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Dr. Rikhav Shah
Assistant Professor, Department of General Surgery, Gujarat Adani Institute of Medical Science, Bhuj, Kutch, Gujarat, India

Corresponding Author:
Dr Rikhav Shah
Assistant Professor, Department of General Surgery, Gujarat Adani Institute of Medical Science, Bhuj, Kutch, Gujarat, India

Clinical presentation and outcomes of rupture liver abscess patients in tertiary care center

Dr. Rikhav Shah

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Abstract
Background and Aim: Liver abscess is the second largest prevalent disease in developing countries like India due to poor sanitation, overcrowding and low socio-econic status. Liver abscess is of two types amoebic and pyogenic. There have been significant changes observed in treatment and diagnosis according to the type of abscess. Present study was done with an aim to analyze the various epidemiological factors in patients with ruptured liver abscess for better management and insight into the prognosis for such patients.
Material and Methods: This study was conducted in department of surgery, Tertiary Care Teaching Institute of India for the duration 1 year. All patients with ruptured liver abscess (ultrasound diagnosed) were included in this study. Blood investigations were evaluated for complete haemogram, total leukocyte counts, liver function tests, renal function and coagulation profile. Patients with deranged coagulation profiles were given fresh frozen plasma.
Results: There was total of the fifty patients which were diagnosed as ruptured liver abscess. In our study all patients were male. The most affected age group was 31-40 years. Most of the patients presented with complaints of right hypochondrial pain/tenderness in 50 patients (100%). 17 patients (34%) complained of nausea and vomiting, 25 patients (50%) had presented with complaints of anorexia and loss of appetite, and 38 patients (76%) had presented with high fever along with chills and rigors. 12 patients (24%) had guarding/rigidity.
Conclusion: Liver abscess (ruptured) is a surgical challenge which needs to be addressed in early stages to reduce the mortality. Most common affected age group falls between 30 and 60 years of age with male predominance being affected. Alcoholics and patients with diabetes and immunosuppression are at high risk for developing liver abscess.

Keywords: Diabetes, hypochondrial pain, liver abscess, pyogenic

Introduction
Liver abscess (LA), which was first described by Hippocrates in 400 BC but first published by Ochsner and colleagues as a review of 47 cases in 1938, is a hepatic parenchymal occupying lesion containing purulent material [1, 2]. Various types of abscesses are present in the liver including amoebic, pyogenic, and rarely fungal. In developed countries, pyogenic LA (PLA) constitutes three-fifths, while in developing countries, amoebic LA constitutes two-thirds of total LA cases [3]. Most common mode of transmission is feco-oral route and most common organism is E. coli. Appendicitis once used to be the main reason to develop a liver abscess but has decreased significantly as better diagnosis and management is available. Nowadays, biliary tract disease (biliary stone, strictures, malignancy, and congenital anomalies) are the major causes of pyogenic liver abscesses. About half of the bacterial cases are developed by cholangitis. Less often, causes are hepatic artery bacteremia, portal vein bacteremia, diverticulitis, cholecystitis, or penetrating trauma [4].
The primary treatment for amoebic LA is medical therapy. However, 15% of LAs are refractory [5]. Further, subsequent bacterial infection may occur in 20% of amoebic Las [6]. Surgical drainage is the traditional treatment for such patients and those with PLAs, which cause 10-47% morbidity and death [7, 8]. In earlier days open surgery was the only choice. Laparotomy used to be the gold standard of treatment and carried a mortality rate of 10 to 47% [9]. Laparoscopic lavage has been tried successfully in patients with intraperitoneal rupture of liver abscesses, the technique is well established and has advantage of avoiding the additional burden of laparotomy [10]. But when patient is too sick, the anesthetic and operative load itself may increase mortality.

In cases of free peritoneal rupture, removal of free peritoneal pus and lavage can be helpful and repeated lavage can be done via the wide bore drains. With invent of effective antimicrobials, newer methods of radio diagnosis like USG and CECT and interventional radiological techniques like USG, CT guided aspiration, percutaneous catheter insertion, mortality associated with this condition has significantly decreased. Surgical intervention is rarely needed in cases of contained liver abscesses as percutaneous catheter drainage with antibiotics and metronidazole is sufficient to achieve cure.[11] Despite different and easily accessible modalities are available to diagnose the condition early, still ruptured liver abscess presents with a common cause of acute abdomen in surgical emergency. In developing countries, ruptured liver abscess is a common cause of morbidity and mortality.

Present study was done with an aim to analyze the various epidemiological factors in patients with ruptured liver abscess for better management and insight into the prognosis for such patients.

