Pyogenic Liver Abscess in Pregnancy

C.Tamer Erel[1], Koray Elter[1], Canan Akman[2], Sinan Çarkman[3]
İstanbul-Turkey

OBJECTIVE: To review and discuss the prognosis and current treatment modalities in pyogenic liver abscess during pregnancy.
DESIGN: A 28 years old pregnant woman who applied to the emergency unit of the Department of Obstetrics and Gynaecology, Cerrahpaşa School of Medicine, and was found to have pyogenic liver abscess during cesarean section is reported in this article. After the literature was reviewed, diagnosis, prognosis and treatment of pyogenic liver abscess during pregnancy, which is very rare, are also discussed.
CONCLUSION: A pregnant woman with pyogenic liver abscess who has poor prognostic factors, warrants laparotomy in the third trimester. For some abscesses which are not able to be drained during laparotomy, US guided drainage combined with antibiotic therapy is the method of choice. In the first or second trimester of pregnancy, according to the prognostic factors for hepatic abscess, US guided drainage may be performed as an initial procedure.
(Gynecol Obstet Reprod Med 1997; 3:459-462)

Key Words: Liver abscess, Pyogenic, Pregnancy

Pyogenic liver abscess during pregnancy which is very rare, has been also known to be associated with high morbidity and mortality rate, even in a nonpregnant woman. Pregnancy has been widely accepted to be an immunocompromised state. In pregnancy, normal anatomy of abdominal organs changes because of the growing uterus. Therefore, in spite of the developments in imaging techniques, it may be very perplexing to diagnose the origin of acute abdomen in a pregnant woman, who especially comes in septic shock. The treatment modalities in pyogenic liver abscess may also change from simply antibiotic therapy alone to surgery, including percutaneous abscess drainage under ultrasound (US) or computerized tomography (CT) guidance with or without combination of these treatments.[1,2,3,4,5,6]

Because of our case, we found out, from the results of reviewed literature, that the prognosis and current treatment modalities in multiple pyogenic liver abscess during pregnancy have not been discussed properly.

[1]Department of Obstetrics and Gynaecology, Cerrahpaşa School of Medicine, İstanbul University, İstanbul, [2]Department of Radiology, Cerrahpaşa School of Medicine, İstanbul University, İstanbul, [3]Department of Surgery, Cerrahpaşa School of Medicine, İstanbul University, İstanbul-Turkey

Address for Correspondence: C. Tamer Erel
P.K. 9 Cerrahpaşa, 34301
İstanbul

Submitted for Publication: 20.12.1997
Accepted for Publication: 02.02.1998

Case Report

A 28 years old pregnant, gravida 4, para 3 woman applied to our emergency unit in septic shock with the complaints of high fever, chills, abdominal pain, nausea and vomiting. She did not know the date of her last menstrual period and also did not have any antenatal follow-up. On presentation when examined, her blood pressure was 100/60 mmHg, pulse rate was 130/min., body temperature was 39°C and there were extensive rebound tenderness and pain with uterine contractions. On pelvic examination, vulva was oedematous, cervix was 3 cm. dilated, moderately effaced, soft and anteriorly deviated. Abdominal ultrasonography revealed a normal looking fetus of 33 weeks-gestational age with breech presentation. There were ascites and extensive false membranes in the abdominal cavity. Other abdominal organs were not evaluated properly on ultrasound examination because of the emergency of the situation and ascites and extensive false membranes which were limiting the examination. Laboratory values were as follows; hematocrit 28 %, leukocyte count 24,6x109/L, platelet count 182x109/L, total protein 48 gm/L, SGOT 1088 nmol.sec-1/L, SGPT 561 nmol.sec-1/L, BUN 3,5 mmol/L, total bilirubin 55 mmol/L, direct bilirubin 28 mmol/L. On urine analysis, albumin was negative, acetone and bilirubin were positive, urobilin, urobilinogen and sediment were normal. Emergency laparotomy was decided, because patient's condition deteriorated. The operation began through low midline incision. Ascites, which was approximately two litres, was aspirated. Male newborn who was 1800 gr. in weight, 47 cm.

