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LIVER ABSCESSES, SINGLE INSTITUTIONAL STUDY

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ABSTRACT

Introduction:-Liver abscess, a disease troubling mankind from ancient times, has earliest documentation in the Sanskrit document, Bhrigu Samhita (3000 B.C.),[1] Where right upper abdominal pain, have potentially lethal consequences, if prompt diagnosis and treatment are not accomplished.[1]However two major types are known, amoebic and pyogenic, in medical literature.[1,2] Pyogenic liver abscess constitute major bulk of hepatic abscess in western countries.[3] The diagnosis is confirmed by ultrasonography, reddish brown (anchovy-paste like material) aspirate from abscess. The diagnosis, treatment and prognosis, of liver abscess have evolved remarkably over past few years. Imaging has improved diagnostic competence and has altered therapeutic strategy.[4] The study aims at early clinical and diagnosis on imaging of liver abscess, to set up some guide lines in view of conservative or either intervention.[5] **Methods:-** The present study was hospital based longitudinal study, carried out in tertiary care teaching hospital from November 2013 to November 2015. A total of 55 patients were enrolled in the study. All patients with suspicion of having liver abscess were confirmed on Imaging & included as our study population. We studied mainly presentation, role of conservative treatment, Aspiration, pigtail catheter, Outcome, and post procedural complications. **Results:-** All patients presented with Pain in abdomen, majority patients had fever with or without rigors, deranged liver function. Imaging is the most diagnostic method, also helps in therapy, & follow up. **Conclusion;-** Males are affected more than females, Imaging is the best modality for diagnosis, therapy and follow up. Aspiration or pigtail drainage is the standard method of drainage. Pigtail drainage is the better method of treatment than aspiration.

KEYWORDS: Liver abscess, imaging, USG, CT, Pigtail drainage, Aspiration.

INTRODUCTION

Liver abscess, has earliest documentation in the Sanskrit document, Bhrigu Samhita (3000 B.C.),[1] Where right upper abdominal pain, have potentially lethal consequences, if prompt diagnosis and treatment are not accomplished.[1] However two major types are known, amoebic and pyogenic, in medical literature.[1 2] Pyogenic liver abscess constitute major bulk of hepatic abscess in western countries.[3] Although no distinct clinical criteria exist for distinguishing the two types, the diagnosis of amoebic and pyogenic abscess can be made by following points-younger age, resident or recent travel to areas of endemic Amoebiasis, diarrhoea and marked abdominal pain raise clinical suspicion of amoebic liver abscess. The incidence of amoebic liver abscess varies throughout the world and large number of cases in developing countries (constituting major bulk of total cases) remain unreported.[3,4] Pyogenic liver abscesses, result from ascending biliary tract infection, haematogenous spread via portal venous system, generalized septicaemia with involvement of liver by way of hepatic arterial circulation, direct spread from intra-peritoneal infection and other causes. Escherichia coli, klebsiella, and streptococcus, are most commonly found organism followed by staphylococcus and pseudomonas.[1,5] The diagnosis is confirmed by ultrasonography, reddish brown (anchovy-paste like material) aspirate , negative gram stain, resolution with Metronidazole treatment. The diagnosis of pyogenic liver abscess is made by symptoms of picket fence configuration of temperature chart, nausea, vomiting and anorexia. Pain is late symptom and is common with large solitary abscesses.[5] Investigations reveal Leucocytosis, anaemia and positive blood culture for bacteria. The diagnosis, treatment and prognosis of liver abscess have evolved remarkably over past few years.[6] Imaging has improved diagnostic competence and has altered therapeutic strategy by allowing the possibility of percutaneous drainage. Rapid diagnosis, effective antimicrobial therapy, treatment of underlying disease, and orderly approach to therapeutic interventions directed towards the abscess remain the mainstay of care for the patient with hepatic abscesses.[7] The concept of minimally invasive drainage, continues to

be of paramount importance in treatment of hepatic abscesses.[7,8]

With these views in mind, a study has been carried out in 55 patients, to evaluate the current features of liver abscess in regards to the presentation, its association with addictions, co morbid conditions and the different modalities of treatment. The study aims at early clinical and imaging wise diagnosis of liver abscess, in view of management with either conservative or intervention (Aspiration, Pig tail catheterization) to be done in a case of liver abscess in a given population.