Material and Methods

This study was conducted in department of surgery, Tertiary Care Teaching Institute of India for the duration 1 year. All patients with ruptured liver abscess (ultrasound/ computerized tomography diagnosed) were included in this study, and those patients having other causes of peritonitis (perforation, tubercular etc.), nonruptured liver abscess were excluded. All the patients were kept nil per oral with Foley catheter for urine output measurement and checking hydration. They were administered IV antibiotics, symptomatic and supportive treatment. Blood investigations were evaluated for complete haemogram, total leukocyte counts, liver function tests, renal function and coagulation profile. Patients with deranged coagulation profiles were given fresh frozen plasma.

Statistical analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2007) and then exported to data editor page of SPSS version 15 (SPSS Inc., Chicago, Illinois, USA). For all tests, confidence level and level of significance were set at 95% and 5% respectively.

Results

There was total of the fifty patients which were diagnosed as ruptured liver abscess. In our study all patients were male. (Table 1) The most affected age group was 31-40 years, followed by 41-50 years. (Table 2) Right hypochondrium pain was the most common presenting complaint. Right side present was present in 36 patients and left side was in 8 patients and in 6 patients having both right and left abscess. Most common history present in patients was of chronic alcohol intake. Most of the patients presented with complaints of right hypochondrial pain/tenderness in 50 patients (100%). 17 patients (34%) complained of nausea and vomiting, 25 patients (50%) had presented with complaints of anorexia and loss of appetite, and 38 patients (76%) had presented with high fever along with chills and rigors. 12 patients (24%) had guarding/rigidity. Moreover, 16 patients (32%) had signs of severe toxemia on presentation. E coli were the most common organism isolated in our study in 26 patients (52%). A total of 20 patients (40%) had diabetes in our study and total of 9 (18%) patients had mortality in our study. (Table 3)

Table 1: Gender wise Distribution of study Population

Gender	Number	Percentage (%)
Male	40	100
Female	0	0
Total	40	100

Table 2: Age wise distribution of study Population

Age (Years)	Number	Percentage (%)
0-10	0	0
11-20	3	6
21-30	5	10
31-40	25	50
41-50	15	30
51-60	2	4

Table 3: Symptom based distribution of study Population

Symptoms	Number	Percentage (%)
Right hypochondrial pain/tenderness	50	100
Nausea and vomiting	17	34
Anorexia and loss of appetite	25	50
High fever	38	76
Guarding/rigidity	12	24
Toxemia	26	52

Discussion

In terms of distribution of signs where highest percentage been observed in pleural effusion category which is 32%, whereas study by Ghosh *et al*., showed pleural effusion as 30% which is more or less similar to this study findings [12]. For the case of distribution of symptoms where the highest percentage of cases been observed to have anorexia but Ghosh *et al*., study in this line showed high prevalence of abdominal pain as sign. Cheema *et al*., Zafar *et al*., and Huang *et al*. informed instances with symptoms including fever, stomach discomfort and vomiting in larger prevalence which is not in conformity of this present study [12-15].

Management of ruptured liver abscess includes placement of catheters, laparoscopic drainage, and open surgical methods along with appropriate antibiotics and supportive treatment. In our study there was male predominance affecting with ruptured liver abscess with 50 patients (100%), similar results were shown by Tiwari [16]. Pang *et al* in their study concluded the majority of patients affected were in age group of 50-65 years [17].

However, our study suggested the majority of patients affected in age group of 31-40 years. In our study, 70% patients had abscess confined to the right lobe only, and similar results were shown by Sharma *et al* in his study concluded the same result with high propensity for right lobe [18]. Common laboratory abnormalities include leukocytosis, hypoalbuminemia, prolonged prothrombin time, and elevated inflammatory markers.

According to Rajak *et al*., Cai *et al*., and Lee *et al*., the size of the liver abscess is typically used to determine whether image guided needle aspiration, percutaneous catheter drainage, or surgical drainage should be performed, and these studies confirmed that catheter drainage was more effective than aspiration therapy in cases of liver abscesses [19-21].

Liver abscess are common in the setting of a comorbid illness such as diabetes mellitus, in current study it was 40% [10]. The mortality in cases of non-ruptured liver abscess is reported to

range from 7.1% to 15.5%, with older age and the presence of biliary disease being adverse prognostic factors. Ruptured liver abscess has a reported mortality of 43.5% [11]. In our study mortality was 17.5%.

Conclusion

Liver abscess (ruptured) is a surgical challenge which needs to be addressed in early stages to reduce the mortality. Most common affected age group falls between 30 and 60 years of age with male predominance being affected. Alcoholics and patients with diabetes and immunosuppression are at high risk for developing liver abscess. Right hypochondrial pain with or without generalized abdominal pain/ tenderness along with fever and chills/rigor forms main presenting features. Ruptured liver abscess carries high morbidity and mortality so early diagnosis and prompt treatment can reduce the risk of it.

