

INCIDENCE OF LIVER ABSCESS IN SOUTHERN PART OF ODISHA

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ABSTRACT

BACKGROUND:

As India is a one of the tropical country and home to 400 million people harbouring E. histolytica, the causative organism of amoebic liver abscess, it is important to thoroughly understanding of the liver abscess. Due to the rising incidence in alcoholism, diabetics & immune-compromised status, liver abscess becomes a matter of grave concern as complications rate are high especially in this sub-group, leading to increased morbidity and mortality. Due to the advancement in imaging modalities, a more concrete picture to treat liver abscesses is slowly evolving. However, much work remains to be done. The story has not ended: it has just begun. As in this country where rural population constitutes approximately 70% and therefore it is mandatory to develop appropriate & realistic guidelines for early diagnosis and management strategies for liver abscesses in order to reduce the morbidity and mortality associated with it.

AIM AND OBJECTIVE:

1. To study clinical presentation of liver abscess (Distribution with respect to age and sex, mode of presentations in this area).
2. To study risk factors associated with liver abscesses.
3. To study effectiveness of different modes of management.

PATIENTS AND METHODS:

All patients attending MKCG Medical College & Hospital, Berhampur in General Surgery OPD, Casualty and Inpatient department, irrespective of their gender/ background /socio economic status of age above 14 years were included in the study. 50 number of patients who attended during the study period from July 2017 to June 2019 were included in this study. Detailed history of patient entered in preformed proforma. Ultrasound of Abdomen and Pelvis was done routinely on the same day of presentation. CT scan was done in patients with multiple liver abscesses, caudate lobe abscess, left lobe liver abscess and ruptured liver abscesses. After investigations, they underwent different modalities of treatment as per the protocol. The results were recorded and analysed.

RESULTS:

Parenteral antibiotics alone without any drainage procedure has shown poor results in this series of studies. Only 17 patients were subjected to this mode of treatment and 6 of them needed aspiration, because of poor response to antibiotic alone. (Failure rate of 36%). Percutaneous aspiration mode of treatment has better results than I.V. Antibiotics alone treatment, with success rate of 54% after single aspiration with antibiotics in large cavity abscesses and failure cases of parenteral antibiotics alone mode of therapy, with success rate of 72% after two aspirations with antibiotics, with success rate of 96% after three aspirations with antibiotics. Tube drainage with antibiotics mode of management was tried in failure of percutaneous aspiration with antibiotics cases and success rate of 100%. Laparotomy and drainage with antibiotics mode of management was done only in cases, brought to the hospital with ruptured liver abscess with signs of peritonitis. The outcome of this mode was 33% of success rate.

CONCLUSION:

Chronic Alcohol intake is a definitive risk factor for development of liver abscess. Diabetes Mellitus is the prevalent comorbid factor, seen especially in the elderly. Other comorbid factors include hypertension, bronchial asthma etc. None of these seemed to have a significant correlation with the disease process. Pig tail drainage is preferred in patients with single abscess of size less than 5 cm situated in superficial segments. Laparotomy and drainage was done in patients with ruptured or impeding rupture abscess. Conservative management with antibiotics was also useful in very small single cavity abscess. The incidence of complications was predominantly seen in patients with ruptured liver abscess who underwent laparotomy, in form of sepsis followed by MODS and death. Residual abscess cavity was seen in small number of patients following pig tail drainage but it was not Significant.

INTRODUCTION:

Liver abscess has been recognized since Hippocrates (circa 400 B.C.) who speculated that the prognoses of the patients were related to the type of fluid within the abscess cavity still it remains a challenging situation (especially in tropical countries due to poor hygiene & sanitation, alcoholism and reduced literacy rate due to its highly variable presentation, causing diagnostic difficulties.¹

As India is a one of the tropical country and home to 400 million people harbouring *E. histolytica*, the causative organism of amoebic liver abscess, it is important to thoroughly understanding of the liver abscess¹. Due to the rising incidence in alcoholism, diabetics & immune-compromised status, liver abscess becomes a matter of grave concern as complications rate are high especially in this sub-group, leading to increased morbidity and mortality.