METHODS AND MATERIALS

The present study is hospital based longitudinal study, carried out in tertiary care hospital, from November 2013 to November 2015.

Study Population -A total of 55 patients were enrolled in the study. (N=55)

Inclusion Criteria:-Patients suspected of having liver abscess on the basis of history and clinical assessment which were then Confirmed by USG and laboratory work up.

Patients more than 18 years.

Exclusion Criteria:- Patients aging less than 18 years.

Abscess associated with malignancy.

Immunocompromised patients.

Ascitis

Liver abscess which ruptured in peritoneal, Pericardial, pleural cavity.

Who do not want to enrol in the study.

Sample Design

55 patients, admitted with clinical, laboratory and imaging feature of liver abscess.

The patients were divided in two groups.

Group 1- with abscess cavity <5 cm (150 cc) – they received only medical management and /or percutaneous aspiration.

Group 2- with abscess cavity >5 cm (>150 cc) or smaller abscess which failed to respond to drug therapy alone, left lobe abscess, they in addition treated with USG guided – percutaneous needle aspiration or catheter drainage.

Study Factors-Age, gender, Occupation, Address, Socioeconomic status, Addiction, co morbidity, Complete Haemogram, Liver Function test, USG feature. Culture of aspirated material from liver abscess Blood culture Treatment modalities, Treatment outcome.

METHODOLOGY

A complete physical examination including examination of abdomen and chest following proper history. Specific Investigations including Hb%, TLC ,DLC, liver function test, prothrombin time, blood for HBSAg, HIV, fasting and post prandial blood sugar, ultrasound of abdomen, chest X ray, microscopic examination and culture of aspirated pus , blood culture. The patients were divided into two treatment groups.

Group 1- with abscess cavity <5 cm (150 cc) – they received only medical management and /or percutaneous aspiration.

Group 2- with abscess cavity >5 cm (>150 cc) or smaller abscess which failed to respond to drug therapy alone , left lobe abscess they in addition treated with USG guided – percutaneous needle aspiration or catheter drainage.

Medical Treatment

Amoebic liver abscess- all patients with diagnosis of amoebic liver abscess of size < 5cm were treated with Metronidazole divided dose.

Pyogenic liver abscess- All patients with PLA of size <5cm(<150 cc) or if there were small multiple abscess which were either solidified and not amenable for tapping were treated initially with broad spectrum antibiotics till the culture and sensitivity report were available then treatment was guided as per sensitivity report.

Guided aspiration

The patients with abscess size >5 cm or smaller abscess those who failed to improve clinically, left lobe abscess were subjected to imaging guided aspiration. Informed consent were taken from the patients explaining the complications of the procedures for which open surgical intervention might be needed. The patients were examined daily for clinical improvement. Improvement in fever, and USG was done on 3,7,14 day, repeat TLC was done on day 3.

Technique of pigtail catheter drainage (PCD) of liver abscess:

The standard pigtail external drainage catheter, ranging from 8.5Fr to 10Fr having multiple side holes and with a trocar and cannula, drain kept in the abscess cavity. The draining catheter was properly secured in its place and connected to a collecting system. Chest X-ray was done after catheter drainage to rule out pleural effusion or pneumothorax. Catheter output charting was done daily and a chart was maintained. The first review ultrasound was done when drainage over last 24 hours had declined to < 10ml .If the abscess had resolved , the catheter was removed .If residual cavity was present ,the catheter was flushed with saline and aspirated till no material was found. Further review ultrasound was done every third

day and the catheter was removed if the catheter drainage had remained minimal. Otherwise, the catheter was left until catheter drainage had stopped. Ultrasound was repeated until the cavity had either decreased by 50% or more of its original size, or remains static with clinical recovery.

Outcome was assessed by

Relief of symptoms, Resolution of liver abscess cavity ultrasonographically on third day after treatment started. Improvement of symptoms on third day of particular treatment and Decrease in total leukocyte count on third day after particular treatment started.

Recurrence and readmission in hospital for recurrence of abscess.

Statistical analysis

Descriptive statistics

The data was presented in tabular form with mean, standard deviation, range and others for descriptive statistics.

Analytical Statistics

Correlation was established using McNemar Fisher t test and qualitative analysis was done using Chi square test. The statistical software used in the analysis was SPSS20.0 EPR Info software.

