

LIVER ABSCESS IN SRINAGARIND HOSPITAL

Pisaln Mairiang MD.*
Paitoon Boonma MD.**
Kitti Chunlertrith MD.*
Eimorn Mairiang MD.***
Vallop Loopaiboon MD.***
Nittaya Chamadol MD.***

* Department of Medicine
** Bangkok Hospital, Bangkok.
*** Department of Radiology,
Faculty of Medicine,
Khon Kaen University,
Khon Kaen 40002, Thailand.

ฝีในตับในผู้ป่วยรับรักษาในโรงพยาบาลศรีนครินทร์

พิศาล ไม่เรียง วทบ. พบ.*
ไพฑูรย์ บุญมา พบ.**
กิตติ จันทรเลิศฤทธิ์ พบ.*
เอมอร ไม่เรียง วทบ. พบ.***
วัลลภ เหล่าไพบูลย์ พบ.***
นิตยา ฉมาดล พบ.***

* ภาควิชาอายุรศาสตร์
** โรงพยาบาลกรุงเทพ
*** ภาควิชารังสีวิทยา
คณะแพทยศาสตร์
มหาวิทยาลัยขอนแก่น
40002

การศึกษาย้อนหลังตั้งแต่ปี ค.ศ. 1986-1991 มีผู้ป่วยฝีในตับที่ได้ข้อมูลเพียงพอในการศึกษา 108 ราย เป็นผู้ป่วยชาย 68 ราย หญิง 40 ราย ส่วนใหญ่มีภูมิลำเนาอยู่ในภาคตะวันออกเฉียงเหนือ ผู้ป่วย 31 ราย เป็นฝี Melioidosis, 12 ราย เป็นฝี Amoebic และ 65 ราย เป็นฝี Pyogenic อื่น ๆ ส่วนใหญ่ของผู้ป่วยฝี amoebic จะมีอาการนำก่อนมาโรงพยาบาลเพียง 1 สัปดาห์ ซึ่งต่างจากฝี Melioidosis ประมาณ 1/4 มีอาการนำ 1 สัปดาห์ และผู้ป่วยอีก 1/4 มีอาการนำก่อนมารักษาถึง 4 สัปดาห์ ผู้ป่วยทุกรายของฝี amoebic มีอาการเจ็บที่ชายโครงขวาชัดเจน แต่ผู้ป่วยฝี melioidosis และ pyogenic อื่น ๆ ประมาณ 1/4 ไม่มีอาการดังกล่าว ผู้ป่วยฝี melioidosis 28 ใน 37 ราย มีโรคเดิมที่ทำให้ภูมิคุ้มกันต่ำ การตรวจทางรังสีอาจช่วยในการวินิจฉัยแยกโรค โดยถ้าพบ splenic abscess, renal abscess, Blood-borne pneumonia บ่งชี้ถึงฝี Melioidosis การรักษาส่วนใหญ่ใช้ยาปฏิชีวนะ หรือยามาเชื้อ amoebic ได้ผลดี

Introduction

Liver abscess is a common disease in Thailand. Most of liver abscesses are pyogenic or amoebic in origin(1). However pyogenic abscess cause by *Pseudomonas pseudomallei* (Melioidosis abscess) is among the most common pathogen in Northeast Thailand(2). Antibiotics treatment of melioidosis liver abscess is generally different from other pyogenic abscess(3). The criteria to differentiation between amoebic, melioidosis and other pyogenic liver abscess is important in clinical practice especially in Northeast of Thailand, where the incidence of melioidosis is high.

Objective

The study aim for presenting clinical features, radiologic findings and clinical response to treatment between amoebic, melioidosis and other pyogenic liver abscesses.

Study design

Retrospective study was carried out. Clinical data, radiologic findings of liver abscess in adult were analysed. From 1986-1991 there were 108 cases of liver abscess in adult that had adequate clinical and radiologic data for the study.

Results

Among 108 cases of liver abscess, there were 68 males and 40 females. The age ranged from 18-86 years old (average 47 years old). Almost all were people living in Northeast Thailand except one patient in amoebic group who came from central part of Thailand. Thirty one cases were melioidosis liver abscesses, 65 cases were other pyogenic liver abscesses and only 12 cases were amoebic liver abscesses.

