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Percutaneous As Piration Versuspigtail Catheterd Rain Age In Management Of Liver Abscess

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I. INTRODUCTION

Liver abscess is a common disease in the differential diagnosis of upper abdominal and right lower respiratory tract diseases. Even with the advent of good diagnostic investigation like USG, the diagnosisisstill delayedbecause of thenonspecific manifestations of disease. The traditional therapy of intra-abdominal liver abscess has been operative drainage as originally described by Volkmann in 1879. The reduction in mortality from 90% at the turn of century to the estimated 10-20% today cannot be ascribed to surgery alone.

Patient Inclusion Criteria:
Including all patients at GK General hospital under the given study. Age 8- 70 years.
Single and approachable abscessonbasisof ultrasonography.
Abscess>5cmon USG.
Patientswhowereready for percutaneousaspiration and pigtail catheter drainage
During the last few year, the radiological techniques namely computed tomography (CT) and ultrasonography (USG) has helped in localization of these abscessand their safeaspiration and drainage. Currently, there are 2 alternative methodsfor drainageof pus from a large liver abscess. This study aims to compare the therapeutic effectiveness and safety of 'Percutaneous continuous catheter drainage' versus 'Percutaneous intermittent needle aspiration' in the percutaneous group of treatments for liver abscesses.

Exclusion Criteria:
Patient'sage <8yearsand >70 years. Multiple abscess.
Abscess size <5cm on USG which were managed conservatively.
Abscesses that were amenable to only surgical drainage (SD), like rupture or concomitant surgical pathology requiring urgent surgical exploration

Method & Materials:

Study design
Inthepresent prospective comparative study, 30 patientswere selected fromL.G. HOSPITAL, Ahmedabad. Study was conducted during theperiodfromJULY 2018toJANUARY2019.

Atotal of 30 patientswithliver abscesswere enrolled and randomized intotwogroups.
All patientshad USGdone at thetimeofadmission
All patientsweregiven Inj. Ceftriaxone 1gmIV12 hourly, Inj. Amikacin 500mg IV 12 hourly, Inj. Metronidazole 400mg IV8 hourly and Inj. Vitamin K.

Twogroups:
Group A (total patients: 15) treated withantibiotic drugs with USGguided needle aspiration ontheday of admission.
Group B (total patients: 15) treated withantibiotic drugs with pigtail insertion.
Patientswereexamined daily for body temperature, painand tenderness,
Laboratory andradiological workupwasdoneasand when required.
Cure wasdefined asimprovement clinically with subsidence of fever, and local signs, symptoms, decrease in WBC count and if follow-up ultrasonography showed reduction andnoevidence of relapses.

Data Collection & Evaluation:
Patient datawascollected from indoor casepapers.
The patientswereevaluatedandfollowedupaccordingtothe protocol.
Detailed history ofpatient.
CompleteBlood Count, random blood sugar, LFT, RFT, Prothrombintimeand Chest X-rayweredoneimmediately on presentation.
Preliminary Ultrasound of Abdomen and Pelvis

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was doneonthe samedayof presentation.
Follow-upUSG doneinall patientsonday 3, 7, 21 &thenas& whenrequiredafterwards.
Completeblood count wasrepeatedafter 48hours in all patients. LFT,
PTwererepeatedafter 48hoursincasesofabnormal preliminary reports.
Patient was informed about any interventionrequired and consent taken.

Patient data collected regarding:
Age, gender, complaints, past-surgical history, past historyof liver abscess, history of alcoholism, diabetes, any immunodeficiency states, anyhistoryof biliary tract disorder history ofamoebic dysentery&jaundicewastaken. Patients wereexaminedindetail. Bloodand radiological investigations performedwererecorded.

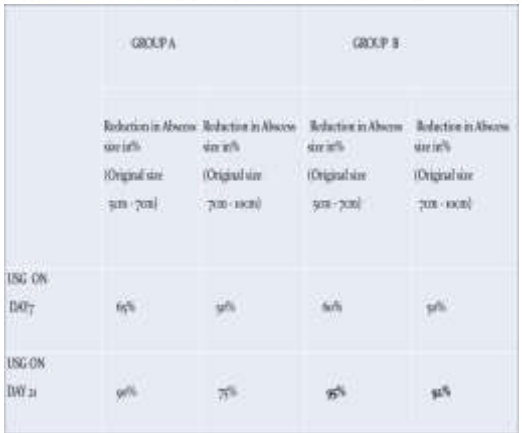
Follow-up:
Patientswerefollowedupforaminimumperiod of 6 months: Onceaweekforonemonth
Monthlyforfirst 3months
Once after 3months, forrecurrent attacks.

Figure(a)

Figure(b)

Fig: (a) and(b) ShowingUSGguided percutaneous aspiration(creamy whitepus) of Pyogenic Liver Abscessfromright lobe of liver.

Showing USG guided percutaneous aspiration (Anchovy sauce pus) from9th intercostals space between anterior and posterior axillary lines (Right lobe Amebic liver abscess)



Pigtail Catheter Drainage instrumentswith guide-wire, introducer and connector

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II. RESULT:

Total 30 patientsof liver abscesswereincluded inthe study. Patients randomised intotwogroups: group A (total no patients15) treated withantibiotic plus USG guided aspiration & group B(total nopatients15) treated with antibiotic with pigtail catheter insertion. Followup after initiation of therapy revealed normalization of body temperature inall patients within 6 daysinbothgroups. Likewise, abdominal pain disappeared in95% of patients within5 days. Liver tenderness disappeared in100 percent patientsinbothcases. Subsequently all patients werefreeof fever, painand tendernessonday 7.
Likewise, thelaboratory parametersimproved inall patientsby 7thday. Byday 21, USGshowed decreased sizeof abscesscavity inall patients. But residual cavity sizewasreduced moreingroup B; especially withoriginal abscesscavity sizeof 7 cm. ormore. Comparisonbetween bothgroups for reduction in sizeof abscess on day 7 & day 21 is shown in tablebelow.