Total of 55 patients with a diagnosis of liver abscess were included in the study**.** The demographic, clinical, laboratory, and imaging data for all patients was collected and recorded on a predesigned record form. The outcome was studied. The observations are as follows.

Table 1: Showing age distribution.

Age group	Frequency	Percentage
> 20-30	8	14.5
>30-40	13	23.6
>40-50	11	20
>50-60	13	23.6
≥ 61	10	18.2
Total	55	100

Table 2: Showing gender distribution.

		Sex		Total
		Male	Female	
Type of Abscess	Amoebic Liver Abscess	24	10	34
	Pyogenic Liver Abscess	19	2	21
Total		43	12	55

RESULTS

Table 3: Showing clinical symptoms.

Variable	Amoebic Liver Abscess	Pyogenic Liver Abscess	Total	Percentage	P value
Pain	**34(100%)**	**21(100%)**	55	100%	
Fever	**32(94%)**	**20(95%)**	52	94.54%	0.859
Vomiting	**20(59%)**	**16(76%)**	36	65.50%	
Chills and rigors	**19(55%)**	**14(66%)**	33	60%	
Jaundice	**16(47.05%)**	**9(42.85%)**	25	45%	0.761
Diarrhea	**14(41.17%)**	**5(23.80%)**	19	34.50%	

Table 4: Showing clinical signs.

Signs	Amoebic	Pyogenic	Total	Percentage	P value
Lump in abdomen	12(35.29%)	7(33.33%)	19	34%	
Hepatomegaly	23(67.64%0	18(85.71%)	41	74%	0.135
Inter costal tenderness	24(70.58%)	14(66.66%)	38	69.1%	0.76
Respiratory signs(decreased air entry)	16(47.05%)	6(28.57%)	22	40%	

Table 5: Showing comparison of Imaging features of liver abscess.

Name of Author	RT lobe Abscess%	LT lobe Abscess%	Both lobe Abscess%	Single Abscess%	Multiple Abscess %
Wood TF, Rose(2010)	55%	16.6%	28.4%	73.3%	27.7%
Jeffrey Jr RB(2001)	73%	17%	10%		
Khanna S, Chaudhary et al(2011)	81%	19%	0	77%	23%
Amha Kebede et al(2011)	84%	6%	10%	61%	39%
Our study(2015)	84%	3.3%	11.7%	64%	36%

Table 6: Showing Liver Function Tests inpatients.

Signs	Amoebic	Pyogenic	Total	Percentage	P value
Bilurubin >1.2	14(41%)	10(48%)	24	44%	0.64
Raised Alkaline Phosphatase	16(47.1%)	11(52%)	27	49.09%	0.701
Raised Aspartate Transaminase	9(26.5%)	4(19%)	11	20%	0.529
Raised Alanine Transaminase	8(23.5%)	4(19%)	12	21.8%	0.342

Table 7: Showing ultrasonography of Abdomen of patients

Signs		Amoebic	Pyogenic	Total	Percentage	P value
Site of Abscess	Right Lobe of Liver	30(88%)	16(76%)	46	84%	0.171
	Left lobe	0	2(9%)	2	3.3%	
	Both lobe	4(12%)	3(15%)	7	12.7%	

Table 8: Showing ultrasonography of Abdomen.

		TYPE OF ABSCESS		Total	P value
		Amoebic Liver Abscess	Pyogenic Liver Abscess		
SINGLE / MULTIPLE	Single Abscess	25	10	35	**0.05**
		74%	48%	64.0%	
	Multiple Abscess	9	11	20	
		26%	52%	36.0%	
Total		34	21	55	Chi square
		100.0%	100.%	100.0%	3.76

Table 9: Showing various modalities of treatment.

	GROUP 'A' ABCESS SIZE <5CM(<150CC)		GROUP 'B' ABCESS SIZE >=5CM(>150CC)			TOTAL
	Medical Management	USG guided aspiration	USG guided pig tail catheter drainage	USG guided pig tail catheter drainage+ Aspiration	Surgical Exploration	
Study Subjects	9	9	31	4	2	55

Table 10: Showing reduction in volume of abscess cavity.

