haemangioma was resected by right hepatectomy extended to segments IVa and IVb. The patient experienced no post-operative complications, inflammatory marker levels quickly fell and the fever abated. Analysis of the surgical specimen confirmed that it was a largely necrotic cavernous haemangioma with a peak diameter of 15 cm, with no sites of abscess formation or cholangitis and with free resection margins (Fig. 1).

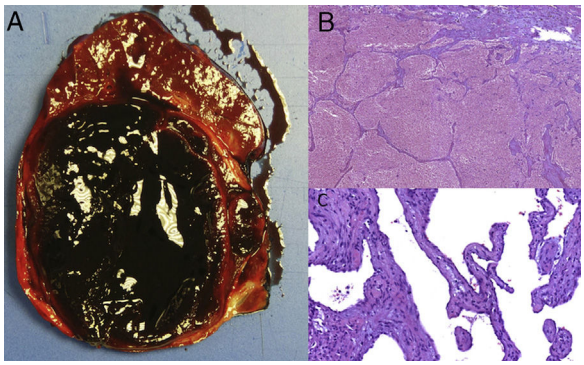

Figure 1 Surgical specimen of right hepatectomy: (A) macroscopic image. Well-defined tumour of friable haemorrhagic appearance with a peak diameter measuring 14 cm. (B) Microscopic image showing vascular canals containing blood, with extensive changes caused by coagulative necrosis (H&E, ×4). (C) Microscopic image at higher magnification showing vascular spaces lined with flat endothelial cells without atypia (H&E, ×20).

Following a literature review, very few cases (<20) of systemic inflammation associated with giant haemangioma were found. All exhibited high fever and sweating with elevated inflammatory markers and no leukocytosis, although without haemodynamic repercussions or impaired liver function, with negative screening for infectious disease, and haemangioma being the only finding. Although the exact pathophysiology of the syndrome is not fully understood, it has been suggested that it may be associated with the release of inflammatory mediators like interleukin-1 and interleukin-6 by the macrophages and endothelial cells of the haemangioma in response to intratumoral necrosis.[3,4] With regards to treatment, the administration of corticosteroids and anti-inflammatories has been reported with variable response rates. However, most cases ultimately required tumour excision by segmental resection or hepatectomy to definitively resolve the symptoms.[5]

In summary, although most giant liver haemangiomas are asymptomatic and do not require any form of treatment, in exceptional cases they can cause significant complications like systemic inflammatory response syndrome. In such cases, surgical resection is considered the treatment of choice as it achieves complete abatement of symptoms and resolution of lab test abnormalities.[2]

References

1. Toro A, Mahfouz AE, Ardiri A, Malaguarnera M, Malaguarnera G, Loria F, et al. What is changing in indications and treatment of hepatic hemangiomas. A review. 2014;13:327–39.

☆ Please cite this article as: Caballol B, Ruiz P, Ferrer-Fàbrega J, Diaz A, Forner A. Una causa infrecuente de síndrome inflamatorio sistémico. Gastroenterol Hepatol. 2019;42:383–384.

2. European Association for the Study of the Liver (EASL). EASL Clinical Practice Guidelines on the management of benign liver tumours. J Hepatol. 2016;65:386–98.
3. Pol B, Disdier P, Le Treut YP, Campan P, Hardwigsen J, Weiller PJ. Inflammatory process complicating giant hemangioma of the liver: report of three cases. Liver Transpl Surg. 1998;4:204–7.
4. Khalid M, Ahmad M, Jain A, Rizvi I. Atypical giant haemangioma of liver with systemic inflammatory manifestations. BMJ Case Rep. 2013;2013, 10.1136/bcr-2012-007075.
5. Smyrniotis V, Kehagias D, Arkadopoulos N, Kostopanagiotou G, Labrou A, Kondi-Paphitis A. Liver hemangioma with systemic inflammatory manifestations. Am J Gastroenterol. 2000;95:830–2.