in height and whose one-minute apgar score was 9, was delivered. Appendix and cecum appeared normal and incision was extended above the umbilicus. On exploration, multiple abscesses which were distributed throughout both lobes of liver, were detected in sizes ranging from about 5 cm. to 10 cm. and all other organs in the abdominal cavity including gallbladder, right and left colon, sigmoid colon, the intestines, kidneys and spleen seemed normal. Abscesses were aspirated and samples were sent for microbiologic examination. Drains were placed through the abscess cavities and at the cul-de-sac. Abdominal wall was repaired and no complication occurred. For the first 2 days following surgery she was treated at the intensive care unit and apart from fluid and electrolyte therapy, ceftriaxon (Rocephin 2 x 1 gr. i.v.), metronidazol (Flagyl 2 x 0.5 gr. i.v.), gentamycin (Genta 3 x 80 mg. i.v.) were begun and supportive therapy for anemia and hypoproteinemia was performed. Because microbiologic culture revealed E.Coli, antibiotic regimen was not changed. On the 3rd postoperative day, she experienced hypocalcemia and was treated. On the 4th postoperative day, thorax and abdominal CT showed bilateral pleural effusion which was more dominant at right, atelectasis of the posterobasal segment of the right lobe, hepatosplenomegaly, multiple abscesses which were distributed throughout both lobes and biggest of which had a diameter of 7,5 cm., free fluid at the perihepatic and right paracolic gutters. Antibiotic therapy was continued for 10 more days. On the 15th postoperative day, the clinical condition of the patient was stabilised and repeated abdominal CT showed some residual abscesses in the liver parenchyma. Residual abscesses were percutaneously drained under ultrasound guidance (Fig.I). One month after the drainage, the patient fully recovered (Fig.II).

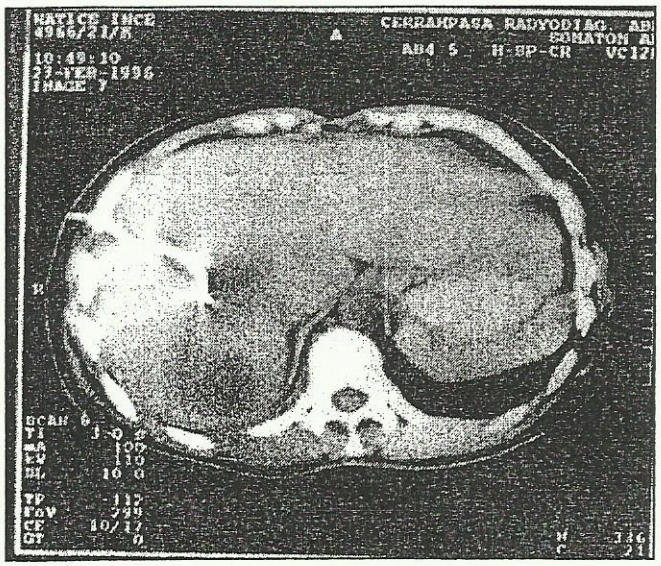

Fig.I. Percutaneous drainage of the liver abscess.

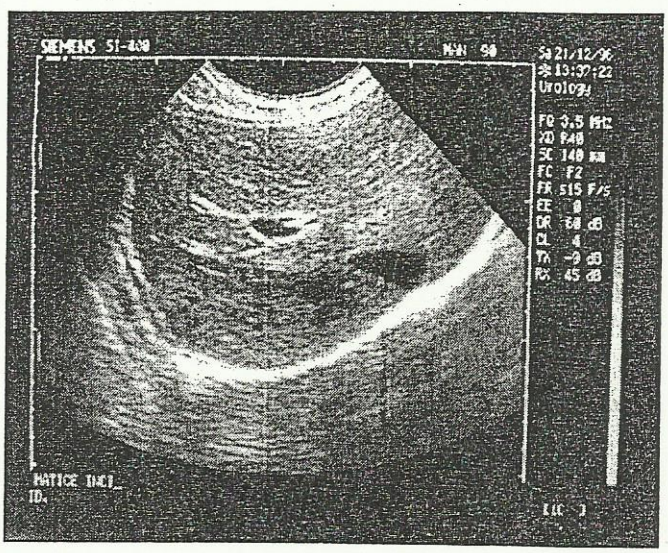

Fig.II. Ultrasonography of liver one month after percutaneous drainage.

