

A curious liver abscess

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ABSTRACT

Liver abscesses are the most common type of visceral abscesses.

There is a variety of risk factors and organisms described as causing pyogenic liver abscess and this variability reflects the different routes of hepatic invasion.

Treatment usually includes drainage and antibiotic therapy. The authors describe a clinical case of a multiloculated pyogenic liver abscess, after an extensive study. He had lymphopenia and thrombocytopenia, acute kidney injury, hepatic cytolysis and elevated reactive C protein and procalcitonin.

Two blood cultures were performed and antibiotic therapy was started empirically with ceftriaxone 1g 12/12h. Because of maintenance of daily fever and elevation of inflammatory parameters, antibiotic therapy was altered to piperacillin/tazobactam 6/6h. No agent was identified on blood cultures.

He evolved with clinical and analytical improvement with medical treatment and no drainage was performed.

After 4 weeks on piperacillin/tazobactam, antibiotherapy was altered to amoxicillin + clavulanic acid per os.

He had no alterations at colonoscopy. The authors highlight this case for the unusual diagnosis in the absence of risk factors described by the ant the few cases described with good resolution only with medical treatment, so the presentation of this case becomes relevant.

Keywords: Liver abscess, Pyogenic liver abscess, Anti-bacterial agents, hepatomegaly

Introduction

Liver abscesses are the most common type of visceral abscesses [1] Risk factors include diabetes mellitus, underlying hepatobiliary or pancreatic disease, liver transplant and regular use of proton-pump inhibitors.

The infection may arise from portal vein pyemia, direct spread from biliary infection, surgical or penetrating wounds or hematogenous seeding.

Treatment usually includes drainage and antibiotic therapy [2]. Only few patients were successful treated without drainage of liver abscess [3].

Case Description

A 78-year-old man recurred to the Emergency Department due to head injury and disorientation over the previous 2 days. He had dementia nevertheless, treated with donepezilo 10mg id.

He was feverish, tachycardic, hypotensive – severe sepsis.

He had normocytic, normochromic anemia, lymphopenia and thrombocytopenia, acute kidney injury, hepatic cytolysis, elevated reactive C protein and procalcitonin. Cranioencephalic computed tomography (CT) scan showed no traumatic or vascular lesions. Cerebrospinal fluid, urinalysis and chest X-ray were unremarkable. Two blood cultures were performed and antibiotic therapy was started empirically with ceftriaxone 1g 12/12h. Abdominal ultrasound showed echogenic nodular lesion of 57mm diameter, requiring CT scan study

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Because of maintenance of daily fever and elevation of inflammatory parameters, antibiotic therapy was altered to piperacillin/tazobactam 6/6h. The thoracoabdominopelvic CT scan revealed a heterogeneous oval formation of the right hepatic lobe, with heterogeneous enhancement after IV contrast, with several liquid hypodense loci, surrounded by a capillary wall, with 80 x 68 mm dimension, admitting the diagnosis of multiloculated hepatic abscess. No agent was identified on blood cultures. He evolved with clinical and analytical improvement with antibiotic therapy and no drainage was performed. After 4 weeks on piperacillin/tazobactam, antibiotic therapy was altered to amoxicillin + clavulanic acid per os. A colonoscopy was performed, he had no alterations.

Discussion

Pyogenic liver abscess is characterised by intra-hepatic pus collection, secondary to a local inflammatory reaction by bacteria infection in the hepatic parenchyma [2]. Liver abscesses are the most common type of visceral abscess. There are some risk factors described, namely diabetes mellitus, hepatobiliary or pancreatic disease, liver transplant and regular use of proton- pump inhibitors. *K. pneumoniae* is a frequent pathogen and several studies have suggested an association with underlying colorectal cancer [1]. There is a variety of organisms described as causing pyogenic liver abscess and this variability reflects the different routes of hepatic invasion. Infection may arise from the biliary tree, from circulation (via portal vein or hepatic artery) or a contiguous focus of infection and surgical or penetrating trauma [4]. Typical symptoms are abdominal pain referred to the right hypochondrium, fever and hepatomegaly. Laboratory tests usually show leucocytosis (predominantly neutrophils), raised C reactive protein and alkaline phosphatase and abnormal liver function tests [2]. Usually we perform ultrasonography and CT scan that demonstrate a space occupying lesion compatible with liver abscess.

Fine needle aspiration for culture is the gold standard for diagnosis. Blood cultures are an important adjunct because they provide helpful information before they receive antibiotic therapy or aspiration of the abscess [4]. The standard of treatment resides in empiric broad spectrum antibiotics and drainage either by needle aspiration or percutaneous catheter drainage. Surgical drainage is usually reserved for complicated cases [5].

