



Original Research Article

Ultrasound Guided F.N.A.C. is the Excellent Methods for the Diagnosis of Pyogenic Liver Abscess (PLA) in patients Attending in Tertiary Care Hospital, at N.M.C.H. Patna

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Abstract

Objective: *The aim of present study was to evaluate the role of Ultrasound guided F.N.A.C in the diagnosis of Pyogenic liver abscess (PLA) and know the etiopathogenesis, clinical characteristics, Radiological finding and management of pyogenic liver abscess.*

Materials and Methods: *A total of 36 patients of different age groups of both sexes presenting with complain of right hypochondrial pain and fever were attending in surgical and medical OPD were referred for Ultrasound guided FNAC in our department were included in the study. After thorough clinical history, all the patients were subjected to proper clinical examination. Prior to FNAC all the relevant routine investigation like CBC, ESR, LFT, KFT, BT, CT. Blood Sugar, Viral Markers were performed and written consent were taken. After preparation of patient FNAC was done by 10 ml syringe with 22 gauze needle in the presence of radiologist by Ultrasound Machine, Aspirated Materials were placed on grease free slide and fix. From aspirated samples grams staining and culture and sensitivity was done. The entire fixed smear were stained by Giemsa and papanicolaou stain and examined under oil immersion microscope.*

Results: *Out of 36 patients of PLA, 27 (75%) are male and 9 (25%) were female, with male to female ratio 3:1, patients age group was ranging from 12-63 yrs, with mean age was 36 year. Majority of patients 34 (94.5%) present with upper abdominal pain followed by fever with rigor in 23(63.8%). After clinical examination tenderness was seen in right hypochondrium in 33 (91.6%) patients. Majority of liver abscess was seen in Right lobe of liver in 29 (80.5%) patients, Most common organism isolated was klebsiella spp. in 16 (44.44%) cases and E.coli in 12 (33.33%) cases. Patients were responding well to Cephalosporins, Metronidazole, Fluroquinolones and Aminoglycosides. USG Guided FNAC was effective in 78% of cases.*

Conclusion: *Early diagnosis and prompt treatment of pyogenic liver abscess save the life of patient, because if not treated, may be fatal.*

Keywords: *pyogenic Liver abscess, bacteria, culture.*

Introduction

A pyogenic Liver abscess (PLA) is a pocket of pus that forms in the Liver in response to an infection or trauma. Pus is a fluid composed of white blood cell, dead cells, and bacteria that forms when our body fights off infection. In the case of PLA, instead of draining from the infection site, the pus collected in the liver. An abscess is usually accompanied by swelling and inflammation in the surrounding area.

The most common cause of PLA is biliary disease; this is a broad term for conditions affecting the liver, pancreas and gall bladder. An inflamed gall bladder is the most common cause for PLA out of all the biliary disease; other cause include bacteria from ruptured appendix that forms an abscess, pancreatic cancer, colon cancer, IBD, such as diverticulitis or a perforated bowel, septicemia, trauma to liver by accident or injury. People with Diabetes are at 3.6 times risk for PLA.

Main complication of PLA is sepsis, bacteria released and spread through the body can cause septic pulmonary embolism, Brain abscess, endophthalmitis. Incidence of pyogenic liver abscess is estimate to be 8-15 cases per 100,000 persons; in US in India it is higher due to poor health care facilities. Male to female ratio 2:1, common in Fourth to 6th decade of life

Liver abscess have been recognized since the age of Hippocrates. In 1883 Kochs described amoebae as a cause of liver abscess. In 1938, Ochsner and Debakey Published the Largest series of Pyogenic and amebic liver abscess in the literature. The causative organism isolated most often from blood and abscess cultures are, E. coli in 33%, K.Pneumoniae in 18%, streptococcal species in 37%, and Microaerophilic streptococci in 12%, klebsiella pneumoniae has emerged as a common isolates in patients with diabetes.

Pyogenic liver abscess is a common problem of both developed and developing countries and are most often polymicrobial. It is a condition with significant mortality if not treated promptly. Here the aim of my study is to determine

etiopathogenesis, clinical, radiological and bacteriological characteristics of patients of pyogenic liver abscess and its management, focusing on the drainage procedure. In the elderly, diabetic and immunosuppressed patients, there is increased incidence of this abscess.

The common presenting symptoms are upper abdominal pain, high grade fever, nausea, vomiting and loss of appetite. Jaundice and difficulty in breathing are less common. The common signs are tenderness in right hypochondrium, guarding and hepatomegaly. Jaundice, ascitis and pleural effusion, mostly right sided may be present. Biliary tract disease is found to be the most common cause. Other causes are portal hypertension, ruptured appendix, haematogenous spread (septicemia), liver trauma etc.

Majority of abscesses are multiple and in right lobe of liver due to biliary disease and haematogenous cause. Solitary abscess is due to portal circulation, cryptogenic and trauma. Earlier studies by Ochsner et al recommended open surgical drainage as per the treatment of choice. But now due to availability of better imaging modality and ultrasound guided percutaneous drainage procedure there is dramatic changes in pattern of treatment of pyogenic liver abscess.

Materials and Methods

The present study was carried out in the department of Pathology, Nalanda Medical College, Patna during the period of January 2017 to December 2017 with the help of Department of Surgery, Microbiology and Radiology. A total of 36 patients with different presenting complain and with right hypochondrial lump were seen in surgical and Medical OPD were send for Ultrasound Guided F.N.A.C. in our department.

