



MANAGEMENT OF LIVER ABSCESS

Andee Dzulkarnaen Zakaria^{1*}, Syed Hassan¹, Siti Norzulaikha binti Ramely¹, Syed Azhar Syed Sulaiman², Amer Hayat Khan²

¹Department of Surgery, School of Medical Sciences, Universiti Sains Malaysia, Health Campus, Kelantan, Malaysia

²Department of Clinical Pharmacy, School of Pharmaceutical Sciences Universiti Sains Malaysia, 11800 Penang, Malaysia

*Corresponding Author Email: andee@kb.usm.my

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ABSTRACT

Liver abscess is a pus-filled area in the liver. It is a fairly common disease in Malaysia. The frequent types of liver abscess seen in Malaysia are amoebic and pyogenic abscess. Cultures for pyogenic organisms are often negative. The patient is 38 years old, male admitted to HUSM medical ward with complain of high grade fever for 4 days, on and off shortness of breath, chills, and rigors. Initially, he was treated as community acquired pneumonia. However, after abdominal ultrasound was done, it showed that there was a hypoechoic lesion in sub capsular region of segment IV (refer to Figure 1, 2), measure 4 cm in its largest diameter with irregular margin. Then, patient referred to surgical ward due to his new diagnosis which is liver abscess. The treatment of choice of liver abscess remains controversial. However, the drainage and antibiotic are the management of liver abscess nowadays. There are two types of drainage which are percutaneous and surgical drainage. The decision to do drainage is depend on some aspects which are size of the abscess, location of the abscess, capacity of the lobe, failure of causative treatment, and depth of the abscess. Close monitoring need to be done in long term used of antibiotics. Percutaneous drainage has been published to be safe as first line treatment for liver abscesses and more tolerable than surgical drainage.

Keywords: Malaysia, pyogenic abscess, Percutaneous drainage

INTRODUCTION

Liver abscess is a pus-filled area in the liver. It is a fairly common disease in Malaysia¹ and the most common type of visceral abscess; in a report of 540 cases of intraabdominal abscesses, pyogenic liver abscesses accounted for 48 percent of visceral abscesses and 13 percent of intraabdominal abscesses.² There are three major forms of liver abscess that have been classified by etiology; pyogenic abscess which is most often polymicrobial, account for 80 % of hepatic abscess cases in the United States, Amebic abscess due to *Entamoeba histolytic* accounts for 10 % cases, and fungal abscess, most often due to *Candida* species and accounts for less than 10 % cases.³ However, the frequent types of liver abscess seen in Malaysia are amoebic and pyogenic abscess. Cultures for pyogenic organisms are often negative.¹ There are many potential cause of liver abscesses, including abdominal infection such as appendicitis, diverticulitis, or a perforated bowel; infection in the blood, infection of the bile draining tubes, recent endoscopy if the bile draining tubes, trauma that damages the liver. The most common bacteria that cause liver abscesses are *Bacteroides*, *Enterococcus*, *Escherichia coli*, *Klebsiella*, *Staphylococcus*, and *Streptococcus*.^{4,5} The majority of patients presented with fever, chills, right hypochondrial pain, loss of appetite, and yellow skin (jaundice).

Case Presentation

The patient is 38 years old, male admitted to HUSM medical ward with complain of high grade fever for 4 days, on and off shortness of breath, chills, and rigors. He also complained having cough with chest pain, no night sweat and poor appetite before this. Initially, he was treated as community acquired pneumonia. On examination, patient was alert, conscious and pink. However, he appeared skinny, and jaundice. From pre-abdomen's result, it showed that there was lobe in the liver, the abdomen was mild tender and non-distended. His vital sign was normal except for his temperature which was high (38.7°C). Initial laboratory

values revealed low level of potassium (3.4 mEq/L). Abdominal ultrasound was done on next day since his fever did not go down and he also complained right hypochondric pain. The result showed that there was a hypoechoic lesion in sub capsular region of segment IV (Figure 1 and 2), measure 4 cm in its largest diameter with irregular margin. Then, patient referred to surgical ward due to his new diagnosis which is liver abscess. Initially, he was given IV Claforan® 1 g tds and T. Azithromycin 500 mg OD as empirical treatment for community acquired pneumonia. In spite of community-acquired pneumonia being a common disease, the classic diagnostic test that can easily and affordably be used in routine clinical practice lack specificity and sensitivity. Sputum gram stain may provide an early clue to diagnosis in the case of atypical pneumonia, but is troubled by contamination by oral flora. Besides, chest radiograph; a measure of arterial oxygenation, and full blood investigation also should be done. These tests will rarely provide a rapid and accurate diagnosis, so the initial therapy called empiric therapy is needed.

