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Original Research Paper

Surgery

CLINICAL PROFILE AND PIGTAIL CATHETER DRAINAGE OF LIVER ABSCESSES IN A TERTIARY CARE CENTRE IN NORTHERN INDIA –A PROSPECTIVE STUDY

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ABSTRACT

Background The aim of this study was to evaluate the clinical presentation,and to investigate the effectiveness of percutaneous catheter drainage in the treatment of liver abscesses.

Methods This is a prospective randomized study of 30 patients, presented in outpatient and emergency department at the hospital in whom pigtail catheter drainage was carried out under sonological guidance. The effectiveness of this treatment was measured in terms of duration of hospital stay, days to achieve clinical improvement, significant reduction in abscess cavity size and total resolution of abscess cavity.

Results The procedure was done in 30 patients in a time period of one year from june 2017 to junly 2018 .out of 30 patients there were 24 males and 6 females . The patients in whom pigtail catheter drainage was done showed earlier clinical improvement ,less morbidity and significant decrease in abscess cavity volume .

Conclusion Percutaneous catheter drainage is one of the best modality of treatment especially in larger liver abscesses which are partially liquefied or with thick pus.

KEYWORDS : Liver abscess,catheter drainage,percutaneous

INTRODUCTION:

Liver abscesses are most commonly due to amebic, pyogenic, ,mixed and rarely fungal in origin. Liver abscess is found more commonly in males between 20 and 50 years of age. Approximately 60-70% are solitary ,mostly located in the right lobe of the liver. Patients usually present with a constant dull pain in the right upper quadrant of the abdomen and pyrexia.Liver abscesses continue to be an important cause of morbidity and mortality in tropical countries. However, recent advances in interventional radiology, intensive care, progress in antibiotic therapy, and liberal use of ultrasonography and CT scanning of the abdomen have led to early diagnosis and treatment of patients with liver abscess, thus improving the patient outcome. Percutaneous drainage of liver abscess has been an important advancement in the treatment of pyogenic liver abscesses. Operative drainage is associated with significant (10-47%) morbidity and mortality(1). Patients with diabetes mellitus, immune deficiency, sickle cell anemia, malignancy, and liver transplants are at a greater risk for developing liver abscess (2).

Methods: A detailed history, clinical examination, and laboratory profile of the patients were recorded on a predesigned Proforma. All patients were subjected to complete hemogram,liver function test, kidney function test, and coagulation profile (PT/INR). Reference ranges of these investigations were defined by the reference ranges of our hospital laboratory.

Serologies for Entamoeba histolytica, HIV, and hepatitis B and hepatitis C viruses were also done. All patients were subjected to chest radiogram ,ultrasound whole abdomen and CT scan of abdomen. Patients with symptoms of cough with expectoration were subjected to sputum for acid fast bacilli (AFB) using ZN staining to rule out pulmonary tuberculosis. After taking written informed consent, all patients were subjected to ultrasonographic guided aspiration of liver abscess by pigtail catheter of suitable size and available in our hospital.We preferred pigtail catheter in single, large (>10 cm), deep seated, and partially liquefied abscess. Aspirate was collected in sterile containers and sent immediately to Microbiology Department for microscopic examination of wet mount for trophozoites ofEntamoeba histolytica.

Follow up: patients were followed up in OPD upto 3 months with regular sonography.

Results: A total of 30 patients presenting in emergency department with clinical and radiological evidence of liver abscess were subjected to pig tail catheter drainage and various parameters were studied .

Figure 1. showing pigtail catheter in situ

Table no.1 showing symptomatology of patients having liver abscess

sypmptom	Number of patients	percentage
Pain abdomen	27	90
Fever	23	77
Malaise	23	77
Nausea/vomiting	05	17
Night sweats	11	37
Cough	7	23
Diarrhea	2	7

Most of the patients presented with symptom of pain abdomen,fever and malaise with early fatiguebility .a few patients presented with vomiting ,cough and diarrhea.

Table no. 2 showing distribution of liver abscess in liver lobes

Site	No. of patients	Percentage
Right lobe	24	80
Left lobe	4	13
Both lobes	2	7

Most of the abscesses were located in right lobe of liver , a lesser number had abscess in left lobe and only 2 patients had disease in both lobes.

Table no. 3 showing quantity of pus drained in first 24 hours

Amount of pus (ml)	No. of patients	Percentage (%)
150-200	12	40
201-250	8	28
251-300	5	16
301-400	5	16
Total no. of patients	30	100

Maximum quantity of pus was drained in 12 patients in first 24 hours after drainage . in 10 patients the quantity of pus drained was about 250 to 400 ml in first 24 hours .

Table no. 4 showing microbiology of pus aspirated/drained

Organism	No. of patients	Percentage(%)
No organism	22	74
E coli	6	20
Klebsiella	2	3
Staph aureus	2	3

Regarding microbiology of pus drained most of the pus was found sterile followed by presence of E coli in 6 patients ,Klebsiella in 2 patients and Staph in another 2 patients .

DISCUSSION

The management of liver abscess has got revolutionised with significant reduction in mortality and morbidity after the advent of broad spectrum antibiotics and imaging modalities. Currently, there are two alternative methods for drainage of pus from a large liver abscess.(3). Percutaneous therapeutic procedures have been largely performed compared with open surgical drainage.(4) This paradigm shift has been fuelled by a drive for a low-risk and less invasive procedure. Percutaneous treatment (needle aspiration or catheter drainage) is now a standard management for liver abscesses.(5) It has replaced surgical exploration which have very limited indications nowadays. The problem of failure of this procedure as reported by earlier studies has been due to the thick and viscid pus, which cannot be easily drained by percutaneous drainage or early premature withdrawal of the catheter(6). These problems can be avoided by using adequate sized pigtail catheters depending on the viscosity of pus and following a strict protocol for catheter flushing and removal. One of the major problems is a prolonged duration of the catheter. This led to some authors considering this procedure as slow. Percutaneous catheter drainage is a safe procedure with very few reported complications. Which includes haemorrhage, perforation of hollow viscera, peritoneal spillage, catheter displacement or blockage and septicemia. But recent studies show very low complication rates. Our study did not have any major complication although the incidence of minor complications was 40 % (10 patients). The chief limitation of our study is small number of subject included in study group; also the etiology of abscess was not uniform, patients with amoebic and pyogenic liver abscesses could not be segregated due to the nonavailability of serological tests.

CONCLUSION:

Pigtail catheter drainage by percutaneous route is a safe , effective and technically easy mode of treatment of liver abscesses, both amoebic and pyogenic. The low morbidity and high success rate in treating liver abscesses by this minimally invasive method suggests that this treatment modality should be the first line of management in liquefied moderate to large sized liver abscesses.

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