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RESEARCH ARTICLE

A PROSPECTIVE COMPARATIVE STUDY TO EVALUATE CLINICAL OUTCOME WITH VARIOUS MODALITIES OF TREATMENT FOR LIVER ABSCESS.

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Abstract

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Introduction:-

Liver abscess is very common problem in India and tropical countries¹. Among pyogenic and amoebic liver abscess amoebic pathology is more common in India. Caused by *Entamoeba histolytica* and more commonly seen in alcoholics and cirrhotic patients. Pyogenic liver abscess has been seen in solitary or multiple in numbers. More commonly seen in right lobe of liver even more than two times than in left lobe. While in 5 % cases it is present in both lobes. Amebic liver abscess affects in 80% cases in right lobe of liver. Generally amebic abscess is seen more in males (10%) but in pyogenic no such difference is observed. Presented with fever Hepatic abscesses develop insidiously with fever, sweats, weight loss and no local signs other than painless or slightly tender hepatomegaly. With help of ultrasound mostly cases is diagnosed but in conjunction with CT scan sensitivity is higher²

Various modes of treatment are available from antibiotic to needle aspiration, percutaneous tube drainage and if all fails then surgical drainage.

Aims and objective:-

1. To study the demographic profile and clinicoetiological factors for liver abscess.
2. To study the role of different imaging techniques to diagnose liver abscess.
3. To compare the clinical outcome according to different modalities of treatment.

Material and method:-

This study was performed at JLNMCB Bhagalpur, Bihar between May 2014 to April 2015 in department of radiology and surgery. All patients of liver abscess either amebic or pyogenic were included. All age group including both genders from any socioeconomic group presenting to hospital with liver abscess were evaluated. All patients underwent routine blood examination including Hemogram, Liver function test, renal function test, prothrombin

time, serum amylase, serum electrolytes, USG abdomen and X ray abdomen. CT Scan is reserved for selected patients.

Total 35 patients were included in this study and after all investigations following management strategy is followed

- ❖ Antibiotics alone (in uncomplicated abscess measuring more than 2 cm and less than 5 cm).
- ❖ Percutaneous aspiration + Antibiotics coverage (in non-ruptured abscess measuring > 5 cm)
- ❖ Percutaneous catheter drainage + Antibiotics coverage (in non-ruptured abscess measuring 5-10 cm) and catheter was removed 24 hours after drain output was nil.
- ❖ In ruptured liver abscess, open surgical drainage or laparoscopic surgical drainage (Extraperitoneal/ Transperitoneal) was done.

All patients were evaluated clinically daily for conservative management group with every 3rd day LFT and follow up USG abdomen if patient is not improving clinically. Repeat Ultrasound/ CT abdomen was done immediately if patient condition did not improve/ worse or after 3-4 days as a routine prognostic factor. Patient was informed about any surgical procedure and consent was taken for the same.

All patients were followed upto 6 months at one weeks interval for first 3 months then after at every month with USG abdomen. Recurrence, complications or efficacy of treatment noted during follow-up period.

Inclusion criteria:- all patients of liver abscess diagnosed clinically or sonologically.

Exclusion criteria:- immunocompromised patients.

Results:- total 35 patients were included in this study. The age range was between 20 to 75 years with the mean age of 40 years. 30(85%) of our patients were male while 5 (15%) as per Table – 1.

Table 1:- age distribution.

Age in yrs	20-30	31-40	41-50	51-60	61-70	71-75
No of patients	3	15	7	6	3	1

Total 32 (91%) patients presented with upper abdominal pain, high grade fever was present in 20 (57%) patients, nausea and vomiting in 17(48.5%) patients and loss of appetite in 18(51%) patients as per Table – 2.

Table 2:- Symptology.

Symptoms	Pain	Fever	Nausea/vomiting	Anorexia
No of patients	32	20	17	18

Alcohol addiction was common in males and had an important correlation with liver abscess as per Table – 3.

Table 3:- Alcohol/toddy intake.

	Total (n 35)	%
Males	32	91
<10 years	22	62
>10 years	13	37

Majority of liver abscesses were found in right lobe of liver (85%) and 4.5% of liver abscess was found in left lobe, and both lobes were involved in 10.5% of patients as per Table - 4.

Table 4:- Liver lobe affected.