Due to the advancement in imaging modalities, a more concrete picture to treat liver abscesses is slowly evolving. However, much work remains to be done. The story has not ended: it has just begun. As in this country where rural population constitutes approximately 70% and therefore it is mandatory to develop appropriate & realistic guidelines for early diagnosis and management strategies for liver abscesses in order to reduce the morbidity and mortality associated with it.¹

The liver is one of the most common organ subjected to the development of abscesses. In one study of 540 intraabdominal abscesses over a 12-year period liver abscesses made 48% of all visceral abscesses.²

Oschner & Debaquey described Pyogenic liver abscess in 47 cases in the year 1938 in their classic paper and reviewed the world literature.²

In 1953, McFadzean and associates advocated closed aspiration and antibiotics for treatment of solitary pyogenic liver abscess.³

In older days, Pyogenic liver abscess was largely a disease of people of 20-30yrs age group but now the spectrum of disease has changed to age group 50-60yrs with biliary tract diseases & cryptogenic as the main etiology.⁴

In 1846, Waller described pyogenic abscess as a disease characterized by suppurative thrombophlebitis of the portal vein and formation of single or multiple abscesses.⁵

With the advent & development of improved antibiotics over the passage of time, incidence of pyogenic liver abscess would be expected to decrease, but the incidence is increasing as indicated by studies of Huang & Associates (1996) in which there were 20-22 cases per 100, 000 hospital admissions, appears to be double those of previous 2 decades.⁶

In 1883, Koch initially demonstrated amoebas in the capillaries and tissues adjoining the wall of the liver abscess.⁷ In 1887 Entamoeba Histolytica was first recovered from the wall of a hepatic abscess by Kartulis.⁷

Yeoh Kg et al-National University Hospital, Singapore, reviewed 41 cases from 1988 to 1994 27 (65%) pyogenic, 6 (15%) amoebic, 2 (5%) tuberculosis, 6(15%) intermediate. Percutaneous needle aspiration was performed for 85% of pyogenic abscess, and surgery was indicated in only two cases because of complications. They found that percutaneous aspiration of liver abscess not only help to confirm the diagnosis but also to uncover clinically unsuspected conditions like malignancy and tuberculosis which may mimic liver abscess.⁸

Hai AA, Singh A et al Department of Surgery Patna Medical College & Hospital India reviewed 220 cases of amoebic liver abscess between 1981-1986. The majorities were young middle-aged males belonging to lower socioeconomic group and 85% gave history of drinking toddy fermented palm juice. Over 88% responded well to conservative treatment with aspiration. Laparotomy was required in slightly over 10% of cases and in these the mortality was 12% as compared to 2% with conservative treatment.⁹

Alvarez Perez et al Department of Surgery, San Aagustin Hospital Aviles Spain Reviewed pyogenic liver abscess, 133 patients treated in hospitals during the year 1985 to 1987 were studied. 63(47%) were subjected to percutaneous drainage, 45 (34%) were treated by open drainage (surgical) and the remaining 25 cases (19%) received antibiotic therapy only. Prognostic variables were the presence of shock, anaemia, elevated prothrombin time and mixed infection. Treatment of pyogenic liver abscess should be tailored to each patient, the most of them can be successfully treated with antibiotics and percutaneous methods. Those with signs of multiorgan failure or septicaemia should preferably be managed in ICU.¹⁰

Amoebiasis are present in one tenth of the world population with 100, 000 deaths worldwide each year due to invasive amoebiasis. Amoebiasis is the third most common parasitic cause of death

worldwide. Amoebic abscess is one of the most common complication of intestinal amoebiasis and can occur many years after exposure in endemic areas.¹¹

Indirect haemagglutination test is a reliable serologic test for hepatic amoebiasis, having sensitivity and specificity was 62% and 96% respectively when compared to ELISA having sensitivity and specificity of 69% and 90% respectively. The positive predictive value of IHA was 91% while negative predictive value was 79%. Similarly, the positive predictive value of ELISA was 87% while negative predictive value was 74%.¹²

Approximately 80% of patients with amoebic liver abscess present with symptoms lasting from few days to 4 weeks. The duration of symptoms has been found to be typically less than 10 days. The typical clinical picture is a patient 20 to 40 years age who has recently travelled to an endemic area, with fever, chills, anorexia right upper quadrant pain and tenderness and hepatomegaly.⁴

