ORIGINAL ARTICLE

Management Of Liver Abscess: Our Experience

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Abstract

Being a tropical country liver abscess (amoebic) is endemic in this part of the world. Middle aged male are mostly affected. On the contrary pyogenic abscess incidence is much less in our country. Middle aged and old people with debilitated condition are the sufferer .With the improvement of diagnostic facilities liver abscesses are diagnosed much earlier. Since June 1993 to July 2004 three hundred and thirty six(n=336) patients of amoebic liver abscesses,30 cases of pyogenic abscess, 27 cases of hepatic cyst and 6 cases of hydrated cyst were treated by ultrasound guided aspiration, installation of catheter in the abscess cavity and injection of oxytetracycline,absolute alcohol into the cavity. Laparotomy was done in five cases. The results are analyzed and there is no mortality in this series.

Introduction

Amoebic liver abscess develop from amoebiasis of intestine. Amoeba cysts are ingested with uncooked food, salads, lettuce and water. Cysts are transformed into vegetative form in the large intestine and some people develop diarrhea or are asymptomatic and passes cysts with the stool. In a few number of people vegetative form of amoeba traverse into the liver via the portal venous system.Pyogenic liver abscess aetiology is unexplained in most of the cases but it may develop from infection in the portal venous drainage area or infection in other sites through the systemic circulation to the liver[1].

Symptoms are fever with chills and rigor with swinging temperature and sweating.Pain aching to sharp in nature is felt in right hypochondriac region or right side of the chest base and may radiates to the right shoulder at there may be enlarged tender liver.

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Symptoms are same in both types of abscesses and infected cysts.Usually pyogenic abscess occur in elder age group with diabetes or immunocompromised patients. Without treatment abscess may rupture into the pleura or peritoneal cavity, left lobe is less often affected[2].

Most patients having leucocytosis, X-ray chest often show right basal consolidation or effusion in pyogenic abscess patients. Liver function tests are usually normal. USG is very helpful guide for diagnosis. There is hypoechogenic cavity surrounded by the abscess wall.The abscess wall may be slightly irregular and indistinct because of scattered echoes that are produced by the non homogenous mixture of fluid and debris[3].

Amoeba is difficult to isolate from the pus only in less then one third of patients with pyogenic abscesses it is possible to isolate some cases are with growth like Streptococcus milleri, Escherichia coli, Streptococcus faecalics, Klebsiella pneumoniae, Proteus vulgaris or mixed growth[4].

Materials and Methods

A total of 399 patients were treated during the period June 1993 to July 2004 of which amoebic liver abscesses were 336,pyogenic liver abscesses were 30, symptomatic hepatic cysts were 27 and symptomatic hydrated cysts were 6.

Five patients underwent laparotomy, two for amoebic abscess, two for hepatic cyst and one for pyogenic abscess. Most of the cases 75% were referred from medicine department and 25% cases were day-case. 30 cm sheathed needle with stylet of 14 to 18 gauge size were used for aspiration and 10F to 12F size catheter with stylet were used for instillation in the abscess cavity. Aspirates were sent for culture and sensitivity test and staining. Oxytetracycline in amoebic abscesses absolute alcohol in hepatic cysts and 0.5% freshly prepared silver nitrate solution in hydrated cysts were used for installation into the cavity.

Procedure

All aspirations were done under ultrasound guidance, liver was scanned thoroughly and nearest point from the skin to the abscess was selected for aspiration. With aseptic condition skin was infiltrated with 2% lidocane solution. A small nick was made with no. 11 blade then the needle was introduced into the centre of the cavity after removing the stylet aspiration was done but sometimes needle may be blocked by debris but it could be easily cleaned by reintroducing the stylet. 90% aspiration was done between the ribs through the pleura as most of the abscesses were located in the posterior-superior and inferior aspect of the right lobe of the liver. The procedure was well tolerated by patients with good compliance.

Catheter with stylet was introduced through the right sub costal region under ultrasound guidance. Special precaution was taken for aspiration of hydatid cyst. Needle was introduced through the nearest point of the skin to the center of the cyst under ultrasound guidance then 10 to 15 ml of fluid was aspirated the appearance of the fluid is diagnostic it is very clear like water, keeping the needle in site 0.5% freshly prepared silver nitrate solution 10 to 15 ml was injected into the cyst and was kept for 5 minutes then aspiration was done till possible. Again 2 to 3 ml of 0.5% silver nitrate solution was injected into the cyst then the stylet of the needle was reintroduced before withdrawing the needle.

Aspiration was done in one to four sessions in amoebic, pyogenic abscesses and hepatic cysts, only single aspiration was done in hydrated cyst .Catheter was introduced in six cases (n=393 - 1.52%) through the pleural space and was kept for 5 to 7 days. Laparotomy was done in five cases (n=393 - 1.27%).