	GROUP A		GROUP B	
	Reduction in Abscess size in% (Original size 5cm - 7cm)	Reduction in Abscess size in% (Original size 7cm - 10cm)	Reduction in Abscess size in% (Original size 5cm - 7cm)	Reduction in Abscess size in% (Original size 7cm - 10cm)
USG ON DAY7	65%	50%	60%	50%
USG ON DAY 21	90%	75%	95%	92%

III. OBSERVATION & DISCUSSION:

AGE GROUP	NO. OF PATIENTS	PERCENTAGE
<20	3	10
21-30	5	16.66
31-40	6	20
41-50	11	36.66
51-60	4	13.33
61-70	1	3.33
total	30	100

Thepresent study showshigher incidence of liver abscessin males 27 patients (90%) than 3 females(10%) witha male:female ratio of 9:1.

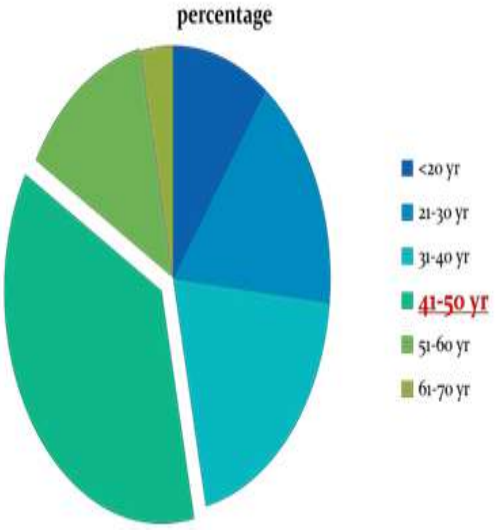

Fig: Showing 150 cc of Anchovysauce collection in theurobag draining the Liver Abscess

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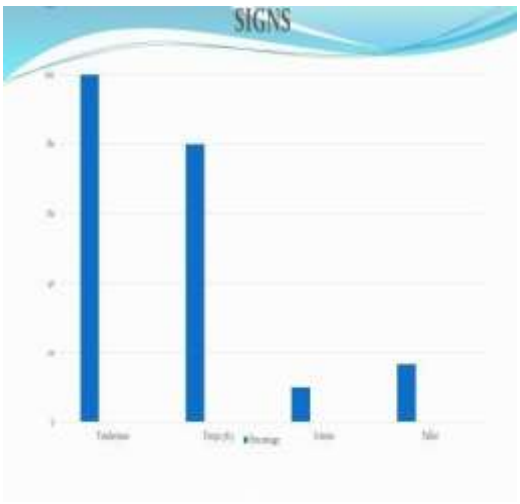
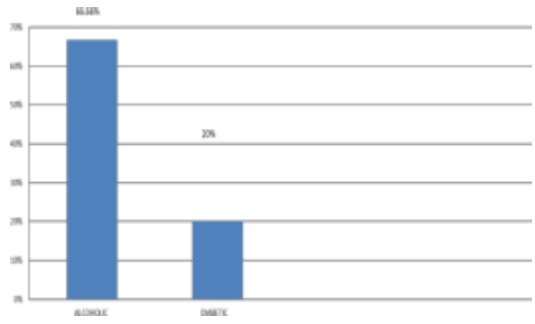


Associated Factors:
Thepresent study showshigher incidence of liver abscessin males 27 patients (90%) than 3 females(10%) witha male:female ratio of 9:1.

SYMPTOMS
100.00%
90.00%
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%

Percentage



Blood Investigations:
Anemia (Hb<10 gm/dl) wasfoundin13.33% of thecases. The Hb% of thepatientsranged from6.4 - 15.1 gm%.
Leucocytosis (> 10,000c/mm^3) wasfoundin 80% of cases Hyperbilirubinemia withserum bilirubin > 1.5 mg/dl was foundin36% of thecasesinthisstudy.
The liver functiontest whichwasmost consistently raised was alkaline phosphatase. Alkaline phosphatase wasfound toberaised in68% of casesinthisstudy.
Elevated prothrombin time wasseenin48% of cases.
Chest X-RAY Findings:

Findings	No. of patients	%
Normal	18	72
Abnormal	7	28
Right Pleural Effusion	4	16
Bilateral Pleural Effusion	3	12

On Ultrasonography, thesizeof liver abscessonpresentation ranged from100cc to360 cc.
USGwasdoneontheday of admission andthenrepeated on day 3, 7, 21.
Volume of the abscess was calculated after measuring the abscess cavity in threedimensionsandapplying the formula usedby Rajaket al[1] intheir study.
Volume =0.523*A*B*Cwhere A,B and Carethreedimensions.

IV. CONCLUSION:

Image basedpercutaneoustreatment (aspiration or catheter drainage) hasreplaced surgical intervention astheprocedure of choice.
If performed carefully, boththe proceduresare safewith minimal complications.
Percutaneous catheter drainage isabetter modality as compared topercutaneousneedle aspiration.
Eachrepeated aspiration improved thesuccessof treatment by percutaneous needle aspiration.
Significantly earlier clinical improvement andlesstimefor 50% reduction inabscesscavity inthepercutaneouscatheter drainage group.
The chancesof failure ofpercutaneousneedle aspiration Increased with theincrease insizeof abscesscavity tobe aspirated (p=0.011)
Hospital stay was reduced in drainage by pigtail catheter as the resolution of cavity wasearlier and quicker compared to repeated aspirations.

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