Pyogenic hepatic abscess may be multiple or single, and usually involves the right lobe. The abscesses were single in 28.8 per cent, multiple in 71.1 per cent, and involved the right lobe alone in 41.8 per cent of the collected cases. In the authors' forty-seven cases these incidences were 54.5 per cent, 45.4 per cent, and 68.1 per cent, respectively.¹³

In acute liver abscess, Aspartate aminotransferase (AST) levels are high. In chronic liver abscess, the alkaline phosphatase level trends to be elevated, and the AST level tends to be within normal limits. Overall, the alkaline phosphatase level is elevated in about 70% of patients with amoebic liver abscess.¹¹

Leucocytosis, hypoalbuminemia, hyperbilirubinemia were common laboratory findings. The “chocolate sauce”, “anchovy paste” aspirate is considered pathognomic of an amoebic abscess.

Most hepatic abscesses involve the right lobe of liver (postero-superior segment), accounting for three-fourth of the cases, in 20% of cases the left lobe is involved and in rare cases caudate lobe is involved.⁴

Most of the pyogenic abscesses are polymicrobial in nature and account for about 40% of the cases. In pyogenic liver abscess *Escherichia coli* and *Klebsiella pneumonia* most commonly cultured organisms.⁴

The classic description of the presenting symptoms of liver abscess are fever, jaundice, and right upper quadrant pain & tenderness. A recent study from Taiwan of 133 patients found fever in 96% of the patients, chills in 80%, abdominal pain in 53%, and jaundice in 20%.^{4, 14}

Giorgio and colleagues reported a series of 115 patients with a 98.3% success rate for needle aspiration, no mortality and no procedure related morbidity.¹⁵

Amoebic liver abscesses smaller than 5cm size were treated with metronidazole therapy while those of size 5 -10 cm is not clear. Abscess of size 5-10 cm, solitary, right lobe uncomplicated managed by metronidazole while complicated types managed with guided aspiration.¹⁶

Approximately 5-15% of patients with amoebic liver abscess may be resistant to metronidazole. Parasites persist in the intestine in up to 40-60% of patients who get a nitroimidazole especially Metronidazole. Thus, nitroimidazole treatment should be followed with a luminal agent Paromomycin or diloxanide furoate to cure luminal infection or risk of relapse from residual infection in the intestine. Failure of conservative therapy, Rupture into pleural space, Fistulisation resulting in haemorrhage or sepsis were managed by open surgery.^{3, 16}

Patients with liver abscess who require aspiration irrespective of the aetiology includes age 55 years or older, an abscess with size 5 cm or more in diameter, failure of medical therapy after 7 days, left lobes of the liver involved.¹⁷

Hepatic abscesses, both pyogenic and amoebic, become the important cause of morbidity and mortality in tropical countries. Although the primary mode of treatment of amoebic liver abscess is medical, amoebic abscesses (15%) are not responding to medical therapy. Secondary bacterial infection occurs in 20% of amoebic liver abscesses. Thus, drainage may be required in those cases with amoebic liver abscesses. For most intra-abdominal abscesses percutaneous drainage is now considered as the standard treatment of choice.

Ultrasound & CT are the mainstay in the diagnostic modalities for hepatic abscess. The sensitivity of ultrasound in diagnosing hepatic abscess is around 80-95%. The sensitivity of CT abdomen in diagnosing hepatic abscess is around 95-100%.⁴

Factors independently associated with poor outcome in Amoebic Liver abscess are:^{11,16}

- 1) Elevated serum bilirubin (>3.5mg/dl)
- 2) Encephalopathy,
- 3) Hypalbuminaemia (<2.0gm/dl)
- 4) Multiple abscess cavities,
- 5) Abscess volume greater than 500ml
- 6) Anaemia & diabetes.

AIM AND OBJECTIVE OF THE STUDY:

1. To study clinical presentation of liver abscess (Distribution with respect to age and sex, mode of presentations in this area).
2. To study risk factors associated with liver abscesses.
3. To study effectiveness of different modes of management.

MATERIALS:

50 number of patients who attended surgical unit of MKCG Medical college and Hospital, Berhampur, Ganjam, Odisha, India during the study period from July 2017 to June 2019 were included in this study.

Inclusion criteria:

1. All cases of liver abscess diagnosed clinically and/or ultra-sonographically.
2. All cases of bacterial and parasitic liver abscess
3. All cases in evolving, liquefied & ruptured stage with or without peritonitis
4. All cases of Diagnosed Liver Abscess being referred to MKCG Medical College & Hospital.