References

1. Ali WM, Ali I, Rizvi SAA, Rab AZ, Ahmed M. Recent trends in the epidemiology of liver abscess in western region of Uttar Pradesh: a retrospective study. J Surg Anesth. 2018;2:117. 10.35248/2684-1606.18.2.117
2. Longworth S, Han J: Pyogenic liver abscess. Clin Liver Dis (Hoboken). 2015;6:51-4.
3. Ghosh S, Sharma S, Gadpayle AK, Gupta HK, Mahajan RK, Sahoo R, *et al*. Clinical, laboratory, and management profile in patients of liver abscess from northern India. J Trop Med; c2014. p. 142382.
4. Lardière-Deguelte S, Ragot E, Amroun K, Piardi T, Dokmak S, Bruno O, *et al*. Hepatic abscess: Diagnosis and management. J Visc Surg. 2015;152(4):231-43.
5. Thompson JE Jr, Forlenza S, Verma R: Amebic liver abscess: a therapeutic approach. Rev Infect Dis. 1985;7:171-179. 10.1093/clinids/7.2.171
6. Sherlock's Diseases of the Liver and Biliary System, 13th Edition. Dooley JS, Lok AS, Garcia-Tsao G, Pinzani M (ed): John Wiley & Sons Ltd, Hoboken, New Jersey; c2018.
7. TH P: Surgical aspects of amoebiasis. Br Med J. 1947;2:123-126. 10.1136/bmj.2.4516.123
8. Satiani B, Davidson ED. Hepatic abscesses: improvement in mortality with early diagnosis and treatment. Am J Surg. 1978;135:647-650.
9. Gerzof SG, Johnson WC, Robbins AH, Nabseth DC. Intrahepaticpyogenic abscesses: treatment by percutaneous drainage. Am J Surg. 1985;149:487-494.
10. Desai N, Savain C, Soni D. Management of ruptured liver abscess: a study of 54 cases. Int J Sci Res. 2013;4(1):6-12.
11. Abusedera MA, El-Badryba AM. Percutaneous treatment of large pyogenic liver abscess. Egypt J Radiol Nuclear Med. 2014;45:109-15.
12. Ghosh S, Sharma S, Gadpayle AK, Gupta HK, Mahajan RK, Sahoo R, Kumar N. Clinical, laboratory, and management profile in patients of liver abscess from northern India. J Trop Med. 2014;2014:142382.
13. Abbas MT, Khan FY, Muhsin SA, Al-Dehwe B, Abukamar M, Elzouki AN. Epidemiology, Clinical Features and Outcome of Liver Abscess: A single Reference Center Experience in Qatar. Oman Med J. 2014 Jul;29(4):260-3. Doi: 10.5001/omj.2014.69.
14. Zafar A, Ahmed S. Amoebic liver abscess: a comparative study of needle aspiration versus conservative treatment. J Ayub Med Coll Abbottabad. 2002;14(1):10-12.
15. Huang CJ, Pitt HA, Lipsett PA, Osterman FA, Lillemoe K, Cameron JL, *et al*. Pyogenic hepatic abscess: changing trends over 42 years. Ann Surg. 1996;223(5):600-609.
16. Tiwari D, Jatav OP, Jain M, Kumar S. Study of clinical and etiopathological role of liver abscess. J Evid Based Med Health. 2015;2:6705-6712.
17. Pang TC, Fung T, Samra J, Hugh TJ, Smith RC. Pyogenic liver abscess: An audit of 10years'experience. World J Gastroenterol. 2011;17:1622-1630.
18. Sharma MP, Dasarathy S, Sushma S, Verma N. Variants of amoebic liver abscess. Arch Med Res. 1997;28:5272-5273.
19. 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(4):1035-9.
20. Cai YL, Xiong XZ, Lu J, Cheng Y, Yang C, Lin YX, *et al*. Percutaneous needle aspiration versus catheter drainage in the management of liver abscess: a systematic review and metaanalysis. HPB. 2015;17(3):195-201.
21. Lee CH, Jo HG, Cho EY, Song JS, Jung GM, Cho YK, *et al*. Maximal diameter of liver abscess independently predicts prolonged hospitalization and poor prognosis in patients with pyogenic liver abscess. BMC infectious diseases. 2021;21(1):1-10.
22. Choi HY, Cheon GJ, Kim YD, Han KH, Kim KS, Nah BK. Comparison of clinical characteristics between cryptogenic and biliary pyogenic liver abscess. Korean J Gastroenterol. 2007;9:238-44.
23. Chou FF, Sheen-Chen SM, Lee TY. Rupture of pyogenic liver abscess. Am J Gastroenterol. 1995;90:767-770.