

## Fever with Severe Headache in a Middle Aged Thai Man

Suwanee Jidpugdeebordin, M.D.

Sompone Punyagupta, M.D.

### เรื่องย่อ

ไข้และปวดศีรษะมากในชายวัยกลางคน

สุวรรณณี จิตภักดิ์สินินทร์ พบ.\*, สมพนธ์ บุญยคุปต์ พบ.\*

\* โรงพยาบาลวิชัยยุทธ 114/4 ถนนเศรษฐศิริ พญาไท กทม. 10400

รายงานผู้ป่วยโรคฝีในตับจากเชื้อ *Klebsiella pneumoniae* ที่มาด้วยอาการไข้ ปวดศีรษะมาก ที่ขมับซ้ายแบบ neuralgia โดยตรวจร่างกายไม่พบตับโต หรือกอดเจ็บที่ตับ สามารถวินิจฉัยโรคฝีในตับได้จากการเพาะเชื้อจากเลือด เอ็กซเรย์ปอด พบกระบังลมด้านขวาสูงขึ้น และยืนยันด้วยการทำ Ultrasound ผู้ป่วยดีขึ้นจากการรักษาด้วยยาปฏิชีวนะ การเจาะหนองทางหน้าท้องหนึ่งครั้งหลังให้ยาปฏิชีวนะ 5 วัน ไม่พบเชื้อ ไม่ได้ทำการผ่าตัดหรือใส่ท่อระบายหนอง เชื่อว่าผู้ป่วยมีฝีที่ตับและมีการแพร่กระจายของเชื้อทางเลือดไปที่สมองจนทำให้เกิดอาการดังกล่าว เชื้อ *Klebsiella pneumoniae* เป็นสาเหตุสำคัญของฝีในตับในประเทศทางเอเชีย และการรักษาด้วยยาปฏิชีวนะที่ถูกต้อง เพียงพอที่จะรักษาให้หายได้ใน 15 วัน (วารสารโรคติดเชื้อและยาต้านจุลชีพ 2537;11:71-4.)

**Key words :** *Klebsiella pneumoniae*, Pyogenic liver abscess

Reprint request : Sompone Punyagupta, M.D., Vichaiyut Hospital, 114/4 Setsiri Road, Phyathai, Bangkok 10400, Thailand.

A 55 year-old Thai man H.N. 148789 was admitted to Vichaiyut hospital on January 29<sup>th</sup> 1994 because of severe left frontal headache for 4 days. The patient was healthy until 4 days before admission, he had low grade fever, loose stool 3-4 times per day and left frontal headache. The character of pain was severe paroxysmal sharp shooting on the left frontal area which lasted for few seconds. He had no nausea or vomiting. Physical examination revealed body temperature 37.8°C., pulse rate 88/min, respiration rate 16/min, blood pressure 120/80 mmHg. Heart and lungs were normal. Liver and spleen were not palpable. Nervous system was intact. There was no signs of increased intracranial pressure or meningeal irritation.

Vichaiyut Hospital, 114/4 Setsiri Road, Phyathai, Bangkok 10400, Thailand

Received for publication : March 30, 1994

**Laboratory examination :** Hct 43.5%, Hb 14.1 gm/dl WBC 16,800/cumm, PMN 90%, L 4%, Atyp. L 4%, M 2%, Urine examination: normal, non fasting blood sugar 153 mg/dl, BUN 17 mg/dl, cholesterol 190 mg/dl, total bilirubin 0.8 mg/dl, direct bililubin 0:3 mg/dl, SGOT 123 U/L (<40), SGPT 156 U/L (<40), Alkaline Phosphatase 65 U/L (<110), Albumin 3.6 gm/dl, Globulin 1.9 gm/dl, and two blood cultures were done.

The patient was initially diagnosed as trigeminal neuralgia of ophthalmic division probably related to some viral infection which induced fever. Carbamazepine and dexamethasone were then given.