Exclusion criteria:

1. All cases of age less than 14 year.

METHODS:

Patient data collection and evaluation

- Data will be collected from all patients attending MKCG Medical College & Hospital, Berhampur in General Surgery OPD, Casualty and Inpatient department, irrespective of their gender/background /socio economic status. Age above 14 years included in the study. The patients will be evaluated and followed up according to protocol.
- Detailed history of patient will be entered in proforma.
- Complete hemogram, LFT, Prothrombin time, Serology for amoebic antigen will be sent immediately on presentation.
- Ultrasound of Abdomen and Pelvis will be done routinely on the same day of presentation.
- CT scan was done in patients with multiple liver abscesses, caudate lobe abscess, left lobe liver abscess and ruptured liver abscesses.
- After investigations, they underwent different modalities of treatment:
 1. Conservative management with antibiotics alone.
 2. Percutaneous aspiration with antibiotics- USG guided
 3. Closed tube drainage with antibiotics- USG guided.
 4. Open surgical drainage with antibiotics.

Immediately after admission all patients were put on the intravenous antibiotics, regardless of the organism or condition of the patient.

Depending upon the number and size of the cavity, nature of the illness, location of the abscess cavity, patients were categorized into the following methods.

1. Antibiotics alone- less than 5 cm

The routine drugs were used like ampicillin + aminoglycosides+ metronidazole or Third generation cephalosporin and metronidazole which were supplied by our hospital.

2. Patients with following criteria were taken for percutaneous drainage.

- Patients who continued/ worsened to treatment with antibiotics alone
- Liver abscess with more than 5cm in size
- Clinical or USG features suggest impending rupture.

3. Open drainage was done in patients having -

- Thick pus which could not be aspirated.
- Patients with ongoing sepsis ever after antibiotics treatment and percutaneous drainage.
- Multilobular abscess
- Abscess in the left lobe
- Ruptured abscess

Bacterial culture and sensitivity were done in the patients has undergone with aspiration and open surgical methods and the antibiotics were changed according to culture and sensitivity.

Radiologically guided aspiration and drainage was performed under local anaesthesia, after putting the patient on Vitamin K Prophylaxis for 3 days. After emptying the cavity 25 to 50ml of metronidazole was flushed through the same needle for anchovy sauce pus cavities.

NEEDLE ASPIRATION

With an 18-gauge needle and with different size drainage catheter placed by Modified Seldinger technique. In this, the catheter was placed in the abscess cavity and left to straight drain in apposition as dependent as possible to facilitate drainage.

TUBE DRAINAGE

The patient was again monitored for clinical improvement and cessation of drainage from the abscess (the catheter was slowly removed as the cavity shrinks). The pus aspirated at the time of drainage was routinely sent for microbial culture and sensitivity.

The recommended duration of parenteral antibiotic therapy is continued for 2-3 months or until there is a favourable clinical response.

Complementary oral antimicrobial therapy continued for further 2-4 weeks or until clinical, biochemical and radiological follow up demonstrates complete resolution of abscess cavity.

Management strategies for liver abscesses followed:

- Medical management
- Image guided drainage
- Open drainage
- Complications if any, followed up

Follow-up of patients:

Patients will be followed up over a period of 3 months

- 1) Once in 2 weeks for first 1 months
- 2) Then on a monthly basis for 2 months, to look for recurrent attacks or to look for the development of complications and to monitor the efficacy of the treatment given.

The data was recorded in preformed proforma and informed consent were taken from the patients and ethical clearance was also obtained from the institution.

RESULTS AND DATA ANALYSIS:

Totally 50 patients who met the inclusion criteria were studied.

Table. 1: AGE DISTRIBUTION

No. of Patients	...	50
Mean	...	45.28
Minimum	...	25
Maximum	...	80

The mean age of distribution is 45.28.

Table. 2: SEX DISTRIBUTION

SEX	Frequency	Percent
Male	38	76.0
Female	12	24.0
Total	50	100

In this study of 50 patients, liver abscess is present in 38 males (76%) and 12 females (24%)

Table-3: CLINICAL FEATURES

	Abdominal pain	Fever	Jaundice	Others
Present	41	36	11	16
Absent	9	14	39	34

Overall, most common presentation of liver abscess in this study was abdominal pain (82%), then fever (72%).

