Research Article

Clinical Study of Liver Abscess at a Tertiary Care Hospital

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Abstract

Introduction: Liver abscess is a serious problem especially in tropical regions like the Indian subcontinent. It has a significant mortality and also poses diagnostic and therapeutic challenges. Present study describes the clinical profile, management and outcome of liver abscess patients attending the tertiary care hospital during the study period. **Methods:** It was a cross-sectional study done over a period of one year at our tertiary care hospital. Total of 120 liver abscess patients managed by the surgery department of the hospital were included in the study. Details related to history, clinical examination, ultrasonography findings, management of the cases and outcome were recorded and described. **Results:** The age of patients ranged from 21 to 68 years. Majority of the patients were alcoholic (76.7%). Out of 120 patients, 111 were males and 9 were females with a Male to female ratio of 12.3:1. The most common presentation of Liver Abscess was with pain in abdomen and fever which were present in 98.3% and 95.8% of our patients, respectively. The right lobe abscesses were more common (71.7%) and were frequently solitary abscess (65.8%). In relation to etiology, amoebic liver abscess was the most common type. Investigations found that 78 cases (65%) were of amoebic origin, 23 (19.2%) were pyogenic, 5 cases (4.2%) were mixed amoebic and pyogenic abscess, 11 cases (9.2%) were tubercular abscess and 3 cases (2.5%) were fungal infections. Management was done in most of the cases by percutaneous needle aspiration (71.7%). Pigtail drainage was done in 27 (22.5%) cases whereas 7 patients (5.8%) were managed by open surgery. Mortality was found to be 3.3% and all the deaths were in the group in whom surgical treatment was undertaken. **Conclusion:** Alcoholic males were the most common presenting group while females were less likely to be affected. Apart from amoebic and pyogenic etiology, other causes like mixed infection, tubercular and fungal infection were also found. Percutaneous needle aspiration and pigtail drainage were common modes of management with good results. Open surgical management in complicated cases accounted for the mortality in the study group.

Keywords: Amoebic liver abscess, Percutaneous needle aspiration, Right lobe abscess.

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INTRODUCTION

Liver is a very important as well as vital organ of the body. It is subjected to various systemic infections like parasitic, viral and bacterial infections and it lies at the distal end of portal circulation. Liver is bathed with portal blood which contains parasites, viruses, bacteria ova and also other antigens[1]. Liver abscess continues to remain a surgical problem with considerable morbidity[2]. Liver abscess is a collection of purulent material in the liver parenchyma which can be caused due to parasitic, bacterial, fungal or mixed type of infection. Surgical management was the predominant mode of treatment of liver abscess in the earlier period[3]. However, minimally invasive techniques such as percutaneous needle aspiration have been used in combination with intravenous antibiotics with good results. Recent reports from use of percutaneous drainage technique have indicated a favourable outcome in patients with decrease in average length of hospital stay compared to the conservative management of the patients[4]. Present study describes the clinical profile, management and outcome of liver abscess patients attending the tertiary care hospital during the study period.

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METHODS

It was a cross-sectional study done over a period of one year at our tertiary care hospital. Total of 120 liver abscess patients managed by the surgery department of the hospital were included in the study. Details related to history, clinical examination, ultrasonography findings, management of the cases and outcome were recorded and described. All patients diagnosed with liver abscess and who have not responded to the conservative management after 48 hours of treatment were included in the study. Patients who were less than 18 years of age, patients with an organised abscess, and those patients who were pregnant were excluded from the study group. Serological tests for Entamoeba histolytica, hepatitis B and hepatitis C virus and Human Immunodeficiency virus was also done. All the patients underwent Mantoux test and also chest radiography. Patients who had symptoms of cough and expectoration underwent sputum test for acid fast bacilli (AFB) to rule out pulmonary tuberculosis. All patients underwent USG guided aspiration of the liver abscess which was done either by the percutaneous needle or by using pigtail catheter. Interventions in the patients were done after INR was corrected to a value below 1.4 in the patients with coagulopathy. The pigtail catheter was preferred in cases with a single and large (>10 cm) abscess which was deep seated and partially liquefied. In multiple and small (5–10 cm) abscesses which were superficial and fully liquefied, percutaneous catheter use was preferred. Sterile containers were used for Aspirate collection and samples were immediately sent to the Microbiology Department. Microscopic examination of the wet mount for trophozoites of Entamoeba histolytica, Ziel Nielson staining for AFB and Gram's staining was done. Samples were also plated in anaerobic, aerobic, and the fungal culture media. While the pus culture reports were awaited, patients were empirically started on intravenous antibiotics. Discharge criteria were defervescence of clinical complaints and normalisation of the hemodynamic status.