Criteria for diagnosis of melioidosis liver abscess was any of these.

1. Positive pus and/or hemoculture(18/31)
2. High IHA titer (>160) + therapeutic respond (7/31)
3. Clinical + Therapeutic respond (6/31)

Criteria for diagnosis of amoebic liver abscess was any of these.

1. Positive Trophozoite in pus (1/12)
2. High titer for amoebic + respond to metronidazole (11/12)

Criteria for diagnosis of other pyogenic abscess was any of these.

1. Positive pus and/or hemoculture (19/65)
2. Respond to antibiotics known not to cure melioidosis or amoebic (35/65)
3. Positive gram stain of pus with mixed organism (11/65)

Table 1 Organism isolated from blood and pus of pyogenic abscess

	number of case
<i>E. coli</i>	8
<i>Klebsiella sp.</i>	4
Enterococci	3
Staphylococcus	2
<i>Pseudomonas sp.</i>	1
Enterobacter	1

Symptomatology

The most common presenting symptom was fever (83-93.5%) and fever with chills occurred more common in melioidosis and other pyogenic liver abscess than amoebic liver abscess. The duration of symptoms before the diagnosis was variable. In our amoebic abscess cases, 83% was diagnosed one week after the onset and all amoebic cases had duration of onset within two weeks. More than 1/4 of melioidosis liver abscess had duration of onset more than four weeks. Non of our cases, even in amoebic abscess, had diarrhea. Interestingly only 3/4 of melioidosis and other pyogenic abscess cases had right upper abdominal pain. This might lead to delay in correct diagnosis in the cases having no right upper abdominal pain (Table 2.)

Table 2. Show symptoms of liver abscess.

	Melioidosis	Other pyogenic	Amoebic
Duration of symptom			
< 1 wk	23%	32%	83%
1-2 wk	36%	48%	17%
2-3 wk	15%	8%	-
> 4 wk	26%	12%	-
Fever	93.5%	92%	83%
Chills	71%	60%	25%
Diarrhea	-	-	-
RUQ Pain	71%	75%	100%

The positive physical signs that helped differentiate melioidosis from the others were splenomegaly and pneumonia. Amoebic liver abscess tended to have no jaundice (Table 3). Septic shock was common in acute disseminated septicemic melioidosis. There was no shock in amoebic cases.

Table 3. Shows signs in liver abscess

	Melioidosis	Other pyogenic	Amoebic
Hepatomegaly	12 (39%)	19 (29%)	9 (75%)
Jaundice	15 (48%)	43 (66%)	3 (25%)
Splenomegaly	10 (32%)	5 (3%)	-
Pleural effusion	16 (23%)	10 (15%)	5 (42%)
Pneumonia	3 (9.5%)	-	-
Shock	8 (26%)	7 (11%)	-

The underlying immunocompromised condition was uniformly found in melioidosis liver abscess as shown on table 4. The two commonest conditions were DM. and Thalassemia. The common underlying diseases in the other pyogenic abscess was carcinoma of the liver which was high prevalence in Northeast Thailand. The pyogenic abscess associated with carcinoma of liver might occur after complicated cholangitis in malignant obstructive jaundice or superimposed bacterial infection on top of the necrotic liver carcinoma.

Table 4. Underlying disease of liver abscess

	Melioidosis	Other pyogenic	Amoebic
DM.	10	3	-
CRF.	3	2	-
NS.	2	-	-
Alcoholic	2	-	2
Thalassemia	6	-	-
Aplastic anemia	2	-	-
Acute leukemia	1	-	-
CBD. Stone	-	3	-
IHD. Stone	-	2	-
CA. liver	-	10	-
Cirrhosis	2	-	-
Appendicitis	-	2	-
Prostatic abscess	-	1	-
PID.	-	1	-

Only one patient in other pyogenic group had negative finding on ultrasonography and need computerized tomography which revealed an abscess at caudate lobe of liver. The ultrasonographic findings were shown on table 5. The melioidosis abscess tended to be multiple and involved both lobes of liver. Interestingly, in our cases, only 18% of other pyogenic abscess was multiple and only 15% involved both lobes. These were significant different between the two groups. In our 12 cases of amoebic abscess, none had multiple abscesses. All amoebic abscess in our study had abscess bigger than 5 centimeters. The findings of associated splenic and kidney abscesses suggested the diagnosis of melioidosis liver abscess. The typical cart wheel appearance in ultrasonography found in only 39% of our melioidosis cases.