Table-4: CLINICAL SIGNS

Intercostal Tenderness	Frequency	Percentage
Present	33	66%

Absent	17	34%
Total	50	100%

Out of 50 patients, 33 patients had intercostal tenderness 66%.

Table-5: COMPARISON OF CLINICAL FEATURES OF PYOGENIC AND AMOEBIC LIVER ABSCESS

	Amoebic	Pyogenic	Total	Chi-Square	P Value
Pain Abdomen				13.89	0.0001
Absent	6	10	16		
Present	30	4	34		
Total	36	14	50		
Fever				11.81	0.0005
Absent	22	1	23		
Present	14	13	27		
Total	36	14	50		
Jaundice				13.89	0.0001
Absent	30	4	34		
Present	6	10	16		
Total	36	14	50		
Others				0.39	0.52
Absent	24	8	38		
Present	12	6	22		
Total	36	14	50		

In this study, in case of pyogenic liver abscess most common presentation was fever, whereas in case of amoebic liver abscess most common presentation was abdominal pain.

Table-6: LOCATION OF ABSCESS

Involved part	No. of Patients	Percentage
Only right lobe	41	82
Only left lobe	4	8
Both lobes	4	8
Caudate	1	2

In this study, most common site of liver abscess is in right lobe i.e., 82%.

Table 7: NUMBER OF ABSCESS CAVITY

No of cavity	Right	Left	Caudate	Both lobe
Single	36	4	1	0
Two	0	0	0	4
Multiple	5	0	0	0

In this study, solitary abscess found to be 82% which is more in right lobe.

Table 8: NUMBER OF CAVITY AND ITS MODE OF TREATMENT

No. of cavity	I.V. Antibiotics Alone	Aspiration + antibiotics	Tube drainage+Antibiotic	Laparotomy+ Drain+ Antibiotics
Multiple	5	3	0	0
Two	0	4	0	0
Single	12	26	4	3

The above table reflects that, 17 patients (34%) treated with antibiotics alone, whereas 33 patients (66%) treated with aspiration and antibiotics.

Table -9: MODE OF OUTCOME WITH PARENTERAL ANTIBIOTICS ALONE

Lobe	No. of patients	Cured	Failure
Right	15	10(66.6%)	5(33%)
Left	1	0	1(100%)
Both	0	0	0
Caudate (small abscess)	1	1(100%)	0

Above table shows that, out of 17 patients, 11 patients (64%) cured with antibiotics alone.

Table 10: MODE OF OUTCOME WITH NUMBER OF ASPIRATIONS

Lobe	No. of Patients	1 st Aspiration	2 nd Aspiration	3 rd Aspiration
Right	27	27	9	4
Left	2	2	1	1
Both	4	4	4	2

In the above table, out of 33 patients after doing 1st aspiration, 14 patient needed 2nd aspiration i.e., 14% and 7 patient (21%) needed 3rd aspiration.

Table 11: OUTCOME AFTER EACH ASPIRATION

Lobe	After 1 st (Cure rate)	After 2 nd (Cure rate)	After 3 rd (Cure rate)
Right (27)	17(63.6%)	22(81%)	26(96%)
Left (2)	1 (50%)	1(50%)	2(100%)
Both (4)	0	2(50%)	4(100%)

In this study of USG guided aspiration that carried in 33 patients, 18 patients (54%) cured after 1st aspiration, 24 patient (72%) cured after 2nd aspiration, 32 patients (97%) cured after 3rd aspiration.

Table 12: TUBE DRAINAGE WITH ANTIBIOTICS AND ITS OUTCOME

Lobe	No. of Patients	Outcome (Cured)
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Right	2	2
Left	2	2

Above table shows, out of 4 patients, all patient i.e., 100% cured after tube drainage.

Table 13: LAPAROTOMY AND DRAINAGE WITH ANTIBIOTICS

Laparotomy	No. of Patients	Percentage
Cured	1	33.3%
Failure	2	66.4%
Total	3	100%

The above study shows, out of 3 patient, 1 patient (33%) cured after laparotomy and 2 patient (66%) died after laparotomy.

