

Safest Treatment Procedure for Liver Abscess during the Covid Pandemic Year.

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Abstract:

Background: The objectives of this study was to evaluate the advantage of pigtail catheter insertion in liver abscess which reduces the morbidity and covid exposure during the procedure.

Methods: This is a retrospective study conducted in madras medical college and Rajiv Gandhi government general hospital, Chennai between January 2020 and December 2020 . It included 50 patients who are all diagnosed to have Liver abscess. This study was conducted during noble coronavirus pandemic with utmost precautions.

Results: All patients undergone pigtail catheter drainage. None of the patients needed laparotomy. No post procedure complications were noted . Age group varied from 25 to 50 yrs. Out of 50 patients 45 patients were male , 5 patients were female.

Conclusion: The study concludes drainage of liver abscess by pigtail drainage reduced the complications associated with open drainage .

Keywords: pigtail catheter, liver abscess, coronavirus pandemic.

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I. Introduction:

Liver abscess is a collection of pus in the liver. Most commonly right lobe of liver involved. Aetiology being pyogenic, amoebic and very rarely fungal and mycobacterium¹. It may be solitary or multiple involving both lobes of liver. Liver abscess continues to be important causes of morbidity and mortality². Early diagnosis and treatment results in improved outcome with the advent of newer modalities in diagnosis and treatment³. The objectives of the study is to study the efficacy and advantages of drainage of liver abscess cavity by placing a pigtail catheter.

II. Methods:

This is a retrospective study conducted in general surgery department of Rajiv Gandhi government general hospital Chennai under the guidance of professor Dr Maniselvi for a period of 1 year from Jan 2020 to Dec 2020 . All necessary investigations were done (usg/ CECT abdomen), CBC, RFT, LFT, blood grouping and typing, HbsAg, HIV, HCV, PTINR, APT). It was during the period of noble coronavirus pandemic.

50 patients were evaluated . All were started on third generation cephalosporins, inj metronidazole. All were managed by pigtail insertion . 10Fr pigtail was inserted into abscess cavity . After confirming that pus coming from pigtail, it is fixed and connected to Urobag. All cases were done wearing PPE.

Post procedure Pt vitals stable . Pt shifted to ward and monitored for signs of peritonitis. No patients developed any complications post procedure. Regular metrogyl wash given twice daily. Repeat usg abdomen was done after 3 days to look for reduction in size of abscess cavity . Most abscess were resolved in 1 week period which was confirmed with usg and pigtail removed. Patient discharged .

III. Results:

Table 1: Clinical manifestations of liver abscess:

Symptoms	No of patients	Percentage (%)
Right upper quadrant pain	45	90%
Fever	30	60%
Jaundice	10	20%
Abdominal tenderness	38	76%

Nausea /vomitting	8	16%
Rigors and chills	38	76%
Pallor	17	34%
Hepatomegaly	24	48%
Weight loss	14	28%
Pleural effusion	5	10%
Generalised weakness	40	80%
Diarrhoea	4	8%
Dyspnea	2	4%

Describes the symptoms of liver abscess.

Table 2 : Laboratory investigations in liver abscess:

Parameters	Number of patients	Percentage
Total count	47	94%
Total bilirubin	10	20%

This table demonstrates elevated total count(94%) and total bilirubin(20%).

Table 3: Lobe involved

Site	Abscess	Percentage(%)
Right lobe	46	92%
Left lobe	4	8%

It clearly shows right lobe predominance in liver abscess.

Table 4 : Microorganisms isolated in pus aspirated

Organisms	No of patients	Percentage (%)
No growth	35	70%
E.coli	8	16%
Klebsiella pneumonia	5	10%
S.aureus	2	4%

Includes microorganisms isolated in pus. No growth predominates over other categories.

Table 5: complications

Complications	No of patients	Percentage(%)
Pain at the catheter site	40	80%
Displacement of catheter tip	2	4%
Blockage of catheter	6	12%

Table 6: No of COVID patients:

COVID status	No of patients	Percentage (%)
COVID negative	46	92%
COVID suspect	4	8%
COVID positive	0	

IV. Discussion:

Liver abscessis caused by either pyogenic or amoebic organisms.

Pyogenic abscess tend to occur over 50yrs of age ,50% solitary 50% multiple usually located in right lobe of liver .This preponderance of right lobe is probably due to laminar blood flow to the right side. Microbiological analysis of liver abscess tend to be sterile in early series but mostly it tend to be

polymicrobial⁴ with high preponderance of gram negative bacilli. Liver abscess caused by systemic route tend to be due to single organism.

Solitary abscess tend to be polymicrobial. The most common organisms cultured are E. Coli, klebsiella pneumonia. Other organisms are staphylococcus aureus, bacteroides. Fungal and mycobacterial also rarely causes liver abscess but it is associated with immunosuppression.

The classic presentation of liver abscess is fever, jaundice, upper abdominal pain. Rarely patient may present with peritonitis secondary to rupture.

It mainly occurs in tropical countries but may also occur in developed countries.

Ultrasound and CT are the mainstays of diagnostic modalities in liver abscess.

In the past liver abscess were treated with antibiotics and surgical drainage. Nowadays percutaneous drainage has become a treatment of choice for most patients⁵. The obvious advantage being simplicity of treatment and avoidance of general anaesthesia and laparotomy. Pyogenic liver abscess mostly treated by percutaneous aspiration while amoebic liver abscess respond well to metronidazole (750mg orally daily for 10 days) which is curative in 90% patients. Abscess larger than 5cm and left lobe liver abscess are usually aspirated.

Percutaneous catheter drainage is now recommended for intraabdominal collections and abscess cavities⁶.

Healthy patients with liver abscess should undergo usg guided pigtail drainage to minimise hospital stay so as to minimise COVID exposure. Initially patients are managed with iv antibiotics if clinical improvement does not occur with antibiotics, should proceed with pigtail drainage along with iv antibiotics. Proper precautions should be taken prior to procedure.



Our study included usg guided pigtail catheter drainage for liquified liver abscess. The complications being pain, blockage of catheter, displacement of catheter tip. The catheter has to regularly be flushed to avoid blockage of catheter. The wide bore catheter also reduces the blockage of catheter.

The study concluded that ultrasound guided pigtail drainage of liver abscess significantly reduced the morbidity and mortality with minimal complications and limited hospital stay.

Coronavirus pandemic changed the lives of many so as ours. During our study we have done 8 COVID suspect cases but all are COVID negative. All patients recovered well.

Coronavirus disease 2019 (COVID-19) is an infectious respiratory disease caused by new virus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first outbreak occurred in Wuhan, Hubei, China. It has

been declared as pandemic by WHO on March 11,2020.It is characterised by respiratory symptoms such as fever,drycough,shortness of breadth,infiltration of chest X-ray .In addition to the risk of death ,it brought psychological pressure due to rapid spread and high mortality. Patients application in hospital emergencies were decreased.

The goal of surgeon is to provide timely care to patient presenting with urgent and emergent surgical conditionswhile optimising patient care resources and preserving health of care givers. Procedure and operations should be performed as delaying procedure will harmthe patient.

For patients who are known to be COVID 19 positive or COVID suspect ,non operative management is preferred. If operation is required ,appropriate PPE should be utilized .



Ultrasound image of liver abscess in a patient.

V. Conclusion:

Our study concluded that usg guided pigtail catheter placement for drainage of liver abscess reduces morbidity and it is a relatively safe procedure.

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