One day after admission, he still experienced high fever and severe headache. Fundoscopic examination revealed blurring at the nasal part of optic discs. CT scan of the brain was done which showed mild degree of cerebral atrophy, more at the frontal lobes, irregular

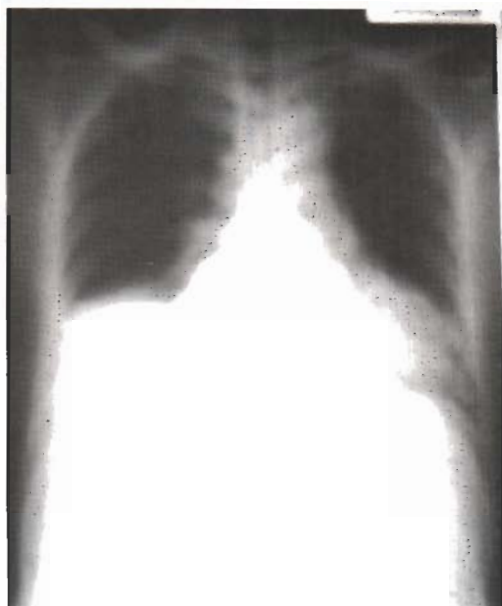


Fig.1 Chest X-rays showed markedly elevated right diaphragm with pneumonitis and pleural effusion.

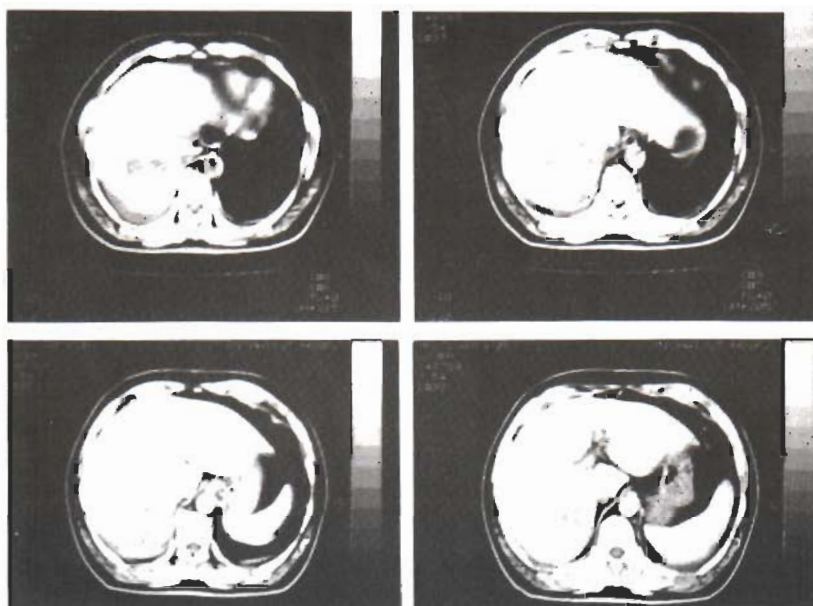


Fig.2 CT scan of the liver showed abscess cavity at the posterosuperior part of the right lobe.

mucosal thickening of sphenoid sinus and mild mucosal thickening of ethmoidal sinus.

Lumbar puncture was then performed. Opened pressure was 280 mmH<sub>2</sub>O and closed pressure was 180 mmH<sub>2</sub>O. CSF was clear colourless with 2 lymphocytes/cumm. Protein content was 66 mg/dl and sugar was 87 mg/dl (blood sugar 126 mg/dl). Gram, AFB staining and Indian ink preparation were negative. Culture revealed no growth.

Because of high CSF pressure, MRI scan was ordered to rule out venous sinus thrombosis and the result was insignificant.

On the second hospital day, the 2 blood cultures done on admission revealed the growth of *Klebsiella pneumoniae* which was susceptible to ofloxacin, ceftriaxone and netilmycin. Ceftriaxone 2 gm. bid and netilmycin 250 mg. daily were given intravenously. Chest X-rays and echocardiography were done to rule out endocarditis as a cause of septicemia. Echocardiography was negative but Chest X-rays showed significant elevation of the right diaphragm with minimal infiltration and effusion of the right lung (Fig 1). Subdiaphragmatic lesion was suspected, therefore sonogram of the upper abdomen was done on the 5th hospital day which showed mixed echoic mass 5.7×3.5 cms. at the posterosuperior aspect of the right lobe of liver.