			Treatment modalities					Total
			ASPIRATION	CONSERVATIVE	PIGTAIL	PIGTAIL +ASPIRATION	SURGICAL	
Reduction in Volume on USG	NO	Count	3	7	9	1	2	22
		% within T/t	33.3%	77.8%	29.0%	25.0%	100.0%	40.0%
	YES	Count	6	2	22	3	0	33
		% within T/t	66.7%	22.2%	71.0%	75.0%	0.0%	60.0%
Total		Count	9	9	31	4	2	55
		% within T/t	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Chi Square=10.44 p=0.034

Table 11: Percutaneous pigtail catheter drainage.

Name of study	Sukhjeet Singh et al	Our study
Volume of the largest cavity (c.c.)	98-770 (302±122)	331.87cc 48cc – 840cc)
Hospital stay (days)	13.36 (5days –21days)	6-24 (11.3±3.8) days
Number of days of pigtail	10.4±3.7	8.52+_3.07
Time for 50% reduction in cavity size (days)	3-9 4.9±1.6	9-16 10.3+_3.4
Success	100%	100%

The mean age of presentation was 45.56 years. The youngest patient was of the age 22 years and the oldest was of 75years. . [Table -1]

Gender Distribution-There were 43 males (78.18%) and 12 females (21.81%) enrolled in the present study with 34 patients in Amoebic liver Abscess 21 in Pyogenic liver Abscess .The overall male to female ratio of 3.6 :1.The male :female ratio in Amoebic group is 2.4:1 and in pyogenic group it is 9.5:1. [Table -2]

Clinical manifestations- [Table 3]

All 55 (100%) patients presented with pain in abdomen. Fever is the next common symptom, about 94% of study population had fever at the time of presentation. Chills and Rigors At the time of presentation- 60% of the study population had chills and rigors in Amoebic liver abscess and 55% had chills and rigors in Pyogenic liver Abscess, the percentage of patients with chills and rigors was more in Pyogenic group. History of vomiting was found in 69.9% (n=58) of the cases, in Amoebic liver abscess 59% and in pyogenic liver abscess 76% had vomiting. About 45% of study population had jaundice. Amoebic liver abscess 47%, the prevalence of jaundice was more as compared to Pyogenic group 42.85%. Cough was present in 27% of study subjects [Table 4]. Addiction –In the present series, 60% of patients were Alcoholics. 55.88% were alcoholic in Amoebic liver Abscess and 66.66% in Pyogenic liver abscess , Comorbidity -The overall prevalence of Diabetes in study population was 32.72%.In Amoebic liver abscess 38.23% patients were Diabetic and in Pyogenic group, about 23.8% had Diabetes,. Tuberculosis was found in 17.64% of the study population, in Amoebic group 11.8% had tuberculosis and in pyogenic group it was 9.5%. On per abdomen examination lump was found to be present in 34% of the cases (n=19). However lump was present in 35.29% of the Amoebic group, and 33.33% of Pyogenic group. Hepatomegaly was found to be present in 74% of the cases (n=41). However Hepatomegaly was present in 67.64 % of Amoebic group and 85.71% of Pyogenic Liver Abscess, more number of patients in Pyogenic group had palpable liver as compared to Amoebic group. About 69% of study population had inter costal tenderness .In Amoebic liver Abscess more number of patients 70.58% had tenderness as compared to Pyogenic group where it was 66.66%. Study population who had inter costal tenderness was 69% . [Table 5]. In Amoebic liver Abscess more number of patients 70.58% had tenderness as compared to Pyogenic group where it was 66.66. On examination of chest there was decreased air entry on Right side in about 40% of the subjects, in Amoebic liver abscess there were 47% of patient as compared to Pyogenic group where there were 28.57% with decreased air entry on Right side. In the present study, 38.18 % (n= 21) of the cases had counts less than 11000 while 61.181% (n= 34) had counts more than 11000. In the present study, about 44% of patients had raised Bilirubin, Overall 49% of study population had raised Alkaline Phosphatase levels , About 20% of the study population had raised Aspartate Transaminase with mean value of 75.59 U/L. Alanine Transaminase was raised in 21%of study subjects with mean value of 88.02 U/L. [Table 6].