RESULTS

The age of patients ranged from 21 to 68 years. Majority of the patients were alcoholic (76.7%). Out of 120 patients, 111 were males and 9 were females with a Male to female ratio of 12.3:1. The most common presentation of Liver Abscess was with pain in abdomen and fever which were present in 98.3% and 95.8% of our patients, respectively. The right lobe abscesses were more common (71.7%) and were frequently solitary abscess (65.8%). In relation to etiology, amoebic liver abscess was the most common type. Investigations found that 78 cases (65%) were of amoebic origin, 23 (19.2%) were pyogenic, 5 cases (4.2%) were mixed amoebic and pyogenic abscess, 11 cases (9.2%) were tubercular abscess and 3 cases (2.5%) were fungal infections. Management was done in most of the cases by percutaneous needle aspiration (71.7%). Pigtail drainage was done in 27 (22.5%) cases whereas 7 patients (5.8%) were managed by open surgery. Mortality was found to be 3.3% and all the deaths were in the group in whom surgical treatment was undertaken.

Table 1: Clinical Profile of the Liver Abscess Patients

	Parameter	Number of cases (Percentage)
Symptoms	Pain in abdomen	118 (98.3)
	Fever	115 (95.8)
	Anorexia	110 (91.7)
	Nausea/vomiting	72 (60)
	Diarrhoea	46 (38.3)
	Cough	21 (17.5)
	Weight loss	51 (42.5)
Risk Factors	Alcohol	92 (76.7)
	Diabetes	21 (17.5)
Signs	Pallor	52 (43.3)
	Jaundice	32 (26.7)
	Hepatomegaly	103 (85.8)
	Splenomegaly	15 (12.5)
	Ascites	12 (10)
	Pleural effusion	34 (28.3)

Table 2: Ultrasonography Findings in the Patients

	Parameter	Number of cases (Percentage)
Lobe	Right	86 (71.7)
	Left	22 (18.3)
	Bilateral	12 (10)
Number	Solitary	79 (65.8)
	Few (≤3)	15 (12.5)
	Multiple (>3)	26 (21.7)
Mean abscess volume (Mean ± Standard Deviation)	305 ± 274 cc	

Table 3: Management and Outcome of the Patients

	Parameter	Number of cases (Percentage)
Abscess drainage	Percutaneous needle aspiration	86 (71.7)
	Pigtail drainage	27 (22.5)
	Open surgical	7 (5.8)
Mean duration	Hospitalisation	9 ± 4.72 days
	Treatment	37 ± 40 days
Mortality	---	4 (3.3)

DISCUSSION

Present study describes the clinical profile, management and outcome of liver abscess patients attending the tertiary care hospital during the study period. In our study Male to female ratio of 12.3:1 was found. Sk Sharmila *et*

al[5] have also reported male preponderance in their study and 86% patients in their study were males with only 14% females. Similarly, Ghosh *et al*[6] have also reported a male: female ratio of 13.3:1. However, study by Heneghan *et al.*[7] reported a lower male: female ratio of 1.22:1. The most common presentation of Liver Abscess was with pain in abdomen and fever which were present in 98.3% and 95.8% of our patients, respectively. Ghosh *et al*[6] have also reported similar results with 99% and 94% of their patients under study presenting with pain in abdomen and fever respectively. Some other studies have mentioned the symptoms of range of pain in abdomen and fever to be in the range of 62 to 94% and 67 to87% respectively[8,9]. In our study, 65% of the cases were amoebic liver abscess and 19.2% were pyogenic liver abscess. Abdominal Ultrasound is the gold standard for diagnosing liver abscesses. On ultrasound examination, the right lobe abscesses were more common (71.7%) and were frequently solitary abscess (65.8%). These findings are in line with the reports from other studies[10,11] and may be related to the blood circulation as the right lobe of liver receives most of the blood which drains the most often involved primary site of intestinal amoebiasis i.e. the right colon, via the 'streaming' effect in the portal venous circulation[12,13]. Following the latest updates regarding the management strategy using minimally invasive drainage procedures, in our study 71.7% of the cases were managed by percutaneous needle aspiration[14]. Pigtail drainage was done in 27 (22.5%) cases whereas 7 patients (5.8%) were managed by open surgery. With the recent advent of abscess drainage by pigtail catheter, the use of open surgery in liver abscess which has ruptured and spread into peritoneal cavity has been limited to paients who are haemodynamically unstable[15]. Mortality was found to be 3.3% and all the deaths were in the group in whom surgical treatment was undertaken. Similar to our results Ghosh *et al*[6] have also reported an overall mortality rate of 2.5% and all the deaths being in the surgical treatment group.

CONCLUSION

Alcoholic males were the most common presenting group while females were less likely to be affected. Apart from amoebic and pyogenic etiology, other causes like mixed infection, tubercular and fungal infection were also found. Percutaneous needle aspiration and pigtail drainage were common modes of management with good results. Open surgical management in complicated cases accounted for the mortality in the study group.

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