

Original Research Paper

**PIGTAIL CATHETER VS PERCUTANEOUS NEEDLE
ASPIRATION IN PEDIATRIC LIVER ABSCESS**Authors: ¹Dr. Deepak J Vora , ²Dr Sanket H Katara , ³Dr Lakir A Patel , ⁴Dr Harsh J Pandya ,⁵Dr Vivek S Vaidya^{1,2,3,4,5}Shardaben hospital, NHLMMC , Ahmedabad

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Article Received: 22-07-2022

Revised: 12-08-2022

Accepted: 02-09-2022

INTRODUCTION

Liver Abscess is an Important yet relatively uncommon Disease in Children with Varied incidence and prevalence world wide. The Demographics and clinical features of liver abscess may differ among regions a liver abscess is a pus-filled cavity that takes place due to the incursion of microorganisms both from hematogenous or by using way of the biliary ductal system. The frequent etiology of a liver abscess consists of amoebic or pyogenic and every so often combined infections. In the developed world, a polymicrobial pyogenic abscess is frequent whilst amoebic etiology is extra frequent in tropical countries. Despite the enhancement in sanitation and the development of remedy modalities, amoebic and pyogenic liver abscesses are regarded an essential purpose of morbidity or mortality in the tropical and subtropical areas of the world. Our Study Analyzed the clinical presentation, Diagnostic approach , types of pathogens, treatment strategy and outcome of pediatric liver abscess comparing percutaneous needle aspiration and pigtail catheterization.

METHODOLOGY AND OBJECTIVES

This was a retrospective analytical study performed at Shardaben Hospital in AHMEDABAD . The study duration was July 2019 to October 2021 . A total of 41 patients with a confirmed diagnosis of liver abscess were taken from the computerized patient management system of our institute. Patients admitted with medical elements and ultrasound stomach findings regular with liver abscess had been protected in the study. Patients with age < 12 years have been with USG verified liver abscess had been protected in study. Data related to medical features, feasible threat factors, comorbidities, laboratory investigations, therapy strategies, and effects

had been amassed in predesigned proforma. Patients with effective Entamoeba histolytica serology and/or high-quality stool microscopy for amoebic trophozoites and cysts are viewed as of amoebic etiology. Positive pus tradition and/or blood way of life for microorganism used to be regarded as of pyogenic origin. Mixed etiology (amoebic and pyogenic) was once viewed if each had been positive.

STUDY DESIGN AND ANALYSIS

All sufferers had been began on empirical intravenous ceftriaxone and metronidazole all through hospitalization. Antibiotics have been modified in accordance to way of life sensitivity and if there used to be no response to preliminary therapy. Patients have been allotted into three companies based totally on remedy modalities for similarly analysis. Group A consisted of sufferers who obtained conservative administration in the structure of intravenous antibiotics only, Group B protected sufferers who underwent percutaneous needle aspiration (PNA), Group C covered these who underwent pigtail catheter drainage (PCD). All sufferers had been discharged with recovery, so the period of sanatorium remain in days was once taken for result analysis.

Statistical analysis

Data had been analyzed by using the use of SPSS model 20 (IBM Corp., Armonk, NY). Continuous variables had been represented as imply (\pm fashionable deviation); numbers and percentages have been used for specific variables. The evaluation of variance (ANOVA) take a look at used to be used to locate the statistical importance of non-stop variables between groups. Pearson's coefficient correlation and a couple of logistic regression had been used to discover an affiliation between variables.

RESULTS

Total patients (n=41)	Parameters	Number (Percentage)
Gender	Male child	31
	Female child	10
Risk Factors	IODM	6
Etiology	Amoebic	24
	Pyogenic	14
	Mixed	3
Symptoms	Pain abdomen	38
	Fever	35
	Anorexia	30
	Nausea/vomiting	26
	Weight loss	26
Signs	Pallor	5
	Icterus	5
	Ascites	8
	Pleural effusion	19

A total of 41 patients with a liver abscess were analyzed. The mean age of the study population was 5 ± 1.3 years with male predominance (93.75%). Pain in the abdomen was the most common presenting complaint (84%), followed by fever (78%). Right hypochondrium tenderness was the most common finding on per-abdominal examination. The proper lobe abscess used to be predominant (82.5%), observed by using bi-lobar involvement (9.4%). Multiple liver abscesses had been determined in 12% of patients. Etiology ought to be ascertained in fifty seven (89%) sufferers (78% amoebic, 6.3% pyogenic, and 4.7% combined amoebic and pyogenic) whilst it was once no longer evident in seven (11%) patients, with the aid of amoebic serology, or by using pus culture. All sufferers obtained antibiotic

therapy. 19 sufferers have been handled with PNA, and eight sufferers underwent pigtail drainage; the selection of the want for intervention was once made via the treating team, along with the clinician and interventional radiologist. Demographic, laboratory, and administration statistics had been analyzed amongst three remedy companies (. Mean abscess quantity in Group C (110 ± 52.2 ml) used to be drastically greater when in contrast to Group A (30 ± 8.2 ml; $p=0.03$) and Group B (70.2 ± 18.6 ; $p=0.024$), whilst there was once no sizable distinction between Group A and Group B ($p=0.27$). The length of clinic continue to be and residual extent at the time of discharge did no longer vary considerably between therapy groups