The newborn was prophylactically treated by antibiotic therapy (gentamycin and ceftriaxon) and no complication occurred. He was discharged from the hospital on the 10th day.

Discussion

Basic requirement for effective therapy is early diagnosis. Some patients may respond to antibiotic therapy alone if diagnosed early. The introduction of high resolution imaging techniques, including US and CT, in diagnosis has improved the outcome. In spite of advances in imaging techniques, the mean duration of diagnostic delay is about 28 days.[2] In a pregnant woman in septic shock, ascites and false membranes can conceal and defer the diagnosis as in our case. Even diagnosis can be missed intraoperatively.[7] However, the significant reduction in diagnostic delay is associated with an improvement in the general condition of patients at the beginning of treatment. In our case, the laboratory data such as leukocytosis, hyperbilirubinemia, elevated serum transaminase levels and hypoalbuminemia, showing the diagnostic delay, were attributed to the hepatic failure due to septic shock.

Most cases require surgical drainage; especially percutaneous drainage under US or CT guidance has a wider acceptance recently.[4] Because of most studies coming from departments of radiology, the severity of the patient's condition is not well defined and some favour this technique as an initial procedure in the critically ill patient with poor prognosis in whom general anesthetic and surgery might prove fatal,[2] whereas some favour US guided drainage as an initial procedure for a stabilized patient without risk factors.[3,5] However this procedure is associated with a significantly

higher failure rate than surgical drainage. On the other hand, drainage via an indwelling catheter has some disadvantages, including the invasiveness of the procedure, risk of infection, discomfort for the patient, possible hematoma due to liver damage, the nuisance of maintaining a catheter and postprocedural complications. Drainage of multilocular hepatic abscesses via needle aspiration or indwelling catheter may be difficult.

A comparable study showed that there was no difference in morbidity and mortality between the surgical and US guided drainage.[1] Before deciding whether to perform surgical or percutaneous drainage, several factors must be considered including the anesthetic risk posed by the patient, the presence or absence of coexisting primary intraabdominal pathology warranting surgery, the relatively limited size of the drains that can be introduced percutaneously, the complications and failure rates of the two procedures, and the local expertise. The presence of a 33 weeks old gestation and undiagnosed origin of the septic shock seemed to be logical reasons to us to make a decision for laparotomy. Percutaneous and surgical drainage are not considered competitive but, rather, complementary techniques. Surgical drainage is usually reserved for patients who failed percutaneous drainage, those who require surgical management of the underlying problem such as biliary tract stones and for some patients with multiple macroscopic abscesses, ascites, pleural effusion, rupture of the abscess or poor prognosis of hepatic abscess.[6] Or in contrast as in our case, some abscesses can not be drained in laparotomy. After the patients condition is stabilised, US guided drainage combined with antibiotic therapy can be performed as a complementary method to surgical drainage. Retrospectively, in the presenting case the patient had the poor prognostic factors such as multiple abscesses, jaundice, hypoalbuminemia and leukocytosis for hepatic abscess and therefore also warranted laparotomy.

Ruptured pyogenic liver abscess should be suspected if septic shock and diffuse abdominal pain are found in a patient with pyogenic liver abscess, concurrent with high levels of bilirubin, aspartate aminotransferase, and blood glucose. Surgery is the only treatment for this condition. The overall mortality rate is higher in the ruptured pyogenic liver abscess than unruptured abscess. High mortality rate can result from the spilling of infective and toxic substances into peritoneal cavity.[8]

If we take into consideration that pregnancy is an immunocompromised condition, pyogenic liver abscess in a pregnant woman gains more importance. The likelihood of death from pyogenic liver abscess is higher with antibiotic treatment alone (45%) or percutaneous treatment (25%) than with surgical treatment (9.5%).[9] The primary determinant of outcome, however, was the underlying disease such as malignancy or an immunocompromised condition and rather than solitary versus multiple abscesses.