Table – I Number of patients in age and sex variation in four categories with laparotomy and percentage

Amoebic liver abscess	n=336 Age (years) 15 - 65, mean -40	Male -298 (88.69%)	Female -38 (11,30%)	Laparotomy 2-(0.59%)
Pyogenic liver abscess	n=30 Age(years)25 - 80, mean -52.5	Male -21 (70%)	Female -9 (30%)	Laparotomy 1-(3.33%)
Symptomatic hepatic cyst	n=27 Age(years) 25 - 75, mean 50	Male -18 (66.66%)	Female -9 (33.33%)	Laparotomy 2-(11.76%)
Symptomatic hydrated cyst	n=6 Age(years) 25 - 55, mean -40	Male -4 (66.66%)	Female -2 (33.33%)	Laparotomy 0

Table - II Result of culture and staining

Amoebic liver abscess n=336	Positive culture-28(8.33%)	Negative culture-308(91.66%)	Positive gram staining-64(1.90%)	Presence of amoeba in pus-5(1.48%)
Pyogenic liver abscess n=30	Positive culture-11(36.66%)	Negative culture-19(63.33%)	Positive gram staining-14(46.66%)	
Symptomatic hepatic cyst n=27	Positive culture 6(22.22%)	Negative culture-21(77.77%)	Positive gram staining-8(29.62%)	Staining for malignant cell - negative
Symptomatic hydrated cyst n=6	0	0	0	Serological test for hydrated antibobies - 5(83.33%)

Table-III Distribution of abscesses / cysts in the liver

Amoebic liver abscess n=336	Single 327(97.32%)	Multiple (two) 9 (2.67%)	Rt. lobe 326(97.02%)	Lt. lobe 10(2.97%)	In both lobe 0
Pyogenic liver abscess n= 30	25(83.33%)	5(16.66)	27(90%)	1(3.33%)	2(6.66%)
Symptomatic hepatic cyst n=27	25(92.59%)	2(7.40%)	27(100%)	0	0
Symptomatic hydrated cyst n=6	6(100%)	0	0	0	0

Discussion:

Usually in amoebic liver abscess symptoms occur when the size of the abscess is 2 cm or more[5]. At this stage, medical treatment with metronidazole and ciprofloxacin orally most patients respond. We have treated by aspiration of size more than 4 cm.Average size of abscess was 6 cm.Most patients required second and third session aspiration and only in six patients n=336 (1.52%) we have inserted catheter which were big size abscesses nearer to the right sub costal region. Simple aspiration is cost effective and patient does not have to stay in hospital. Second and next session of aspiration could be done on out patient basis.Laparotomy was done in two cases n=336 (0.59%) because both cases ruptured into the peritoneal cavity prior to aspiration. CT guided apiration was done in five cases n=336(1.48%) because abscesses were in the posterio- medial aspect to avoid injury to the nearer structures[6]. We used oxytetracycline dihydrate 3ml to 4 ml after aspiration of the abscess as we have seen in second session aspiration pus collection was less and more liquefied and was easy for aspiriition. We did not have any untoward effect during the procedure, local anaesthetic must be adequate. The colour of the pus is diagnostic it is light to deep chocolate brown in colour. In all series isolation of amoeba was insignificant in our series all patients were on metronidazole prior to aspiration as in our country patient can buy medicine over the counter and good number of patients had self medication.

Pyogenic abscess patients were quite ill at the time of diagnosis and all patients were on multiple antibiotics, eleven n=30 (36.66%) patients were diabetic. We did not have any morbidity by aspirating through the pleura[7-9]. In one patient we had to undergo laparotomy as pus was very thick and the abscess was in around segment-1 area, abscesses around this area is difficult for aspiration by ultrasound guidance.One to three sessions of aspiration were done in this group of patients and aspiration of multiple abscesses in single patient was done in the same session. In this group of people recovery was delayed but eventually all of them left hospital uneventfully.
The colour of pus was creamy white to pale greenish and liver function tests was normal in this group of patients.

Hepatic cyst patients were all symptomatic though simple cysts are found in about 1% of the necropsies in adults[10]. In this group of patients three to four sessions of aspiration were done and after each aspiration 20ml to 30ml of absolute alcohol was installed in the cyst cavity[11]. In two patients laparotomy was done and in both cases cyst wall was very friable and necrosed due to the effect of alcohol. Conventional omentoplasty was done in both the cases. Symptoms of the cysts were due to infection and the source was not identified.All patients were asymptomatic up to one year follow up except two who underwent laparotomy.

Hydatid cyst cases were symptomatic and we did not face any adverse effects during aspiration. All cysts fluid were clear non of them were bile stained for so we installed silver nitrate solution[12], initial aspiration was easy but at the end needle was blocked repeatedly due to debris which was over come by reinserting the stylet and installing silver nitrate solution . All of the patients were asymptomatic at follow up though the number of patients was only six in this group.

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