Table 14: LOCATION OF ABSCESS CAVITY AND ITS MANAGEMENT

Lobe	I.V. Antibiotics Alone	Aspiration + antibiotics	Tube drainage + Antibiotic	Laparotomy+ Drain + Antibiotics	Total
Right					
Single	10	24	02	03	36
Multiple	05	03	00	00	05
Left					
Single	01	02	02	00	04
Both	00	04	00	00	04
Caudate	01	00	00	00	01

In the table-15 reflects that, solitary abscess that are most common in right lobe of liver (82%) and 66% of right lobar abscess managed with aspiration and antibiotic with 96% cure rate after 3rd aspiration. Small caudate lobe abscess managed with I.V. antibiotics alone.

Table 16: LOBAR INVOLVEMENT, TREATMENT AND ITS OUTCOME

Lobe involved	Mode of Treatment	Outcome			
		Cured		Failure	
Right lobe	Parenteral antibiotics alone:				
	Single	8	80%	2	20%
	Multiple	2	40%	3	60%
	After				
	1 st Aspiration	17	63%	10	37%
	2 nd Aspiration	22	81%	4	15%
	3 rd Aspiration	26	96%	1	4%
	Tube	2	100%	0	0%

Left lobe	Antibiotics alone	0	0%	1	100%
	After -				
	1 st Aspiration	1	50%	1	50%
	2 nd Aspiration	1	50%	1	50%
	3 rd Aspiration	2	100%	0	0%
	Tube	2	100%	0	0%
Both lobes	Antibiotics alone	--	--	--	--
	After -				
	1 st Aspiration	0	0%	4	100%
	2 nd Aspiration	2	50%	2	50%
	3 rd Aspiration	4	100%	0	0%
Caudate (small abscess)	Antibiotics alone	1	100%	0	0%

The above table shows that, abscesses present in right lobe were managed with 66% cure rate with antibiotic alone, 96% cure rate after 3rd aspiration and 100% cure rate after tube drainage. Abscesses present in left lobe were managed with 100% failure rate after I.V. antibiotic alone and 100% cure rate after 3rd aspiration and tube drainage. Abscesses present in both lobes were managed with 100% cure rate after 3rd aspiration.

Table 17: MICROBIOLOGY

Microbiology		Frequency
Amoebic	Present	38
	Absent	12
	Total	50
Pyogenic	Present	12
	Absent	38
	Total	50

Out of the 50 cases in this study, 38 patients (76%) were diagnosed to have amoebic liver abscesses, remaining 12 patients (24%) were diagnosed to have pyogenic liver abscesses.

DISCUSSION:

Hepatic abscess was first described in ancient days by Hippocrates around 4000.B.C. In 1938, Ochsner's review of 47 cases of pyogenic liver abscess were treated by open surgical drainage as the definitive therapy. Advances in diagnostic and therapeutic radiology coupled with improvements in microbiological identification and therapy have decreased the mortality rates to less than 5-30% .^{3, 13}

In this study 50 patients who met the inclusion criteria were included. In our study, the mean age of distribution of liver abscess is 45.28

In the study, liver abscesses were present in 38 males (78.3%) and 13 are females (21.7%).

In our study, most common presentation was abdominal pain (82%), then fever (72%). Out of 50 patients, 33 patients had intercostal tenderness (66%).

In this study, in case of pyogenic liver abscess most common presentation was fever, whereas in case of amoebic liver abscess most common presentation was abdominal pain.

Out of 50 cases, abscess located in right lobe is 41 cases (82%). In this study, most of the abscesses were solitary (82%). Out of 50 patients in our study, 11 patients (22%) responded to medical management alone. Then 36 patients (72%) were treated by image guided aspiration or drainage. Those who required and treated by surgical drainage was 3 patient (6%), who are all not responding to the above modalities of treatment and those with complication.

Out of the 50 cases in this study, 38 patients (76%) were diagnosed to have Amoebic liver abscesses, remaining 12 patients (24%) were diagnosed to have pyogenic liver abscesses.

In this series of study 50 patients were taken, among these 2 cases died.

USG and CT scan of the abdomen were the gold standard diagnostic modalities. The choice of empirical treatment with antibiotics like ampicillin+ aminoglycosides + metronidazole or third generation cephalosporins + metronidazole was given. This regime reviewed and altered according to the culture and sensitivity after aspiration.

