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Changing Trends in Clinical Profile and Management of Liver Abscess? : Prospective Study in a Tertiary Care Hospital.

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***Abstract**: **Background:** Though Pyogenic liver abscess is a life threatening disease, there has been significant change in the epidemiology management and mortality over the years. Aim of the study was to review the literature and assess the changing trends in patient presentation and management of liver abscess.*
***Methods**: Prospective observational study conducted from May 2013 to May 2015 in Goa Medical College, Goa on 100 patients. In all patients detailedhistory, examination and laboratory investigations were recorded. Mean and chi square test analysis was performed.*
***Results:** Of 100 cases reviewed, mean age was 52, most common symptoms were fever and pain (94%) in the right hypochondrium (88%). Most common laboratory abnormality was increased WBC count (70%), deranged liver enzymes ALT AST(50%). Majority of abscess invovled right lobe of liver.*
Klebsiella pnemoniae was the most common organism isolated (p <0.05). Majority were treated with percutaneous aspirations under ultrasound guidance. Mortality although reported as 11-30% in the present study was 6%.
***Conclusion;** Clinical spectrum of patients with liver abscess seems to have changed with more middle aged male presenting with liver abscess, k.pneumoniae has become a predominantetiology in pyogenic liver abscess. Percutaneous needle aspiration in combination with systemic antibiotics is safe and effective treatment and should be considered as first line treatment.*

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I. Introduction

Liver abscess is still a major health problem in developing country like India. They are categorised into pyogenic or amoebic based on the causative organism. Both share common features and the presentation may overlap. Incidence of pyogenic liver abscess is on rise. It is attributed to more aggressive treatment approach to hepatobiliary and pancreatic cancers as well as improvement in diagnostic imaging [1]. Also due to alcoholism, poor socioeconomic status, immunocompromised state there is a rising trend even in amoebic liver disease.

II. Materials And Method

Prospective Observational Study Conducted on 100 consecutive patients from May 2013 to May 2015 in the department of Goa Medical College and Hospital which is a tertiary care hospital for the state of Goa and referral centre from neighbouring districts of Sindhudurg (Maharashtra) and Karwar (Karnataka).

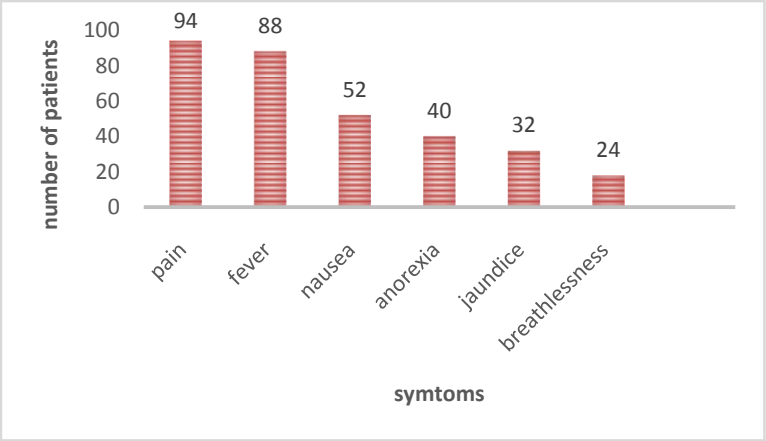
The study included all the patients of liver abscess admitted to surgical ward. After detailed history and examination, ultrasound abdomen was done as confirmatory test for diagnosis. Following investigations were done. Hemoglobin, fasting blood sugar level, blood urea and serum creatinine, liver function tests including INR , stool examination, chest Xray with upper abdomen. All patients were started on antibiotics third generation cephalosporinsand metronidazole therapy. After the required investigations and coagulation profile those patients with a well defined liver abscess were subjected to percutaneous aspiration. Those patients having ruptured abscess underwent laparotomy. Response of treatment was heralded by decrease in pain and fever, repeat ultrasound was done in all patients to assess the size of the abscess and repeat percutaneous aspiration if required. The collected data was tabulated in the MS excel and analysed with SPSS software. The data was expressed as mean with or without SD for continues data and percentages for categorical variables. Chi square test was applied wherever necessary for statistical significance.

III. Results

Following observations were made, Amoebic liver abscess accounted for 58 cases and pyogenic 42 cases. Highest incidence of liver abscess was noted between 40-60 with 48% in the with average age of 52 yr. Out of hundred patients 90 were male and 10 females.

Most patients were from lower socioeconomic status. As per modified BG Prasad scale 76% of patients belonged to lower class or lower middle class, (based on the per capita income)

Presenting symptoms, pain was the most common presenting symptom in 94% of patients located in the upper abdomen. Jaundice was seen in 32% patients. This could be either because of alcoholism or liver destruction. Breathlessness seen in 24% of patients due to pleural effusion or ARDS



52% of patients had diabetes mellitus which was a predisposing factor

48% were alcoholics based on CAGE criteria, 20% were chronic smokers

Among the signs 68% were febrile, pallor present in 40% and icterus in 34%

Intercostal tenderness elicited in the right hypochondrium was the most consistent sign seen in 86% of patients, one of the diagnostic sign.

