

Cryptogenic Liver Abscesses

Introduction

Bacterial abscess of the liver is a rare but serious infection with mortality approaching 30%. Biliary tract disease is the most common known cause; however, many cases have no specific known etiology. We report one such case of cryptogenic liver abscesses in a 58-year-old male with successful treatment.

Case Report

A 58-year-old white male presented with right upper quadrant pain and fever of three days duration. Initial laboratory evaluation showed 18,000 WBCs, normal AST and ALT, and mildly elevated alkaline phosphatase. Ultrasound of the abdomen on Day 2 showed evidence of fatty infiltration of the liver and three complex, predominantly cystic lesions in the liver. A CT scan performed on Day 3 revealed multiple low attenuation hepatic lesions. CT guided liver biopsies of these lesions on Days 3 and 8 did not reveal malignancy or any infectious etiology (no growth from aerobic, anaerobic, acid fast, or fungal cultures). On Day 16, the patient was started on high dose oral trimethoprim/sulfa and metronidazole following GI consultation because of concern for *Entamoeba histolytica* even though the patient tested negative for serum antibodies against this organism.

Because of continued pain and fever, the patient was admitted to the hospital for further evaluation and treatment on Day 21. Piperacillin/tazobactam was started empirically and a repeat CT of the abdomen revealed enlargement of the three previously noted lesions. On Day 23, a CT guided drainage of each of the three abscesses yielded purulent material. Cultures grew *E coli*, α -hemolytic *streptococcus*, and *B fragilis*, but were negative for yeast, fungi and acid-fast bacilli. Multiple blood cultures remained negative throughout the patient's illness. The patient had gradual defervescence of fever and resolution of leukocytosis with continuous percutaneous drainage and IV antibiotics.

He was discharged to home on Day 30 with two drainage tubes still in place and continued IV antibiotics through a peripherally inserted central catheter (PICC) line. The patient continued to improve with treatment, remained afebrile after discharge, and had final removal of all drainage tubes and discontinuation of IV antibiotics on Day 50 following initial presentation.

Discussion

This patient has done very well post treatment, with no recurrence of liver infection. One of the interesting features of this case was the difficulty in making a definitive diagnosis with two negative cultures on liver biopsy. However, persistence in treating based on his clinical picture proved to be the correct course. The third attempt at CT guided aspiration of the liver lesions did confirm abscess formation and the need for drainage and antibiotic treatment. The available literature indicates that percutaneous drainage is a standard means of treatment, whether via needle aspiration or by continuous catheter drainage. Though some institutions prefer one method to the other, there has been no definitive study indicating superiority.^{1,2} Due to the size of the largest abscess, continuous percutaneous drainage through catheters was chosen with good results.

Literature Review

Recent reports point toward a growing trend towards *Klebsiella pneumoniae* as a leading organism in liver abscess. However, the organisms recovered from this patient's abscesses are commonly from cultures of hepatic abscesses, especially *E coli* and *B fragilis*. In hindsight, the empiric trial of oral trimethoprim/sulfamethoxazole and metronidazole provided the correct coverage for the organisms present; oral antibiotics alone were predictably ineffective therapy given the presence of abscess formation. With regard to the choice of IV antibiotics, the use of piperacillin/

tazobactam was sufficient as monotherapy to cover the broad range of bacteria that were recovered from the abscesses. This choice correlated with recommendations that empiric treatment should at least give consideration to coverage of both gram negatives and anaerobes. Coverage with IV antibiotics was continued for a full four weeks in this patient in correlation with other reports recommending four to six weeks of treatment depending on clinical course.³⁻⁷

Conclusion

Bacterial liver abscess is a serious, sometimes fatal, infection that can present without specific etiology. The source of this patient's abscesses was unclear since he had no evidence of biliary tract disease and his blood cultures were negative. The patient underwent a follow-up colonoscopy as an outpatient but this did not reveal any significant findings that would predispose him to liver abscess.

An additional finding of note

Since the time of treatment this patient has been diagnosed with CREST syndrome. However, a review of available literature reveals no previously published case reports of a link between CREST syndrome and liver abscess. Therefore, we do not feel there is a causal relationship between the two but mention it as a point of interest in this patient's follow-up course.

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