Lobe effected	Right	Left	Both
%	85	4.5	10.5

In more than 50% liver abscess was solitary in presentation; multiple abscesses were found in 21% cases. Majority (60%) cases were partially liquefied liver abscess, 22% case presented with liquefied liver abscess and 18% cases were predominantly solidified. The laboratory investigations revealed that 40% patients had hemoglobin levels <10 gm.%, 80% patients had high leucocyte counts and 10% had hyperbilirubinemia.

Intravenous antibiotics in form of cephalosporins or fluroquinolones and metronidazole were given to all patients. About 12 patients were treated successful by this conservative management, 21 patients were required minimal surgical interventions like PNA and PCD and 2 patients required laparotomy as per Table – 5.

Table 5:- Modality of treatment.

Treatment	Only Antibiotic	PNA/PCD	Laparotomy
No of patients	12	21	2

Mean abscess size in the aspiration group was 6.87 cm and that in PCD was 11.5 cm as per Table – 6. Rupture of abscess into pleural and peritoneal cavity was major complication occurred in 3 cases (8.5%).

Table 6:-

Size in cm	Modality
<5cm	Antibiotics
<10cm	PNA/PCD
>10cm	Laparotomy

Discussion:-

Liver abscesses are life threatening with mortality rate as high as 80 to 90% if left untreated³. In earlier times when antibiotics were not available open surgical drainage was the treatment of choice. 6 described treatment by aspiration followed by antibiotics and recently in last few years percutaneous drainage under USG has largely replaced surgical drainage.³

Pyogenic liver abscess:-

In half of the cases, no identifiable cause of pyogenic liver abscess was ascertained. With USG, initially the abscess is hyperechoic but with maturation it becomes hypoechoic. Computed tomography is more specific and sensitive than USG³. Klebsiella and E. Coli being the commonest organism³. Treatment of PLA should individualize. The choice of antibiotic should cover most of common microorganisms cultured from liver abscess. This therapy should consist of a combination of aminoglycosides either with metronidazole or beta-lactam antibiotic. Antibiotic therapy should alone be reserved only for patients in good clinical condition and those who have solitary abscess lesser than 2 cm in diameter, patients must receive antibiotic for 4-6 weeks. “Source control” is essential in surgical treatment of PLA. Although there are various reports comparing these modalities in the treatment of liver abscess, there are no prospective randomized studies comparing different treatment modalities. Gerzof, et al., 1985 compared the medical treatment, percutaneous and surgical drainage in the retrospective study reporting better result with surgical drainage in total of 26 patients⁴.

Amebic liver abscess:-

USG findings are good for radiological evaluation of amoebic liver abscess which shows peripheral rim with homogeneity³. The first line of treatment in amoebic liver abscesses is metronidazole. The size of abscesses is important factor in determining the response of drug. PCD and catheter drainage offer other modalities of treatment as in pyogenic abscesses. Metronidazole is given 750 mg three times a day for 7-10 days. Surgical open drainage is indicated only in those patients with complicated amoebic abscesses e.g. secondary infection or peritonitis with large pyogenic and amoebic liver abscesses. Percutaneous drainage (either needle aspiration or catheter drainage) with systemic antibiotics has become the preferred treatment for the management of pyogenic liver abscesses. In contrast, for amoebic abscesses, the primary mode of treatment is medical. Although, PCD is a preferred method most widely used to drain liver abscesses, recent studies have shown PNA to be simpler, less costly, and equally effective. Usually needle aspiration is preferred for smaller abscesses and catheter drainage is done in larger ones. But no clear-cut guidelines have been laid^{4,5,6}. Both these techniques have certain disadvantages. Multiple attempts of PNA needed for large abscesses may be uncomfortable and perceived as more traumatic by patients. Also, during the period between two aspirations pus may get re-accumulated. For smaller abscesses, daily production of pus may be small, but a larger abscess cavity may produce larger quantity of pus, which needs to be drained continuously^{7,8,9}. PCD has this obvious advantage over PNA, which may have accounted for quicker clinical recovery, lesser duration of parenteral antibiotics and lesser failure rate among patients treated with PCD. On the other hand, placing a catheter needs more expertise followed by nursing care. Percutaneous needle aspiration and percutaneous catheter drainage are more effective than conservative medical management in treatment of liver abscess, however co-morbid conditions of patients and size of liver abscess also influence the outcome^{8,9,10,11}.

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