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CLINICAL STUDY OF LIVER ABSCESS AT OUR INSTITUTE:

General Surgery

Dr Vipul Gurjar Associate Professor Department of Surgery, Sumandeep Vidyapeeth, Piparia, Vadodara.

Dr Paheli Garg Resident Department of Surgery, Sumandeep Vidyapeeth, Piparia, Vadodara.

Dr Honeypalsinh H. Maharaul * Assistant Professor Department of Surgery, Sumandeep Vidyapeeth, Piparia, Vadodara.*corresponding Author

ABSTRACT

Background: Liver abscess is a burning problem in tropical nations, with often lethal consequences and diagnostic/therapeutic challenges. We have determined etiopathology, clinical, radiological, and bacteriological characteristics of this condition and review its management strategies.

Material and Methods: During the period of the month from May 2017 to March 2018, a prospective study was performed involving 40 patients admitted to the in-patient ward of the Department of General Surgery of Dhiraj Hospital SBKS Medical College their diagnosis was made on the basis of clinical features (such as right upper abdomen pain, and fever), laboratory investigations and radiological evidence of liver abscess.

Result: Amoebic liver abscess was the most common type of liver abscess among the study groups. Ultrasonography (USG) of the abdomen was accurate and cost-effective in diagnosis of liver abscesses. Percutaneous catheter drainage was the most effective method of treatment (with a 100% success rate).

Conclusion: Most patients in our study had liver abscess of amoebic origin. Early recognition of clinical features and prompt abdominal USG as cost-effective means for treatment initiation and reducing complications.

KEYWORDS

Amoebic liver abscess, pyogenic liver abscess, ultrasonography

INTRODUCTION:

Liver abscess are associated with mortality of up to 20%[1] and are categorized into various types based on etiology, of which amoebic (ALA) and pyogenic (PLA) liver abscess are major types. Interestingly, amoebic liver abscess is more common in the developing nations.[1] Pyogenic liver abscess constitutes the bulk of hepatic abscesses in developed nations. Pyogenic liver abscess result from ascending biliary tract infection, hematogenous spread through portal venous system, septicemia with involvement of liver by way of hepatic arterial circulation and secondary spread from intraperitoneal infection. *Escherichia coli*, *Klebsiella*, and *Streptococcus* are the most common etiology of Pyogenic liver abscess.

Although no distinct clinical criteria exist for distinguishing amoebic liver abscess and PLA, the differential diagnosis can be made based on the following criteria- younger age, resident, or recent travel to areas of endemic amoebiasis, diarrhea, and marked abdominal pain raise clinical suspicion of amoebic liver abscess. The diagnosis is confirmed by ultrasonography (USG), serological tests such as indirect hemagglutination test, reddish brown (anchovy paste like material) aspirate from the abscess, negative gram stain, rapid resolution after metronidazole treatment. The diagnosis of Pyogenic liver abscess is based on picket fence configuration of temperature chart, nausea, vomiting, anorexia, hematological analysis of leukocytosis, anemia, and positive blood or aspirate culture for bacterial etiology. The treatment of liver abscesses has evolved remarkably with minimal invasive drainage taking the center stage. Radiological imaging has improved diagnostic competence and has altered therapeutic strategy by allowing the possibility of percutaneous approach using needle aspiration or catheter drainage. While open surgery should be reserved for management of complicated cases. We designed a prospective study to analyze the relationship of occurrence of liver abscesses to patient particulars such as age, sex, religion, and socioeconomic status, source of drinking water, addiction to alcohol and history of diabetes mellitus. We also aimed to identify a fast, accurate and cost-effective diagnosis of liver abscess and evaluate the most effective treatment for liver abscesses.

MATERIALS AND METHOD:

This was a prospective study carried over a period from May 2017-March 2018. All patients included in the study were admitted to the inpatient ward of General Surgery Department of Dhiraj Hospital. The diagnosis of liver abscess was made based on history, clinical features, laboratory investigations, radiology, serological investigations, blood culture, and culture from the aspirate. Patients were treated with medical treatment with or without one of the following-percutaneous needle aspiration, percutaneous catheter drainage or open surgical drainage or laparoscopic drainage.