Table 5. Ultrasonographic findings

	Melioidosis	Other pyogenic	Amoebic
Multiple	25 (80%)	11 (18%)	-
Both lobe	22 (71%)	10 (15%)	2 (16%)
Right lobe	7 (23%)	56 (88%)	9 (75%)
Size > 5 cm.	5 (17%)	41 (64%)	12 (100%)
Hypochoic	24 (77%)	42 (64%)	6 (50%)
Mixed echoic	3 (10%)	23 (36%)	6 (50%)
Splenic abscess	8 (26%)	2 (3%)	-
Kidney abscess	2 (6%)	-	-

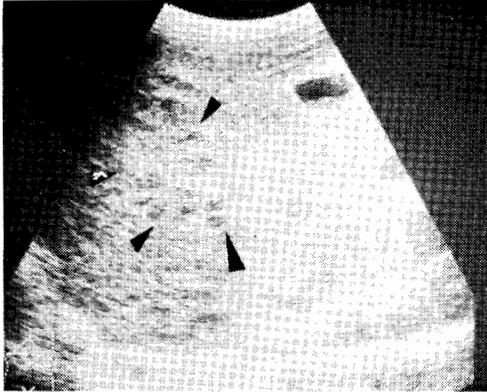


Figure 1 Shows typical cart wheel appearance found in melioidosis abscess

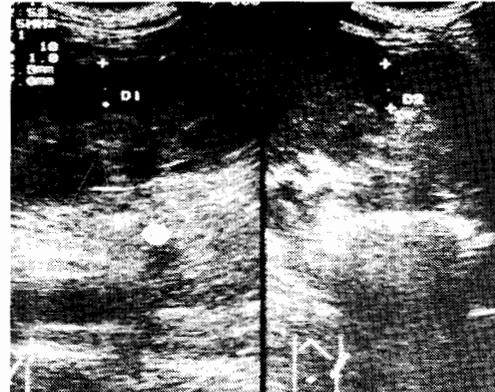


Figure 2 Shows associated splenic abscess in melioidosis

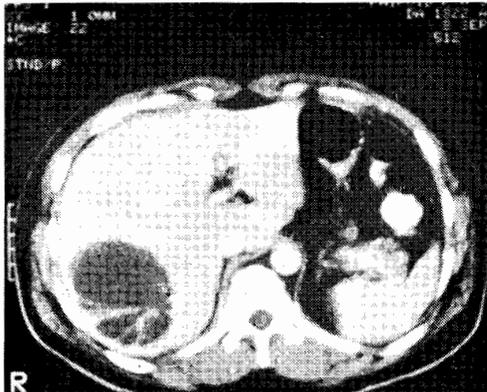


Figure 3 Shows big single abscess of amoebic abscess

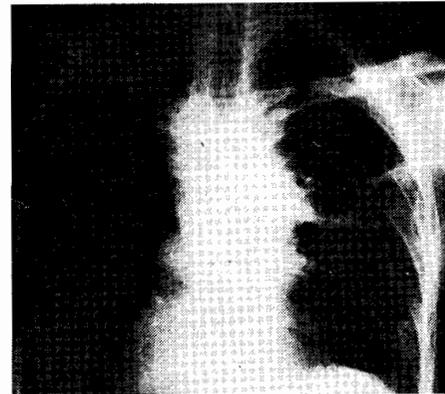


Figure 4 Shows associated pulmonary infiltration commonly found in melioidosis liver abscess

Melioidosis liver abscess still had high mortality rate at 23% (7/31). No case in amoebic group died. The mortality rate was high in pyogenic abscess patient with underlying malignant obstruction and old age. Surgical treatment was needed in 22% of melioidosis and pyogenic abscess but non in amoebic. The antibiotic regimens commonly used for the initial treatment of melioidosis liver abscess were doxycycline + Co - trimoxazole, ceftazidime + Co - trimoxazole, Co - trimoxazole + chloramphenical and ciprofloxacin. The antibiotic regimens commonly used in other pyogenic liver abscess were ampicillin + gentamicin, and piperacillin + amikacin. The only antimicrobial used in amoebic abscess was metronidazole. The repeated needle aspiration of pus was not used in our study.