Hepatomegaly seen in 4%. Pleuraleffusion seen in 34%

Investigations :Anemia seen in 30% of cases, leucocytosis in 70% patients with neutrophilic count more than 75 in80%.

High fasting sugar in 54% of patients

Liver function tests hyperbilirubinemia seen in 26% , SGOT SGPT elevated in 50%

Raised alkaline phosphatase in 52%, INr deranged in 26 of patients

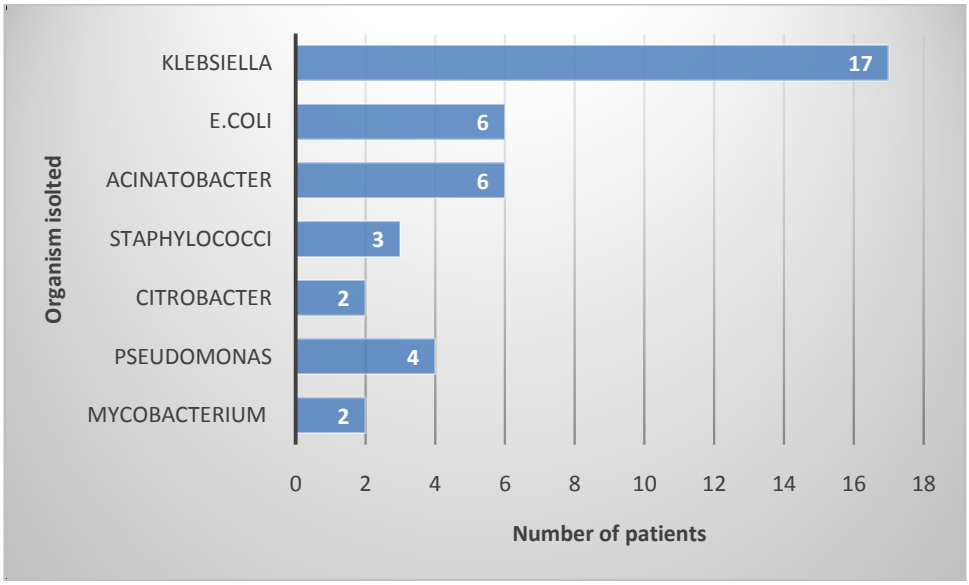
Low albumin levels seen in 66% of patients ,

4 patients were HIV positive.

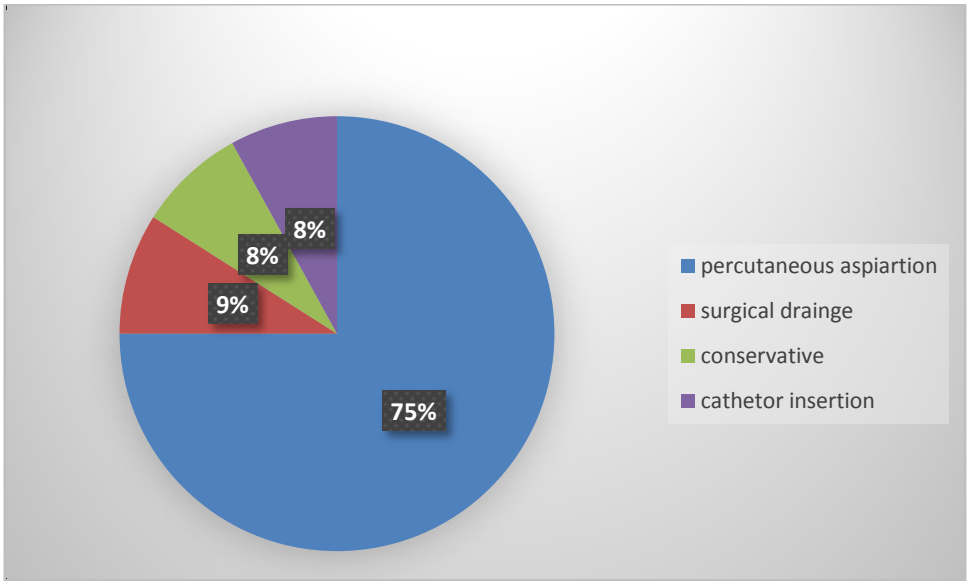
All patients chest Xray was done. 30% patients had right lower zone haziness

Ultrasonographic findings: solitary abscess seen in 68% of patients two or more in 32%, 80% had in right lobe 8% had in both lobes, segment 5 was the most common segment to have liver abscess in 50% next was segment 8 in 42%

Pus culture sensitivity done in all cases who underwent percutaneous aspiration, catheter drainage or lapartomy. 40patients had positive culture. Klebsiella was isolated in 17, E.coli in 6 patients, Acinatobacterbaumani in 6, pseudomonas in 4. Two patients had mycobacterium tuberculosis. Confirmed on AFB culture.