Variables (Mean±SD)	Total (n=41)	Group A (n=14)	Group B (n=19)	Group C (n=8)	P value
Age (Years)	5+_ 1.3				
Duration of Hospital Stay(Days)	17.8±10.6	14.4±13.7	16.7±8.4	19.8 ± 9.3	0.23
Hb (gm%)	11.7 ± 2.0	13.0±2.0	11.8±1.6	11.0±1.8	0.003
TLC	14133±6197	14036±6309	11267±6072	15275±6006	0.14
ESR	77.6±27.9	74.6±26.5	68.4±24.7	83.1±29.4	0.25
AST	59.1±49.6	35.4±18.1	56.2±42.9	71.4±59.2	0.13
ALT	51.1±41	39.1±34.4	62.1±46.1	52.6±41.5	0.31
Abscess Volume on day of admission	68	30.±8.2	70.2±18.6	110.2±52.2	0.001
Duration of Metronidazole	23.1±8	20.4±6.3	23.4±7.5	24.3±8.7	0.29

The association between the duration of hospital stay and treatment strategies was further analyzed according to liver abscess volume at the time of hospitalization . This showed that PCD in abscess volume <70ML was associated with a statistically significant increase in the duration of hospital stay (p = 0.012). However, PCD between an abscess volume of 70-300 ml was not

associated with an increase in the duration of hospital stay. The involvement of the right lobe and amoebic etiology were found comparable in all three groups . The duration of hospital stay was positively correlated with the duration of fever (r = 0.28, p = 0.028) and total leucocyte count at the time of hospitalization (r = 0.35, p = 0.003)

DISTRIBUTION

Variables	Group A (n=14)	Group B (n=19)	Group C (n=8)	P-value
Amoebic Etiology	13	12	8	0.19
Right Lobe Involvement	12 (70%)	10 (83%)	7	0.65

DISCUSSIONS AND CONCLUSIONS

A liver abscess is an necessary fitness difficulty in tropical countries. The frequent etiology of liver abscesses are *E. histolytica* (amoebic), bacterial (pyogenic), and *Mycobacterium tuberculosis*. An amoebic liver abscess is extra frequent in tropical nations and their incidence is >50 million instances and 1,00,000 deaths per 12 months. The involvement of the proper lobe used to be predominant (82.5%) in this study, which used to be like preceding research. Etiology ought to be ascertained in 89% of cases, of which 78% have been of amoebic etiology. The disorder is extra frequent in the youthful population, so advantageous remedy is required for a reduce in morbidity and mortality in the productive age group. Common providing complaints of liver abscess are stomach pain, fever, loss of appetite, and weight loss. With the huge availability of ultrasound, the analysis of liver abscess will become simpler however fantastic remedy with really appropriate resolution of antimicrobial and early supply manage is nonetheless an vicinity of debate. With the introduction of interventional radiology, percutaneous cure in the structure of both PNA or PCD is desired in the administration of liver abscesses. The suggest cavity extent used to be considerably greater in Group C (PCD group) when in contrast to Groups A and B in the existing study. Despite this, Group C had a same length of sanatorium remain and length of antibiotic therapy. Few essential randomized manage trials have been performed to examine the efficacy between PCD and PNA with variable results. Among them, three trials confirmed PCD as the desired approach for abscess drainage, and it is greater high-quality if cavity dimension is > 9 cm. Yu et al. concluded that there was once no full-size distinction in the health center remain and medical results when in contrast PCD vs PNA in abscess cavity dimension of round 5 cms. However, Zerem and Hadzic et al. concluded that PNA was once

the desired approach if the cavity dimension is smaller than 5 cm. A metanalysis by using Cai YL et al. additionally preferred PCD as a desired approach of administration and pronounced a decrease success fee with PNA. The success price of PNA is regarded low due to the want for more than one tries at aspiration in large cavity dimension abscesses and the hazard of re-accumulation. We additionally analyzed the impact of abscess quantity and therapy techniques on the period of health facility stay. PCD used to be located to be an high-quality preference of abscess drainage if the quantity was once >110ML. However, it was once related with greater period of health facility continue to be if used in abscess volumes <70 ml.

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