Following parameters were recorded:

a. From history-age, sex, religion, socioeconomic status, drinking water source, addiction to alcohol, and medical history of diabetes mellitus.
b. Clinical features- symptoms (abdominal pain, fever, jaundice, weight loss, diarrhea, anorexia, cough, and others). Signs (right upper quadrant pain, intercostal tenderness, hepatomegaly, jaundice, chest infections, and others).
c. Laboratory findings (leukocytosis, eosinophilia, raised erythrocyte sedimentation rate (ESR), Hb% (<10 mg%), bilirubin (>1 mg/dl), raised alkaline phosphatase, raised serum glutamic oxaloacetic transaminase, raised serum glutamic pyruvic transaminase, abnormal prothrombin time, and hypoalbuminemia.
d. Radiology- chest X-ray, abdominal X-ray, ultrasound abdomen (nature of the abscess- single or multiple, the lobe involved and size of the abscess)
e. Culture from the aspirate
f. Blood culture5
g. Response to type of treatment-all patients were examined daily for clinical improvement. Improvement in pain, fever, anorexia, and hepatomegaly, improved liver function tests, ultrasonographic evidence of decrease in size of abscess cavity were considered criteria for successful treatment.
h. Total stay in hospital in days
i. Follow up-on discharge each patient was followed up weekly for 1 month and then every 2 months for 6 months.

During each visit patient's body weight was recorded, any new clinical symptom was noted; USG of the upper abdomen was performed. The data collected was analyzed.

RESULTS AND DISCUSSION:

Of the total 40 patients screened, 26 (65%) had Amoebic liver abscess and 14 (35%) had Pyogenic Liver Abscess. The major epidemiological findings and clinical features recorded were as follows:

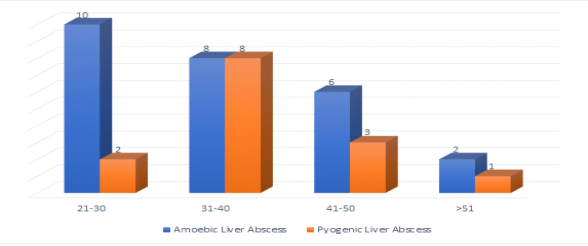
1.Age Distribution:

Table 1: Age Distribution:

Age	Amoebic Liver Abscess	Pyogenic Liver Abscess
21-30	10	2
31-40	8	8
41-50	6	3
>51	2	1

In our study, the maximum age incidence for Amoebic liver abscess was 21-30 years, while Pyogenic liver abscess was 31-40 which is consistent with other studies.[2,3,4,5]

Figure 1: Age Distribution:

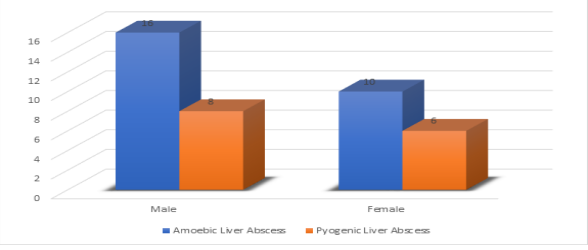


1.Sex Distribution:

Table 2: Sex Distribution:

Sex	Amoebic Liver Abscess	Pyogenic Liver Abscess
Male	16	8
Female	10	6

Figure 2: Sex Distribution:



In our study we had higher incidence ratio of Pyogenic Liver Abscess and amoebic liver abscess in males. However, in their study Gyorffy et al.[8] they found slightly higher incidence in females (male: Female-13:20), which contradicts our and other studies.[9,10].

1.Presenting Features:

Table 3: Presenting Features:

	Amoebic Liver Abscess	Pyogenic Liver Abscess
Abdominal pain	26(100%)	16(100%)
Fever	4(15.3%)	14(87.5%)
Icterus	2(7.69%)	1(6.25%)
Diarrhea	24(92.3%)	10(62.5%)
Anorexia	5(19.23%)	1(6.25%)

Most common presentation was abdominal pain in both group. Fever was present in 87.5% in pyogenic liver abscess while only 15.3% had fever in amoebic liver abscess. Diarrhoea was present in 92.3% patients in amoebic liver abscess while 62.5% patient had in pyogenic liver abscess.