Berta Caballol[a,*], Pablo Ruiz[a], Joana Ferrer-Fàbrega[b], Alba Diaz[c], Alejandro Forner[a]

[a] *Servicio de Hepatología, Hospital Clínic de Barcelona, IDIBAPS, Universidad de Barcelona, Barcelona, Spain*
[b] *Servicio de Cirugía Hepato-Biliar, Hospital Clínic de Barcelona, IDIBAPS, Universidad de Barcelona, Barcelona, Spain*
[c] *Servicio de Anatomía Patológica, Hospital Clínic de Barcelona, IDIBAPS, Universidad de Barcelona, Barcelona, Spain*

* Corresponding author.
E-mail address: CABALLOL@clinic.cat (B. Caballol).
2444-3824/
Published by Elsevier España, S.L.U.

Bile duct obstruction secondary to a pseudoaneurysm of the gastroduodenal artery. An unusual presentation☆

Obstrucción biliar secundaria a seudoaneurisma de la arteria gastroduodenal. Una inusual forma de presentación

We present the case of a 74-year-old female patient with a prior history of atrial fibrillation and chronic pancreatitis who attended A&E due to a two-month history of recurrent syncope. She exhibited jaundice and mild diffuse abdominal pain. The examination revealed sinus tachycardia and melaena upon digital rectal examination. The blood tests revealed moderate microcytic anaemia (9.2 g/dl).

An emergency gastroscopy was performed, which showed a Forrest III gastric ulcer with inflammatory edges. The follow-up blood tests showed complete cholestasis (GGT = 1,303 U/l, AP 725 U/l, TBIL = 6.65 mg/dl), with elevated cytolytic enzymes (GOT = 190 U/l, GPT 137 U/l). Amylase and lipase were normal, as were all other values, except the complete blood count that continued to show anaemia (Hb = 9.3 g/dl), so intravenous iron therapy was started. The diffuse abdominal pain, although mild (3/10 on the VAS), persisted despite medical treatment.

Given the clinical suspicion of choledocholithiasis, an abdominal ultrasound was performed that revealed dilation of the extrahepatic and intrahepatic bile duct with a common bile duct of 14 mm and doubtful choledocholithiasis. An ERCP was performed, which confirmed dilation of the bile duct without any filling defects and without trawling any gallstones with a balloon. A protruding papilla was also observed with macroscopically normal mucosa, from which biopsies were taken.

Given the suspicion of ampullary neoplasm, an abdominal contrast CT scan was conducted that confirmed a diagnosis of a periampullary pseudoaneurysm of the superior pancreaticoduodenal artery measuring 2.4 cm in diameter, which compressed the distal bile duct and caused an impression on the ampullary region (Fig. 1).

Finally, the biopsies obtained confirmed nonspecific reactive inflammation and ruled out malignancy.

With the final diagnosis of pseudoaneurysm of the gastroduodenal artery with compression of the bile duct in the ampullary region, it was treated with coil embolisation combined with drainage placed by percutaneous cholangiography to alleviate the distension of the bile duct until the pseudoaneurysm had shrunk, with its removal scheduled for discharge (Fig. 1).

The patient's blood test results gradually improved, with peak bilirubin values of 10.5 mg/dl returning to normal. Haemoglobin levels also improved to 12.7 g/dl.

Although vascular complications secondary to chronic pancreatitis are very rare, their true incidence and prevalence are difficult to estimate and may be as high as 10%.[1] The incidence of bleeding following pseudoaneurysm rupture in chronic pancreatitis is estimated to be 3.2%. The arteries most commonly affected are the splenic artery and the left gastric artery, followed by the gastroduodenal artery, the superior mesenteric artery and the hepatic arteries themselves.[2] Pancreatic pseudoaneurysm is primarily associated with pancreatitis whose course involves the formation of pseudocysts. It has also been associated with hepatobiliary surgery.

The rupture of a pancreatic pseudoaneurysm is the most common cause of bleeding in acute and chronic pancreatitis, accounting for up to 61% of all cases.

Several aetiopathogenic theories to explain pseudoaneurysms secondary to chronic pancreatitis have been postulated, which include the activation of intrapancreatic

☆ Please cite this article as: Casas Deza D, Gotor Delso J, Gascón Ruiz M, Bernal Monterde V, Jimeno Ayllón C, Gracia Ruiz M, et al. Obstrucción biliar secundaria a seudoaneurisma de la arteria gastroduodenal. Una inusual forma de presentación. Gastroenterol Hepatol. 2019;42:384–386.