Blood culture was isolated in 4 patients which was Acinobacter.
Managemnent: All patients were started on empirical antibiotics. Those patients with well defined lesion underwent percutaneous guided aspiration. Those with forming abscesses were aspirated subsequently.
75% patients underwent aspiration. Minimum 20cc to 300 cc pus was aspirated. 42 % underwent aspiration twice. 20% patients were aspirated once. 38% required more aspirations.
8% patients underwent percutaneous catheter drainage.
9% patients underwent laparotomy due to complication ie rupture or peritonitis, inaccessible for aspirations due to the location of the abscess.
8% patients were treated with antibiotic alone.
Mean duration of hospital stay among aspiration patient was is 6.2 days and those among catheter patients was 9.5 days.



Complications : 30% patients had sympathetic pleural effusion. 12% has ascites. 9 patients presented with peritonitis due to ruptured liver abcess. 1 patient had intrapleural rupture.
Mortality: 6 % patients expired during the course , 3 patients were unfit for any procedure as they presented with shock and coagulopathy.

IV. Discussion

Liver abscess is a common surgical problem in a tropical country like India. Amoebic abscess was more common 58% similar to other studies sharma et al[7] .Oshnner et[5] al reported PLA mainly among young individuals with associated pyelophlebitis. Since then age of presentation has been progressively rising. Mean age in the study was 52 yrs (range 21-75) This is attributed to changing etiology of the pyogenic liver abscess. Now it is disease among middle aged.

Males predominate 90%, in literature also males predominate but the ratio of 13-15:1 where there were far larger male percentage compared to 9:1 in the present study. Most recent studies too have similar findingsalvarez etal[19], sharma etal[7] .

48% were alcoholic which is a known risk factor.

Most belong to the low socioeconomic status (76%) and having poor living standard which is accordance with previous studies mukhopadhyay et al[21].

Pain is the main symptom seen 94% of patients comparable to rest data Debakey and oschner[5] 88.6%, mehtal and vakil[16] 87.4%. fever was the next common symptom seen in 88% of patients. Debakeyndoschner 87% and Mehta etal[16] 90%.

52% had uncontrolled sugars.Diabetes is the most common concomitant disease chang KS et al[20]

Intercostal tenderness elicited in the right hypochondrium is the most consistent sign seen in 86% of patients, one of the diagnostic sign, Barbour and juniper found in 71.2 % of cases.

Pleural effusion seen in 30%, (p value < 0.05) is the most common complication of liver abscess, raghavan et al[8]reported pleural effusion in 15%,42% of patients had chest xray findings with pleural effusion most common

Most pyogenic abscess are cryptogenic with exact cause could not be demonstrated.Dhaval et al[13] also reported 56% as cryptogenic in origin .Though in literature biliary tract disease are the most common cause[4].

One important observation was that in 40 cases organism was isolated among which 17 of patients were due Klebsiella ($p < 0.05$). *K. pnemoniae* is now recognised as the most common isolate in asia is been reported by Chan KS et al[20]. Literature has predominance of *E.coli* organism[3].

Liver abscess is more common on the right side (80%) with segment 5 and 8 constituting about 92%, solitary abscess seen 68 %.

All patients having well defined abscess cavity underwent aspiration, 75 % of patients underwent aspiration. Majority had response by two aspirations about 62 % of patients showed clinical and radiological response.

In 8% patients a percutaneous catheter was introduced in those patients where single large cavity with thick echoes were present and aspiration failed.

Mean duration of hospital stay was lower for aspiration. ($p>0.05$) statistically not significant in view of small sample size among catheter patients.

Intermittent needle aspiration is probably as effective as catheter drainage Yu SC et al . Patients treated with catheter drainage have a longer duration of stay, the technique requires expertise and is costlier than percutaneous aspiration, but is useful in selected cases by Dhaval et al[13] .

9 % of patients had to undergo explorative laparotomy as these patients presented with complications , 2 patients has intrapleural rupture and 5 patients presented with peritonitis , 2 patients had multiple liver abscess not responding to treatment.While there appears a decreasing role of open surgical drainage still warranted in multiple abscess, or solitaryabscess with inaccessible to radiological intervention or cases of rupture.

Mortality was high among those patients presenting with ruptured liver abscess and requiring surgery.

V. Conclusion

Liver abscess is a common admission in the surgical wards. The clinical spectrum appears to be changing with incidence more in the middle aged males. Pain and fever is the most common symptom. Intercostal tenderness finding on examination which is best confirmed by ultrasonography. Percutaneous aspiration is the simplest and cheapest method for treatment of liver abscess and produce excellent results. It is less invasive and also multiple abscesses can be drained in single seating. Duration of stay is also reduced. *Klebsiella pneumonia* is the emerging organism. This needs to be evaluate with large sample size.Aggressive performance of image guided aspiration and administration of antibiotic contributes to reduction in mortality.

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