The diagnosed of *Klebsiella* liver abscess with septicemia, secondary cerebritis and pneumonitis were made. The same antibiotics were continued. Blood

cultures done on the 3rd and 5th hospital day were negative. His general condition was stable but he still had fever with chill once or twice daily. On the 7th hospital day, liver aspiration with CT guided was done (Fig 2). The aspiration yielded about 10 cc. of bloody content. Gram and AFB staining and ameba were negative. Culture revealed no growth. Cytology of the pus was compatible with pyogenic liver abscess and no ameba or tumor cells were detected.

The same treatment was continued and fever subsided on the February 12<sup>nd</sup> (15 days after antibiotics therapy). Systemic antibiotics were given for 20 days and oral ofloxacin 400 mg daily was then replaced. He was discharged from the hospital on February 17<sup>th</sup> (22 days after admission) and oral ofloxacin was continued for 2 more weeks. Total course of antibiotics were 33 days. The followed up on March 15<sup>th</sup> he fully recovered.

## DISCUSSION

This patient presents atypical features of pyogenic liver abscess. The classical manifestations of pyogenic liver abscess i.e. fever, right upper quadrant pain and tender liver were not presented. This case was admitted because of fever and acute severe trigeminal neuralgic headache which misled the diagnosis. Subsequent spinal fluid examinations revealed only high CSF pressure indicated of central nervous system involvement.

However the CT scan and MRI of the brain showed no focal lesion.

The important finding that lead to correct diagnosis of liver abscess was the elevation of right hemidiaphragm in the chest X-rays, Prior to the availability of imaging devices, the chest X-rays abnormality was found in 70% of cases and considered a diagnostic clue of liver abscess. The isolation of *Klebsiella pneumoniae* from bloods also suggested Klebsiella liver abscess because associated septicemia was found in about half of cases (1, 2). Drug addiction and infective endocarditis must also be considered as a cause of community acquired Klebsiella septicemia.

*Klebsiella pneumoniae* was the most common cause of pyogenic liver abscess in this part of the world as reported by Cheng DL et al from Taiwan (1, 2) and Shimada H et al from Japan (3). In Thailand among the three reports (4, 5, 6) on liver abscess, the pyogenic liver abscess was much less common than hepatic amebiasis. *Klebsiella pneumoniae* liver abscess was most common ; recorded in 12 out of 42 pyogenic liver abscesses. It should also be mentioned that diabetes mellitus was a common compromised condition in about sixty percent of cases (1, 2, 3). At Vichaiyut hospital during 1989-January 1994, a total of 20 cases of liver abscess were diagnosed and *Klebsiella pneumoniae* liver abscess was found in 5 out of 8 pyogenic abscesses and 3 cases were diabetic. Septicemia, and septic metastasis to various organs such as lungs and eyes were frequently seen. In Taiwan (1, 2) Klebsiella liver abscess causing septic endophthalmitis was commonly found. We have never found such a complication in our cases. In this patient, he had septicemia and septic metastasis to brain, causing cerebritis, and to lungs, causing pneumonitis.