In an another retrospective review of percutaneous drainage of 355 abscesses in 323 consecutive patients, overall cure rate was 62.4%, with failure rate of 8.95%. There were 14.2% deaths in the follow-up period, of which 4.6% were believed attributable to sepsis or septic complications. The overall complication rate was 9.8%, most of which were minor in nature. For the patient exhibiting immunocompromise, representing 53.1% of the patient population, the cure rate was 53.4%, which was significantly lower than the cure rate of 72.6% for the immunocompetent patient population. However in this study, there was not any pregnant woman with pyogenic liver abscess as an immunocompromised patient. The recurrence rate was 2.1%, with all recurrences being within 3 months of initial drainage.[5] In our case it has not recurred up to now which is for the last 11 months. Also pus culture provides more accurate information than blood culture in choosing the correct antimicrobial therapy especially to plan an effective treatment while dealing with immunocompromised patients. Because the majority of abscess and bile cultures are positive, whereas 55% to 60% of blood cultures grow bacteria.

In conclusion, a pregnant woman with pyogenic liver abscess who has poor prognostic factors, warrants laparotomy in the third trimester. Meanwhile cesarean section should be performed. For some abscesses which are not able to be drained during laparotomy, US guided drainage combined with antibiotic therapy is the method of choice, after the patient's condition improved. In the first or second trimester of pregnancy, according to the prognostic factors for hepatic abscess, US guided drainage may be performed as an initial procedure and the patient should be closely followed up.

Gebelikte Piyojenik Karaciğer Absesi

C.Tamer Erel[1], Koray Elter[1], Canan Akman[2], Sinan Çarkman[3]
İstanbul-Türkiye

Amaç: Gebelikte karşilaştığımız piyojenik karaciger absesi olgularında prognozu ve çağdaş tedavi yöntemlerini tartışmak..

Materyal ve Metod: Olgu sunumu olan bu yayınımızda hastanemize septik şok bulguları ile başvuran ve sezaryen sırasında karaciğer absesi saptanan 28 yaşındaki gebe sunulmuştur. Literatür gözden geçirildikten sonra gebelikte az rastlanan bu durumun tanısı, prognozu ve tedavisi tartışılmıştır.

Sonuç: Piyojenik karaciğer absesi saptanan bir gebede prognoz kötüdür ve eğer üçüncü trimesterde ise laparotomi gereklidir. Laparotomi ile drenaj sağlanamayan durumlarda ise USG yardımıyla perkütan drenaj ve antibiyotik tedavisinin beraber uygulanması başarı sağlayabilir. Gebeliğin birinci ve ikinci trimesterlerinde, prognostik faktörler de değerlendirilerek, USG yardımıyla perkütan drenaj ilk seçenek olarak uygulanabilir.

Anahtar Kelimeler: Karaciğer absesi, Piyojenik, Gebelik

References

1. Bertel CK, Van Heerden JA, Sheedy PF. Treatment of pyogenic hepatic abscesses. Surgical versus percutaneous drainage. Arch Surg 1986; 121: 554-558.
2. Farges O, Leese T, Bismuth H. Pyogenic liver abscess : an improvement in prognosis. Br J Surg 1988; 75: 862-865.
3. Giorgio A, Tarantino L, Mariniello N et al. Pyogenic liver abscesses : 13 years of experience in percutaneous needle aspiration with US guidance. Radiology 1995; 195: 122-124.
4. Huang CJ, Pitt HA, Lipsett PA et al. Pyogenic hepatic abscess : changing trends over 42 years. Ann Surg 1996; 223: 600-609.
5. Lambiase RE, Deyoe L, Cronan JJ, Dorfman GS. Percutaneous drainage of 335 consecutive abscesses · results of primary drainage with one-year follow-up. Radiology 1992; 184: 167-179.
6. Chou FF, Sheen-Chen SM, Chen YS, Chen MC, Chen FC, Tai DI. Prognostic factors for pyogenic abscess of the liver. J Am Coll Surg 1994; 179: 727-732.
7. Gyorffy EJ, Frey CF, Silva J, McGahan J. Pyogenic liver abscess. Diagnostic and therapeutic strategies. Ann Surg 1987; 206: 699-705.
8. Chou FF, Sheen-Chen SM, Lee TY. Rupture of pyogenic liver abscess. Am J Gastroenterol 1995; 90: 767-770.
9. Branum GD, Tyson GS, Branum MA, Meyers WC. Hepatic Abscess. Changes in aetiology, diagnosis and management. Ann Surg 1990; 212: 655-662.