The laboratory revealed leukocytosis (85.2%), raised ESR (76.3%), and anemia (74.5%).

1.Ultrasound Findings:

Table 4: Ultrasonography findings:

	Amoebic liver abscess	Pyogenic liver abscess
Right lobe	74%	62%
Left lobe	14%	22%
Both lobes	12%	16%
Abscess size > 400 cc	68%	85%
Single abscess	72%	67%
Multiple abscess	28%	33%

The most important and accurate[14] diagnostic tool in our study was USG, which had accuracy of 96%. CECT abdomen was performed in 10 cases for anatomical delineation and right lobe[3,12] (74% & 62% patients) was most commonly affected. 68% & 87% patients had abscess cavity size >400cc.

MANAGEMENT:

Of 26 patients with amoebic liver abscess 2 patients were treated with medical or conservative treatment with a success rate of 91%, 7 patients were treated with percutaneous needle aspiration with a success rate of 98%, 11 patients were treated with percutaneous catheter drainage and the success rate of this procedure was 100%, and 5 patients were managed by laparoscopic drainage and 1patients presented with features of peritonitis, was treated with surgical exploration and drainage. The success rate in this group was 98%.

2 Amoebic liver abscess patients with abscess size <300cc and without complications were treated with conservative management (using metronidazole). This result was comparatively less successful in our hands compared to other studies[16] reporting 93.5% success rate. However, most practitioners do not recommend surgical drainage of ALA.[4,11,12,17] In our study, 1 patients presented with features of peritonitis and were treated by surgical exploration and drainage. The success rate in this group was 98%. No mortality was there in our study .Other authors have reported a mortality rate of 12.3%[14] and 17-20%.[1]

Pyogenic Liver Abscess should be managed by interventions like needle aspiration or catheter drainage.[19] 3 patients with small abscess was treated with intravenous antibiotics. 4 patients were treated with percutaneous needle aspiration. There were 2 failures in this group who was managed by catheter drainage. 5 patients underwent percutaneous catheter drainage successfully. Thus, success rate of needle aspiration and catheter drainage was 62% and 100%, respectively and is consistent with previous report.[20,21] Nevertheless, needle aspiration[7,22] has the advantage over catheter drainage in better maneuverability within abscess cavity, possibly less likely of secondary infection, and reduced equipment cost.4 patient presented with ruptured liver abscess were managed by surgical exploration. 2 patient died at our institute with pyogenic liver abscess due to septicemia.

CONCLUSION:

Liver abscess is a fatal disease if early diagnosis and proper treatment is not initiated. Amoebic Liver Abscess is the main type of liver abscess among patients attending tertiary care institute. Males are more commonly affected. Early recognition of clinical features and proper investigation including abdominal USG (which is relatively cheap and very sensitive) is very important. For small abscesses conservative or medical management is effective. However, for larger abscesses (>400cc) and left lobe abscesses medical management plus intervention such as catheter drainage (compared to needle aspiration) results in high cure rates with surgical option(Laparoscopic) reserved for complications such as peritonitis.

REFERENCES:

1. Perez JY., Jr Amoebic liver abscess: Revisited. Philip J Gastroenterol.2006;2:11–3.
2. Pillai DR, Keystone JS, Sheppard DC, MacLean JD, MacPherson DW, Kain KC. Entamoeba histolytica and Entamoeba dispar: Epidemiology and comparison of diagnostic methods in a setting of nonendemicity. Clin Infect Dis. 1999;29:1315–8.
3. Makkar RP, Sachdev GK, Malhotra V. Alcohol consumption, hepatic iron load and the risk of amoebic liver abscess: A case-control study. Intern Med. 2003;42:644–9.
4. Mukhopadhyay M, Saha AK, Sarkar A, Mukherjee S. Amoebic liver abscess: Presentation and complications. Indian J Surg. 2010;72:37–41.
5. Mathur S, Gehlot RS, Mohta A, Bhargava N. Clinical profile of amoebic liver abscess. J Indian Acad Clin Med. 2002;3:367–73.
6. Alvarez JA, González JJ, Baldonedo RF, Sanz L, Junco A, Rodrfíguez JL, et al. Pyogenic liver abscesses: A comparison of older and younger patients. HPB (Oxford) 2001;3:201–6.
7. Bugti QA, Baloch MA, Wadood AU, Mulghani AH, Azeem B, Ahmed J. Pyogenic liver abscess: Demographical, clinical, radiological and bacteriological characteristics and management strategies. Gomal J Med Sci. 2005;3:10–4.
8. Gyorffy EJ, Frey CF, Silva J, Jr, McGahan J. Pyogenic liver abscess. Diagnostic and therapeutic strategies. Ann Surg. 1987;206:699–705.
9. Liew KV, Lau TC, Ho CH, Cheng TK, Ong YS, Chia SC, et al. Pyogenic liver abscess — A tropical centre's experience in management with review of current literature. Singapore Med J. 2000;41:489–92.
10. Rahimian J, Wilson T, Oram V, Holzman RS. Pyogenic liver abscess: Recent trends in etiology and mortality. Clin Infect Dis. 2004;39:1654–9.
11. Krige JE, Beckingham IJ. ABC of diseases of liver, pancreas, and biliary system. BMJ. 2001;322:537–40.
12. Kebede A, Kassa E, Ashenafi S, Woldemichael T, Polderman AM, Petros B. Amoebic liver abscess: A 20 year retrospective analysis at Tikur Anbessa Hospital, Ethiopia. Ethiop J Health Dev. 2004;18:199–202.
13. Chan KS, Chen CM, Cheng KC, Hou CC, Lin HJ, Yu WL. Pyogenic liver abscess: A retrospective analysis of 107 patients during a 3-year period. Jpn J Infect Dis. 2005;58:366–8.
14. Mohsen AH, Green ST, Read RC, McKendrick MW. Liver abscess in adults: Ten years experience in a UK centre. QJM. 2002;95:797–802.
15. Seo TJ, Park CH, Lee SH, Park JH, Lee WS, Joo YE, et al. A clinical study on liver abscess for recent 15 years in Gwangju-Chonnam Province. Korean J Med. 2005;68:26–38.
16. Zafar A, Ahmed S. Amoebic liver abscess: A comparative study of needle aspiration

versus conservative treatment. J Ayub Med Coll Abbottabad. 2002;14:10–2.
17. Sharma MP, Ahuja V. Amoebic liver abscess. J Indian Acad Clin Med. 2003;4:107–11.
18. Boonyapisit S, Chinapak O, Plengvanit U. Amoebic liver abscess in Thailand, clinical analysis of 418 cases. J Med Assoc Thai. 1993;76:243–6.
19. D'Angelica M, Fong Y. The liver. In: Beauchamp RD, Evers BM, Mattox KL, editors. Sabiston Text Book of Surgery. 19th ed. Ch. 54. Philadelphia: Elsevier Saunders; 2012. pp. 1411–75.
20. Rajak CL, Gupta S, Jain S, Chawla Y, Gulati M, Suri S. Percutaneous treatment of liver abscesses: Needle aspiration versus catheter drainage. AJR Am J Roentgenol. 1998;170:1035–9.
21. Cheng DL, Liu YC, Yen MY, Liu CY, Shi FW, Wang LS. Pyogenic liver abscess: Clinical manifestations and value of percutaneous catheter drainage treatment. J Formos Med Assoc. 1990;89:571–6.
22. Yu SC, Ho SS, Lau WY, Yeung DT, Yuen EH, Lee PS, et al. Treatment of pyogenic liver abscess: Prospective randomized comparison of catheter drainage and needle aspiration. Hepatology. 2004;39:932–8.