

## CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

### Surgery Quiz – Case 2

A 67-year-old male presented to our Emergency Department with fever (38.5 °C), chills and epigastric pain. For the past several weeks he complained of decreased appetite, generalised malaise and subfebrility (37–37.5 °C) for which he received over-the-counter NSAIDs. His symptoms had waxed and waned but worsened the last 48 hours. He had no prior abdominal operations and his past medical record was unrevealing apart from diabetes mellitus (DM) type 2, for which he received insulin therapy the last decade. On physical examination tachycardia, hepatomegaly, epigastric and right upper quadrant tenderness were the only findings.

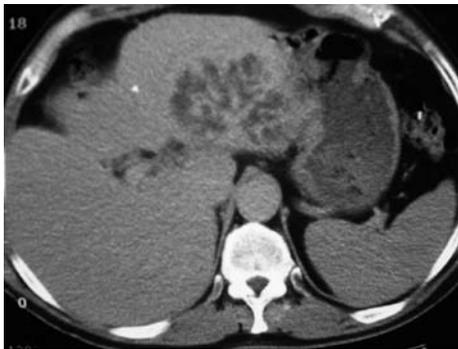
Laboratory examination revealed moderate leukocytosis (WBC 14,500/μL) and neutrophilia (85% neutrophils), increased ESR (70 mm/hour) and abnormal liver biochemistry (SGOT: 80 IU/L, SGPT: 90 IU/L, γ-GT: 80 IU/L, total bilirubin: 2.5 mg/dL, direct bilirubin: 1.5 mg/dL). Blood cultures were negative.

Chest and abdominal X-rays were non-diagnostic and an abdominal ultrasound (U/S) was ordered that demonstrated a large cavitory (cystic) lesion of mixed echodensity on the left liver lobe. Based on these findings the patient was admitted in our clinic for further evaluation of a possible hepatic abscess and was scheduled for an abdominal computed tomography (CT) the next day. He received prophylactic iv antibiotic therapy (metronidazole, third generation cephalosporine). An abdominal CT is performed (fig. 1). The patient underwent the same day a U/S-guided drainage of the abscess and a catheter was left in place. Samples for culture and cytological examination were sent and revealed *E. coli* and *Bacteroides* sp both sensitive to the empiric antibiotic therapy.

During his hospital stay the patient showed marked improvement of his clinical and laboratory status and on the 8th day he underwent a second abdominal CT which revealed an almost complete resolution of the abscess. Two days later the catheter was removed and the patient was discharged in good clinical condition, with the prescription of an oral antibiotic (third generation cephalosporin: cefixime) for one week and was scheduled for a follow-up CT after 6 months.

#### Comment

*Pyogenic liver abscess is an insidious disease, mostly seen in patients 50–60 years old, more often due to biliary tract disease. The potential roots of hepatic exposure to bacteria are: (a) biliary tree (e.g. biliary obstruction due to stone disease or malignancy), (b) portal vein (e.g. untreated appendicitis, diverticulitis, acute pancreatitis, inflammatory bowel disease, intestinal*



**Figure 1.** Abdominal CT scan demonstrating a hypodense mass 9×11 cm at the left lobe of the liver.

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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2008, 25(1):126

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*perforation, omphalitis in newborn), (c) hepatic artery (systemic bacteremia from e.g. pneumonia osteomyelitis), (d) direct extension of a nearby focus of infection (e.g. acute cholecystitis, perinephric abscess), (e) penetrating or blunt trauma and finally (f) unknown source (cryptogenic). The majority of hepatic abscesses involve the right lobe of the liver possibly because of the preferential laminar blood flow to the right side. About half of the abscesses are solitary. CT is more sensitive (95–100%) than U/S in diagnosing liver abscess, whereas MRI can be very helpful in distinguishing the etiology, but does not offer any other advantage over CT. About 40% of cases are polymicrobial (*E. coli*, *Klebsiella pneumoniae*, *Staphylococcus aureus*, *Streptococcus*, *Bacteroides* sp). Anaerobic organisms are involved in 40–60% of cases. Fungal and mycobacterial abscesses are associated with immunosuppression.*

*Cryptogenic abscess is the second most common cause of hepatic abscess and possible explanations include undiagnosed abdominal pathology, resolved infective process at time of presentation or host factors such as DM, malignancy, rendering the liver more vulnerable to transient hepatic artery or portal vein bacteremia.*

*In general, these patients should undergo, apart from U/S, CT, a thorough history, physical examination and laboratory workup in search of abnormalities of gastrointestinal tract or biliary tree. Further invasive procedures, such as ERCP/colonoscopy should be undertaken, based on clinical suspicion.*

*Therapy of hepatic abscess includes initiation of antibiotic therapy (including either ampicillin, aminoglycoside and metronidazole or a third generation cephalosporine and metronidazole for two weeks or more until clinical and laboratory evidence of ongoing infection), diagnostic aspiration and drainage of the abscess and finally surgical drainage in selected patients. The success rate of percutaneous aspiration and drainage is 60–90% and the majority of patients require more than one aspiration. Contraindications include: ascites, coagulopathy or proximity of abscess to vital structures. Laparotomy is indicated when there is failure of either antibiotic therapy or percutaneous aspiration and drainage and co-existence of intraabdominal disease that requires intraoperative management (infected hepatic malignancy, hepatolithiasis, intrahepatic biliary stricture). Relative contraindications of laparotomy include: multiple abscess, polymicrobial infections, associated malignancy or immunosuppression and co-existence of multiple medical problems. Liver abscess has 100% mortality, if untreated. Since 1980's mortality is reported between 10–20% with early diagnosis, appropriate and long-term antibiotic treatment. Poor prognostic factors include: multiple abscesses, age >70 years, associated malignancy, APACHE II score >9, delay in diagnosis, presence of complication (abscess rupture), hypoalbuminemia, encephalopathy and bilirubin >3.5 mg/dL.*

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