DISCUSSION

Liver abscess is a potentially lethal disease. After years, there has been significant improvement in its mortality. This has been attributed to the introduction of antibiotics, advances in imaging studies and critical care. The treatment of choice remains controversial. However, the drainage and antibiotic are the management of liver abscess nowadays. There are two types of drainage which are percutaneous and surgical drainage. The decision to do drainage is depend on some aspects which are size of the abscess, location of the abscess, capacity of the lobe, failure of causative treatment, and depth of the abscess. For this patient, the size of abscess is quite small (< 6 cm), and the location is superficial. However, his capacity of the left lobe is smaller than right lobe. The best treatment for this patient is treated with long term antibiotic and close monitoring every 2 weeks.



Figure 1: Abdominal Ultrasound



Figure 2: Abdominal Ultrasound

Antibiotic therapy as a sole treatment modality is not routinely advocated even though it has been successful in a few reported cases.³ Systemic antibiotic therapy is the mainstay of treatment. According to guidelines from the American Thoracic Society⁶ a β -lactam plus a macrolide are the strong recommendation which is level I evidence for inpatient, non-ICU treatment. Increasing resistance rates have suggested that empirical therapy with a macrolide alone can be used only for the treatment of carefully selected

hospitalized patient with non-severe disease and without risk factors for infection with drug resistant pathogens. However, the mono therapy is not routinely recommended. He also received T. Slow K 11/11 OD to increase his potassium level. Slow K is an electrolyte replenishes. Slow K, potassium chloride extended- release tablet USP containing 600 mg of potassium chloride (equivalent to 8 mEq) in a wax matrix. This formula is proposed to provide an extended- release of potassium from the matrix to minimize the chance of

producing high, localized concentrations of potassium within the gastrointestinal tract.⁷ After he was diagnosed as liver abscess, his antibiotic changed to IV Flagyl® 500 mg tds and IV Cefobid® 1 g bd. Mostly liver abscess is caused by anaerobic bacteria, thus, the choice of metronidazole is appropriate for this patient. While, cefoperazone is a broad spectrum activity and this drug is mostly used in surgical ward. C. Tramol® 50 mg tds also be given to this patient as analgesic to cover his right hypochondreic pain. It must be targeted according to locally prevalent organisms and to specimen culture sensitivity. Therapy less than four weeks is a significant predictor of failure, requiring subsequent predictor.⁸ Antibiotic may be the only alternative in patient too ill to undergo invasive procedures or in those with multiple abscesses not enable to percutaneous or surgical drainage. In these cases, patients are likely to require many months of antimicrobial therapy with serial imaging and close monitoring for associated complications. In Bamberger's review,⁹ there was only 61 % response rate in pyogenic liver abscesses when antibiotic alone were used and the median antibiotic duration was long (42 days). Large liver abscesses usually need drainage, in addition to antibiotics for effective resolution.⁹ medical therapy alone does not work because of large bacterial load, inactivation of antibiotics and ineffective medium for bacterial elimination. The duration of antibiotic therapy may be shortened with effective drainage.⁸ Percutaneous drainage requires local anesthesia and minimal sedation. It allows controlled drainage of large abscesses over a period of time with minimal hemodynamic and physiological stress to the patients. It is also the only definitive treatment for those with no other surgical pathology. Percutaneous drainage has been publicized to be safe as first line treatment for pyogenic liver abscesses and more tolerable than surgical drainage.^{8, 10} It also has lower morbidity and is definitely more acceptable to patients compared to surgery. However, a small proportion of patients still require surgical drainage.¹¹ It may be considered in large, multi located abscesses and those associated with concomitant biliary pathology.⁸ Surgical treatment also should be considered when clinically indicated and in those who grow yeast. On the other hand, a combination of broad spectrum intravenous antibiotics and radiology drainage usually allows resolution of pyogenic liver abscesses.¹¹

CONCLUSION

Patients are likely to require many months of antimicrobial therapy with serial imaging and close monitoring need to be done for associated complications. However, patient needs to undergo drainage if his condition becomes worse. From the studies that have been done, it showed that percutaneous drainage is safe as first line treatment for liver abscesses and more tolerable than surgical drainage.

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