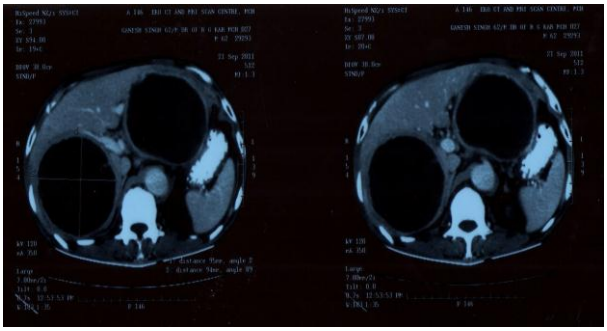
Ultrasonography is simple, inexpensive, and quick to perform; with a diagnostic accuracy of 90%.Abscesses located peripherally in contact with the liver capsule and varies from 2 to 21 cm in size (mean 7.75 cm).USG is very important in therapeutic intervention for guided aspiration and pigtail insertion. It is also of great use in follow up of patients who had liver abscess. Especially in the acute situation, a computed tomography (CT) scan does not add to the diagnostic accuracy of ultrasound except in the evaluation of imminent rupture of abscess. In an atypical or chronic case, CT may be of value; it shows better rim enhancement with contrast enhancement in pyogenic liver abscess and high density of the contents in necrotic liver tumours. About 30% of patients had Right sided pleural effusion, 18% had bilateral pleural effusion. In our study maximum number of the patients (84%) had right lobe involvement, right lobe involvement was maximum in Amoebic (88%) as compared to Pyogenic group (76%) ,both lobe involvement more common in pyogenic liver abscess (15%) as compared to Amoebic (12%), there was no left lobe involvement in Amoebic Abscess. In our study it was found that multiple liver Abscesses came out to be pyogenic liver abscess (52%) where there is a single Abscess cavity, it came out to be Amoebic liver abscess (74%). The P value is 0.05 is significant. single abscess cavity is in close association with Amoebic liver abscess. [Table -6]. Out of 55 patients, those with abscess larger than 5cm, guided drainage was done, 9 patients were treated conservatively on Medical line of management, 9 patients underwent Aspiration under USG guidance 31 patients underwent pigtail catheterization and in 6 patients with multiple abscess combine Pigtail catheter as well as Aspiration was done . [TABLE 7] Out of 55 patients 9 patients underwent USG guided Aspiration 31 patients Pigtail catheterization was done and in 6 patients combined approach was made. Pus culture of aspirated fluid 66.66% of pyogenic abscess showed growth, none of the amoebic abscess showed growth on culture medium, the P(<0.001) value is significant the aspirated fluid from Amoebic liver Abscess is sterile On Gram staining of the aspirated fluid, 14 patients were positive in pyogenic group and maximum were Gram negative bacilli, no organism was seen in amoebic liver abscess .The result suggest that Amoebic liver Abscess are sterile and none of our patients had secondary bacterial infection. Out of 44 patient within which pus was aspirated, 14 patients showed growth of organism and all 14 patients belonged to Pyogenic liver abscess group Most commonly found organism on pus culture sensitivity was Staphylococcus (43%) followed by E coli and Pseudomonas(22%). Out 55,9 patients were managed conservatively, blood culture was sent to know the causative organism and some of the cases of

Pyogenic abscess showing no growth on pus culture, blood culture was sent out of 13, and 10 were positive, for staphylococcus (39%) followed by Klebsiella and E coli and pseudomonas (22%). [Table 8] Decrease in volume of abscess cavity on USG is maximum in Pigtail aspiration and Pigtail groups with a significant P value it was followed by aspiration and then by conservative treatment. Relief of symptoms on day 3, no significant relief was found in either of the groups. Symptomatic relief was maximum in Aspiration group followed by Pigtail and then by conservative group. About 90% of the patients had symptomatic relief on 7th day in Aspiration +Pigtail group followed by Pigtail group and 11% of aspiration and conservative were having no relief even on day 7. [Table -9] About 16.4% patients had recurrence, in Conservative management followed by Aspiration (44.44%), no recurrence was found in Pigtail Catheter drainage. There is negligible recurrence if pigtail catheterization is done in a cavity more than 5 cm in diameter.[Table 10]