The policy on the treatment of pyogenic liver abscess has changed significantly since the availability of imaging devices i.e. ultrasonography and CT scanning in addition to the accessibility of effective antibiotics (8, 9). Previously surgical intervention was the mainstay in the treatment of pyogenic liver abscess. Nowadays drainage of the pus is generally considered as a must but percutaneous drainage under imaging devices (10, 11, 12) are replacing the surgery with the exception of abscesses secondary to the biliary tract obstruction and in cases with percutaneous drainage failure. There were some reports of successful treatment by antibiotics alone (13, 14, 15), eventhough in some series mortality was significant. In some cases the adequate percutaneous

drainage of the abscess are not feasible even by the aids of imaging devices due to the multiple lesions or the sites are difficult to be reached. We have had good results with the use of antibiotics alone in the treatment of pyogenic liver abscess or with a single aspiration of the abscess. Prior to the aspiration we try to give appropriated antibiotics for a few days just to prevent bacteremia during the drainage procedure. In this case the abscess situated in the posterosuperior right lobe about 9 cms. from the skin. The aspiration done 5 days after antibiotics therapy obtained bloody purulent pus of which the bacteria was not isolated. Blood cultures at that time were also negative. These finding confirmed that antibiotics alone was effective in eradication of organism from the abscess as well as from the blood. There is no need to do further aspiration or drainage. Fever which persisted for 15 more days probably represented the absorption of pyogenic materials from the abscess cavity.

## SUMMARY

We reported a patient who had *Klebsiella pneumoniae* liver abscess associated with septicemia and septic metastasis to the brain and lungs, who presented with fever and trigeminal neuralgic headache without any symptoms or signs of pyogenic liver abscess. The isolation of *Klebsiella pneumoniae* from bloods and elevation of the right hemidiaphragm in the chest X-rays lead to the definite diagnosis. The patient was successfully treated by appropriated antibiotics alone. A single aspiration of the pus after 5 days of antibiotics therapy yielded no organism. Fever disappeared after 15 days of treatment. *Klebsiella pneumoniae* is considered as a significant etiologic agent for pyogenic liver abscess in this part of the world, especially in diabetic patients.

## References

1. Liu YC, Cheng DL, Lin CL. *Klebsiella pneumoniae* liver abscess associated with septic endophthalmitis. Arch Intern Med 1986;146: 1913-6.
2. Cheng DL, Liu YC, Yen MY, et al. Septic metastatic lesions of pyogenic liver abscess. Arch Intern Med 1991;151:1557-9.
3. Shimada H, Ohta S, Maehara M, et al. Diagnosis and therapeutic strategies in pyogenic liver abscess. Internat Surg 1993;78:40-5.
4. Kurathong S. Liver abscess : Clinical analysis of 174 cases at Ramathibodi Hospital. Thai Intern Med. 1982;2:101-10.
5. Kladchareon N, Teeranut K, Voravethin N. Amoebic and pyogenic

- liver abscess: 27-year experience at Chulalongkorn Hosp. Chula Med 1989;33:847-60.
6. Klachareon N. Hepatic abscess in Thais. Intern Med 1990;6:70-4.
  7. Thamlikitkul V, Yamwong P. Liver abscess: a clinical study of 222 patients. J Med Assoc Thai 1990;73:266-8.
  8. Robert JH, Mirescu D, Ambrosetti P, et al. Critical review of the treatment of pyogenic hepatic abscess. Surg, Gynecol-Obstet 1992;174:97-102.
  9. Stain SC, Yellin AE, Donovan AJ, Brien HW. Pyogenic liver abscess: Modern treatment. Arch Surg 1991;126:991-6.
  10. Martin EC, Karlson KB, Fankuchen E, et al. Percutaneous drainage in the management of hepatic abscess. Surg Clin N AM 1981; 61:157-67.
  11. Gerzof SG, Robbins AH, Johnson WC, et al. Percutaneous catheter drainage of abdominal abscesses. A five year experience. N Engl J Med 1981;305:653-7.
  12. Berger LA, Osborne DR. Treatment of pyogenic liver abscess by percutaneous needle aspiration. Lancet 1982;1:132-3.
  13. Maher JA, Reynolds TB, Yellin AE. Successful medical treatment of pyogenic liver abscess. Gastroenterol 1979;77:618-22.
  14. Reynolds TB. Medical treatment of pyogenic liver abscess. Int Med 1982;96:373-4.
  15. Herbert DA, Fogel DA, Rothman J, et al. Pyogenic liver abscess: Successful non surgical therapy. Lancet 1982;1:134-6.