From all the patient thorough present or past medical and surgical history were taken. Proper clinical examination was done. All the relevant routine investigation was performed in every case like CBC, ESR, BT, CT, LFT, KFT, Blood Sugar, Viral markers and plain X-Ray abdomen. Written

consent was taken from all the patients. F.N.A.C. was done by 10 ml. air tight disposable syringe with 23 gauze needle. Before to perform F.N.A.C. it is mandatory to inform the patients and explain them about the procedure.

After proper preparation the lump was palpated to determine its exact location and extent and after than fixed the lump with the help of left hand in a favorable aspiration position. Before to perform F.N.A.C. it is mandatory to inform the patients and explain them about the procedure.

Before inserting the needle the radiologist show the lesion site and size on the monitor screen with the help of probe the direction of needle is more or less same to the direction of probe. After that, the needle syringe was introduced vertically downward into the most prominent part of swelling.

Again we asked the radiologist to confirm that the needle is present inside the swelling or not. For this, they again placed the probe in close to needle syringe and confirm.

After that, the plunger was pulled to provide negative pressure. A few forward and backward to and fro movement of needle was made within the lump by maintaining the constant suction till some material appeared in the syringe or nozzle. After that the needle was withdrawn and the puncture site was pressed for 2 minutes and then sealed tincture benzoic swab.

The needle containing the aspirated material was detached from the syringe and reattached after pulling the plunger back. The aspirated material was pushed out on a clean glass slide and spread it gently with the help of other slide and makes a smear. The smear of two slide were cover with one drop of span cytofixed which fixed the content in wet from and two slide smear was shaken in air to make a air dry smear specially for Giemsa staining and Staining of cytological smear by Giemsa method and Papanicolaou stain. From aspirated samples grams staining and culture and sensitivity was done. After proper staining the entire slide were seen under oil Immersion lens and report accordingly.

Results

Out of 36 patients of PLA, 27 patients (75%) are male and 9 patients (25%) were female, with male to female ratio was 3:1, patients age group was ranging from 12-63 yrs, with mean age was 36 year. Majority of patients 34 (94.5%) present with upper abdominal pain followed by fever with rigor in 23(63.8%) patients, nausea and vomiting in 18 (50%) patients, diarrhea in 6 patients (16.66%) and anorexia in 17(47.22%) patients. On clinical examination tenderness was present in right hypochondrium in 33 patients (91.6%), guarding in 15 (41.66%) patients, hepatomegaly in 13(36.11%) patients, pallor in 19 (52.77%) patients, icterus in 4 patients (11.11%) and signs of toxemia in 12(33.33%) cases.

Majority of liver abscesses were found in right lobe of liver in 29 (80.5%) patients while left lobe was affected only in 3(8.33%) cases. In 4 patients (11.11%) both lobes were involved. Investigation reports showed Hb less than 10 gm % in 18(50%) patients, leukocytosis in 26 patients (72.22%) and leucopenia in 2 (5.55%) cases.

Pus culture reports showed Klebsiella in16 (44.44%) patients, Escherichia coli in 12 (33.33%) patients, Staphylococcus in 3(8.33%) patients, Bacteroids in 4 (11.11%) patients and citrobacter in 1 (2.77%) cases.

Cryptogenic causes were found in 17(47.22%) patients, biliary tract related cause in 4(11.11%) patients, portal hypertension in 2(5.55%) and haematogenous cause in 13(36.11%) patients.

Intravenous antibiotics cephalosporin, fluoroquinolones, Metronidazole and Aminoglycosides were responding well. About 36.2% patients improved completely while in 63.8% surgical procedure was needed. USG guided percutaneous aspiration or drainage was effective in 78% while in 8% percutaneous tube drainage was done.

Discussion

In this study significant clinical features were upper abdominal pain, fever with rigor and hepatomegaly. Incidence was maximum in middle

aged patients. About 17 (47.22%) were cryptogenic in origin followed by biliary disease, portal hypertension and haematogenous cause. With the development of better diagnostic technique and treatment, mortality rate has been significantly reduced. Liver abscess is rare in children. Most of the abscesses were in right lobe of liver. USG guided percutaneous needle aspiration and drainage along with intravenous antibiotics is the first line treatment. Percutaneous Drainage without USG guidance is avoided because an empyema may occur. In this study 78% patients were treated with percutaneous aspiration drainage along with antibiotics. The most common bacteria were Klebsiella followed by E. coli, Staphylococcus etc. The low mortality rate was due to early diagnosis and proper management.

Conclusion

FNAC is simple, low cost, safety, painless and for the initial investigation and diagnosis of both superficial and deep lesion. The clinical value of F.N.A.C. is not limited to Neoplasitic condition but also valuable in the diagnosis of inflammatory, Infectious and degenerative conditions. It is also useful in the diagnosis and monitoring of graft rejection in transplantation surgery. USG guided percutaneous needle aspiration was the first line treatment which is effective and cost effective for these abscesses along with parenteral antibiotics especially for smaller abscesses (<10cm). Patients recover faster with above treatment and duration of hospital stay is less. Tube drainage was needed in abscesses of size more than 10cm and in such cases duration of hospital stay is longer. Surgical intervention was, only considered in special cases like rupture of abscesses and other associated intraabdominal condition.

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