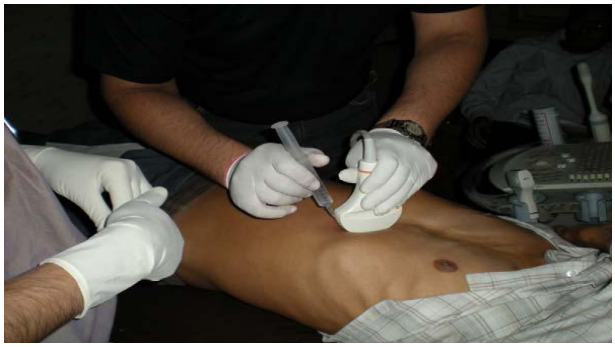
Readmission was maximum in conservative group followed by aspiration, no readmission were noted in pigtail and Pigtail + Aspirations. states that pigtail catheterization is a better modality of treatment.

The outcome of various line of management were tabulated and compared in terms of reduction in volume of abscess after particular treatment, days of hospital stay, number of aspirations number of days of pigtail and volume of abscess cavity on third day . Maximum reduction in volume of the abscess cavity after intervention was found in Pigtail Catheter group as compared to others .The Hospital stay was maximum in Pigtail Cather group as compared to others with a significant P value. Number of aspirations were maximum in aspiration compared to aspiration and pigtail combination. Number of days of pigtail catheter drainage were more in isolated pigtail as compared to combination of pigtail and pigtail +aspiration. Volume of the abscess cavity was minimum in aspiration group as compared to others. [Table 11]

Ultrasonography of abdomen showing liver abscess of right lobe of liver.



CT Scan Showing two Liver Abscesses



USG guided percutaneous needle Aspiration

Percutaneous Needle Aspiration

Pigtail Catheter Drainage

Classical Amoebic Liver Abscess

DISCUSSION

The present study includes 55 patients, and as Many as two recent studies, show that the common age group is between 30-50 years.[9 ,10] The mean age of presentation was 45.56 years. The youngest patient was of the age 22 years and the oldest was of 75years. Reports in the literature shows that there is a male preponderance in a ratio ranging from 10:1 to 17:1[10 11]A retrospective analysis in 1978 by Kapoor et al. reported that the male: female ratio was 5.66:1, which had remained constant.[11] In our study, the overall male to female ratio of 4:1.The male :female ratio in Amoebic group is 3:1 and in pyogenic group it is 10:1.Study carried out in (2004) Karachi, showed that 48% of pyogenic hepatic abscesses, 67% of patients with amoebic liver abscess got fever.[12]Majority of our study population was suffering from fever (94.55%) at the time of presentation and 60% of the study subjects got associated chill and rigor. Incidence of pain in abdomen in recent report varied up to 88.6%.[13] But from India Kapoor et al showed 75% patients presented with abdominal pain.[14] Our study result simulates the result of this study 100% of the patient in Amoebic and 100% of pyogenic had abdominal pain (Right hypochondriac). A larger Indian study carried out in 2005 showed 31.94% patients got jaundice.[15] In our study 45% of population had jaundice. Amoebic liver abscess, 47% patients had jaundice, the prevalence of jaundice was more as compared to Pyogenic group -42.85%. When Comorbidity was studied in our series -The overall prevalence of Diabetes in study population was 32.72%. In Amoebic liver abscess 38.23% patients were Diabetic and in Pyogenic about 23.8% had Diabetes, Mathur et al, in 2002, found that about 21% cases were diabetic.[10,16] Tuberculosis was found in 17.64% of the study population, in Amoebic group- 11.8% had tuberculosis and in pyogenic it was 9.5% had tuberculosis. Our study showed that most of the cases (61.81%) had leucocyte count ranging from 11800 to 34500 cells/mm^3 with mean value of 11, 500. Earlier studies had reported the mean TLC to be 15000cells/mm^3 with the range 7500cells/mm^3 to 25000cells/mm.[17] 2006 reports, found E coli to be most frequent organisms found. Study by Michael D' Angelica et al they found E coli followed by klebsiella as most frequent organism.[18,19,20,21,22] In our study the most common organism found was Staphylococcus aureus. In our study blood culture was positive in 10 cases (47.61%) and Staphylococcus was found to be most frequent in 39% of PLA. Earlier studies Wood TF, Rose had reported right lobe abscesses in 55% cases of liver abscesses, multiple abscesses were 27.7% and isolated left lobe abscesses 16.6% and 28.4% of both lobe abscess.[23,24,25] In our study subjects (64%) had solitary liver abscess (74% of ALA and 84% of PLA) and 84% of our patients had their right lobe involved(88% of ALA and 76% of PLA)