Discussion

The commonest liver abscess in Thailand is amoebic liver abscess(1). However, our study showed that amoebic liver abscess is not common in Khon Kaen and Northeast of Thailand. There were only twelve cases of amoebic liver abscess being seen during 6 years. Since the incidence of liver fluke infection and cholangiocarcinoma in Northeast are high(4), these may lead to obstructive jaundice and complicate with ascending cholangitis and pyogenic liver abscess. Therefore, in our study, the commonest underlying condition of non-melioidosis pyogenic liver abscess was carcinoma of liver. Melioidosis is a common infectious disease in Northeast of Thailand (5). It is caused by *Pseudomonas pseudomallei* infection. The clinical manifestation of melioidosis can be ranged from localized

infection in one or two organs to disseminated septicemic form involving multiple organs. The hepatobiliary is one of common organ involvement in melioidosis(6). Since the clinical course of melioidosis can be rapidly progressive and fatal, the accurate and rapid diagnosis is important. Our study suggested that melioidosis liver abscess tended to occur in immunocompromised host such as DM., thalassemia, CRF., alcoholics and cirrhosis. About 1/4 of the cases had rapid onset and progressed to disseminated septicemic form. This group had poorest prognosis. Most of melioidosis liver abscess cases had clinical course as subacute to chronic. Our study suggested that melioidosis liver abscess should be suspected in any liver abscess cases whom come from Northeast of Thailand and have associated blood borne pneumonia and splenic abscess. The ultrasonographic findings of the melioidosis liver abscess are:

1. Multiple (80%)
2. Involvement of both lobe of the liver (71%)
3. size less than 5 cm. in diameter (83%)
4. Hypoechoic (77%)
5. Cart-wheel appearance (39%)

The ultrasonographic findings of associated splenic abscess and kidney abscess is even more strongly suggest melioidosis liver abscess. Our study confirmed previous report(7).

We are not certain why amoebic liver abscess is not common in this area. Most of our amoebic liver abscess cases lived in urban area, furthermore, 3 of 12 cases came from a leprosy sanatorium. We think that overcrowded condition and poor sanitation may be important factors lead to susceptible to amoebic infection. Ultrasonographic findings of twelve amoebic abscess cases are :

1. Involvement of right lobe of the liver (75%)
2. Single (100%)
3. Size > 5 cm. in diameter (100%)
4. Hypoechoic or mixed echoic lesion

We had not seen hyperechoic lesion in amoebic abscess as had been reported.(8)

In literature the three common underlying conditions for pyogenic liver abscess are common bile duct stones with ascending cholangitis,

intraabdominal infections (appendicitis, PID, diverticulitis etc.) and diabetes mellitus (9-12). Our study revealed that the commonest underlying condition was carcinoma of the liver. The mechanisms of carcinoma of the liver causing liver abscess may be 1). Obstruction of bile ducts and lead to cholangitis and liver abscess 2). necrotic tumor with superimposed bacterial infection. We diagnose pyogenic liver abscesses with malignancy by 1). an aspiration of pus with positive cytology for malignancy 2). an abscess with finding of a mass at porta hepatis caused dilation of intrahepatic ducts.

Malcolm McDonald et al(13). reported the commonest associated malignancy was carcinoma of pancreas. In our study cholangiocarcinoma was the commonest associated condition. Owing to the new and more potent antimicrobial agents and new techniques of repeated aspiration of abscess as well as percutaneous drainage under ultrasound guidance, the need of surgical treatment in pyogenic abscess is no longer common(14-16). The need for surgical treatment of our pyogenic abscesses was only 22%. However, percutaneous tranhepatic biliary drainages (PTBD) are needed in some cases of obstructive cholangiocarcinoma.

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