The authors describe the clinical case of a male patient with a 5.7cm diameter, multilocular liver abscess, after an extensive study. The patient empirically started a third generation cephalosporin. He evolved with clinical worsening and it was necessary to escalate antibiotic therapy. Blood cultures were negative. In this case, given the hepatic origin, we could choose to associate metronidazole to the previous antibiotic regimen, instead of alter antibiotic therapy to piperacillin/Tazobactam. Nevertheless, the patient evolved with apyrexia and improved general condition, repeated the CT scan study, showing reduction in the abscess dimensions previously visualized and it was decided multidisciplinary not to perform an abscess puncture and aspiration given the good clinical outcome. He completed 4 weeks of parenteral antibiotics and after that was changed to amoxicillin/clavulanic acid taken orally. He completed a total of 16 weeks of antibiotic therapy with good clinical and analytical evolution. As described in the literature, drainage of the abscess contents is a standard component of therapy and should always be attempted when feasible, for both therapeutic and microbiologic diagnosis [5].

Regardless of whether a causative organism has been identified, antibiotic therapy should be continued for four to six weeks total. If cultures are not available, empiric oral antibiotic choice include amoxicillin-clavulanate alone, as we did so [1]

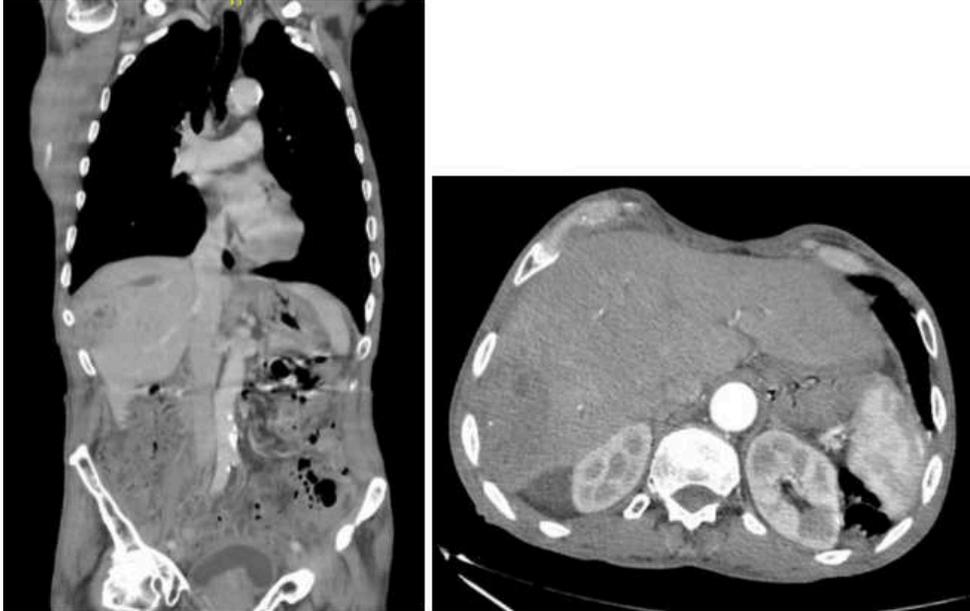
There is no optimal duration of therapy. It is usually determined by patient's clinical response and if the abscess was not drained, usually require longer courses of therapy.¹ Useful clinical indicators are absence of pain and temperature, as well as normalised white blood cell count and serum C reactive protein. The authors highlight this clinical case because of the lack of risk factors described in the literature and for the rarity of this case, by resolving only with medical therapy. There are few cases described with good clinical outcomes only with medical treatment, so the presentation of this case becomes relevant.

Declaration of interest

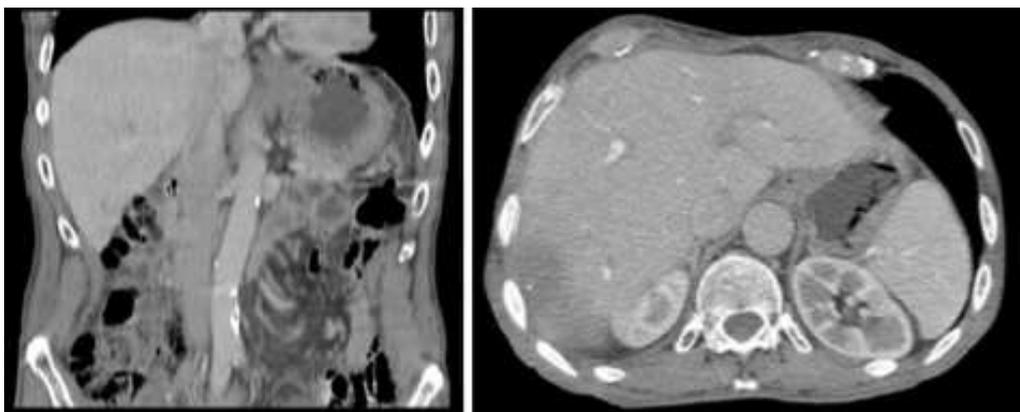
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Figures 1 and 2: Right hepatic lobe abscess, on 5th day of antibiotic therapy, in a transversal view (figure 1) and in an axial view (figure 2) of thoracoabdominopelvic CT scan.



Figures 3 and 4: Abdominopelvic CT scan after 4 months on antibiotic therapy in a transversal view (Fig. 3) and in an axial view (Fig. 4).