The study carried out by C L Rajak showed that 67% patients had amoebic subtype.[26] In our study 61.81%% of patients were found to have amoebic liver abscess and 38.18% of patients were found to have pyogenic liver abscess . So our result corroborates with their result that amoebic liver abscess is more prevalent than pyogenic liver abscess. In our study 60% of the subjects attained ≥50% reduction in abscess cavity size following therapy. Percutaneous pigtail catheter drainage was successful in terms of ≥50% reduction in abscess cavity size in 70% patients as compared to percutaneous needle aspiration which was successful in 66.66% patients and in combination of both the treatment pigtail and aspiration it was 75%.

Our study revealed that PCD was more successful in terms of recurrence of abscess, relief of symptoms and decrease in size of abscess cavity. 22.22% patients who underwent PCD required readmission in hospital as compared to PNA. About 41.4% patient of PCD had their symptoms relieved within three days, however in USG, PNA also shows 44.4%-almost equivalent result. Hospital stay of more than a week was 100% in PNA as compared to PCD which is 83% in our study corroborates with the result of the study performed by Agrawal et al where they reported that clinical relief attained in PCD group was in shorter duration than in PNA where it took a longer time.[27,28,29]

The major advantages of PNA over PCD are: 1) it is less invasive and less expensive; 2) avoids problems related to catheter care; and 3) multiple abscess cavities can be aspirated easier in the same setting.[30,31] However, in our study we had a success rate of PNA, which was significantly lower than with catheter drainage (71% versus 100%, P <0.005). There are some problems with catheter drainage like nuisance to the patient, pain, cellulites at the insertion site and sometimes catheter dislodgement. The success rate of PNA in the literature varies from 79-100%.[31] Another important reason for failure of needle aspiration is the inability to completely evacuate the thick viscous pus that may be present in some of the abscesses. Rapid re-accumulation of pus in the abscess is another reason described for failure of needle aspiration. Placement of an indwelling drainage catheter addresses, all three of these issues as it provides continuous drainage, drains thick pus because of wider caliber catheter, and prevents re-accumulation. This explains the higher success rates (71%) observed in our study and several previous studies.[32] The only reasons for failure of PCD as reported in some of the earlier series have been either thick pus not amenable to percutaneous drainage (this can be overcome by placement of a wider bore catheter) or premature removal of drainage catheter.[32] No recurrence occurred in any of our cases during the follow up period. However, both treatment modalities resulted in rapid clinical relief with most patients showing resolution of signs and symptoms within the first 3 days of the procedure.

CONCLUSIONS

Our study includes 55 cases of liver abscess following are the conclusions of our study. The most common age group affected by Liver abscess was third and fifth decade of life. Males are more commonly affected than females. Ultrasonography is the standard modality for Diagnosis as well as therapeutic drainage of abscess and also follow up. We found that the incidence of amoebic liver abscess was more as compared to pyogenic liver abscess. Pyogenic liver Abscess most common pathogen was Staphylococcus followed by klebsiella. There is increasing association of diabetes with both types of abscess. Image guided drainage is the best modality of treatment for liver abscess. In case of larger abscess (>5cm) or 150cc,Ultrasound guided percutaneous pigtail catheter drainage is a superior therapeutic approach than percutaneous needle aspiration if, there are multiple abscess cavity the larger abscess cavity should be drained by pigtail catheter and smaller ones should be aspirated. Patients treated with ultrasound guided percutaneous catheter drainage improved rapidly than those treated with needle aspiration. Abscess cavity resolves better in case of catheter drainage than needle aspiration. Pigtail is better than aspiration group as compared to recurrence and readmission but the hospital stay of Pigtail is longer.

Foot Notes:-
Sponsorship- No funding from any source.
Conflict of Interest – Nil
Permission from Ethical committee obtained.
Written informed consent obtained from all study population.

Abbreviations

USG- Ultrasonography, CT- Computed Tomogram, PLA- Pyogenic Liver Abscess, ALA- Amoebic Liver Abscess. PNA- Percutaneous needle aspiration, PCD- Pigtail Catheter Drainage,

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