Malik et al reported their experience of managing 169 pyogenic liver abscesses, 16 of which were treated with Intravenous antibiotics alone for 2 weeks. This approach was successful in only 6 of them, the remaining 10 required open surgical drainage, for control of sepsis.¹⁸

Blessmann and colleagues reported a prospective, randomized trial of patients with amoebic abscesses that were treated with metronidazole alone or with USG – guided aspiration of the fluid plus medication. Abscess aspiration resulted in improved liver tenderness within the first 3 days, but no other difference was demonstrable between the two groups. They advocated drug treatment alone for uncomplicated abscesses with a diameter up to 10 cm and located in the right lobe of the liver.¹⁹

One randomized trial has evaluated percutaneous aspiration versus percutaneous catheter drainage. Success rates were 60% in the aspiration group and 100% in the catheter group, but all but one patient in the aspiration group had a single aspiration.⁴

A randomised control by Rajak et al in 1998 compared aspiration alone to catheter drainage. Sixty-four randomized patients were analysed, and there were similar outcomes in terms of treatment success rate, hospital stay, antibiotic duration, and mortality²⁰. In the aspiration-only group 40% required two aspirations, and 20% required three aspirations. In general, catheter drainage remains the treatment of choice, although a trial of a single aspiration is reasonable to consider.^{4,20}

Finally, a third trial randomized 60 patients to FNA or PCD. The authors succeeded in all 30 patients undergoing one or two PCDs. In the FNA group, a 33% failure rate was reported after three aspiration procedures. None of the patients with multiloculated lesions was effectively treated by FNA.

The authors recommended PCD as first-line treatment option but considered FNA a valid alternative in simple abscesses smaller than 50 mm in diameter.¹¹

In this series, 17 patients (34%) have treated with antibiotics alone. Among this patients, 11 patients (65%) were cured, 6 (35%) patients were converted into surgical methods of management. In these 11 patients, 8 (72%) patients had right lobe liver abscess with single cavity, 2 (18%) patients with multiple cavity and one patient with caudate lobe abscess with small cavity. 33 patients (66%) have undergone aspiration and antibiotics mode of management. After single aspiration with antibiotics, 18 patients (54%) got cured. At the end of two aspirations with antibiotics mode of treatment, 24 patients (72%) were cured. After three aspirations with antibiotics coverage, 32 patients (96%) (got cured. One patient's treatment has been changed from aspiration with antibiotics into tube drainage with antibiotics due to increasing in size of the cavity during the course of treatment. That patient presented with right lobe liver abscess with H/O pulmonary tuberculosis with completing 3 months course of anti-tubercular drugs (DOTS REGIMEN). So, 32 patients were cured and 1 patient was converted into closed tube drainage.

Four patients have undergone closed tube drainage with success rate of 100%. In this category, three patients were undergone tube drainage with antibiotics directly. Indication of tube drainage due to failure of aspiration with antibiotics in pulmonary tuberculosis with right lobe liver abscess. Among these four patients, two patients were affected with right lobe liver abscess, two with left lobe abscess with large cavity with impending rupture. Three patients were admitted with ruptured liver abscess for which laparotomy and drainage was done. Among this, 2 patients died and one patient got cured.

Patients with only left lobe liver abscess has undergone closed tube drainage in 50% of patients remaining were managed by aspiration with antibiotics. Pus culture and sensitivity was done in all patients who had undergone aspiration or drainage procedure(open/closed). Microbial culture positive in 14% of cases, most being E. coli. Of this study, 30% of the cases had anchovy sauce pus and 34% of the cases had sterile pus. Pus culture and sensitivity was not done in 22% of patients, who were treated with I.V.Antibiotics alone.

CONCLUSION:

Chronic Alcohol intake is a definitive risk factor for development of liver abscess. Diabetes Mellitus is the prevalent comorbid factor, seen especially in the elderly. Other comorbid factors include hypertension, bronchial asthma etc. None of these seemed to have a significant correlation with the disease process. Pig tail drainage is preferred in patients with single abscess of size less than 5 cm situated in superficial segments. Laparotomy and drainage was done in patients with ruptured or impending rupture abscess. Conservative management with antibiotics was also useful in very small single cavity abscess. The incidence of complications was predominantly seen in patients with ruptured liver abscess who underwent laparotomy, in form of sepsis followed by MODS and death. Residual abscess cavity was seen in small number of patients following pig tail drainage but it was not Significant.

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