ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24JUN156

# Liver Abscess Caused by Foreign Body

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**Abstract:- A rare case of liver abscess due to secondary bacterial infection due to foreign body penetration into stomach wall reported in this case. Presented with less severe clinical features and non-specific features of acute abdomen .Liver abscess caused by foreign body is rare. The contrast-enhanced CT (computed tomography)of the abdomen and the minimally invasive abdominal operation both played critical roles in the diagnosis and treatment of the case. The general population, who mistakenly eat fish bones, should seek medical treatment as soon as possible.**

## I. INTRODUCTION

A liver abscess is defined as pus in liver that can develop from injury to the liver or an intra-abdominal infection disseminated from the portal circulation.[1] These abscesses categorized into pyogenic(mostly *polymicrobial, but some common organisms such as E.coli, Klebsiella, Streptococcus, Staphylococcus,* and anaerobes) or amoebic( mostly *Entamoeba histolytica),* in minority cases caused by parasites (hydatid cyst)and fungi. Location in liver ,around 50% of solitary liver abscesses occur in the right lobe of the liver (becouse of more blood supply), less commonly in the left liver lobe or caudate lobe. In rare cases foreign bodies in the digestive tract generally caused by mistaken consumption of different types of foreign bodies like fish bone ,chicken bone ,tooth picks ,safety pins and coins. Those foreign bodies eliminated smoothly from digestive tract without any mal-adaptation normally.

## II. CASE REPORT

A 53 year old male patient came to our Medicine OPD with complains of –

- Fever for 1month
- Loss of appetite 20 days.
- Pain abdomen for 10 days

➢ *History of Present Illness*

Patient was apparently alright 1 month back, to start with he developed intermittent high grade fever, highest recorded temperature is 104ºF most of time in evening after dinner. Fever is associated with chills and rigor, subsides only after taking antipyretic & cold sponging. He also complains of pain in the right upper abdomen for 10 days, which is dull aching in nature, radiates to right to shoulder ,associated with nausea, dry cough most of time nocturnal with high grade fever, last for two to four hour, pain is more marked & gradually increasing in severity when lying in right lateral position . Also marked weight loss , loss of appetite(unable to take full size meal as earlier) and malaise. After careful & thorough history it came to know that he had eaten fish with excessive alcohol in last marriage party .

➢ *Past Illness*

No history of T2DM or Hypertension . No relevant surgical history.

➢ *Personal History*

Tobbaco chewing for 20 years. Taking alcohol for 10years . He belongs to average socio-economic status . Married at age 27 yrs having 2 children. On Mixed Indian Diet.His bladder and bowel habits are normal.

➢ *General Examination–*

BP – 130/90 mmHg, Pulse 102/Min, Temp – 102 F, SpO2- 98% at Room Air, Respiration Rate – 20/Min, GCS-15/15(E4 V5 M6).

Patient is Conscious but Lethargic and irritated. Patient has mild pallor with epigastric & right hypochondrium fullness, tender Hepatomegaly. There are no features of shifting dullness, engorged veins, oedema, lymphadenopathy, clubbing ,raised JVP and cyanosis .

➢ *Course In Hospitalization–*

Patient was transferred to ward and treated with PRBC( packed red blood corpuscles) , Broad spectrum Anti-Biotics, anti-luminal, antipyretics and other Supportive drugs.

➢ *Investigations*

Laboratory investigation below showing anemia, leukocytosis, elevated alkaline phosphatase. Mostly improved after mangement.

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Table 1 Investigations

| PARAMETERS | ADMISSION DAY | DAY 3 OF HOSPITALIZATION | POST -OP SURGERY | ON DISCHARGE |
|---|---|---|---|---|
| **TLC** | ***99610/UL*** | ***89640/UL*** | ***41790/UL*** | ***31760/UL*** |
| **RBC COUNT -** | ***2.37million/cumm*** | ***2.94million/cumm*** | ***2.89million/cumm*** | ***3.89million/cumm*** |
| **HB%** | ***6.7 gm%*** | ***10.2 gm%*** | ***9.1gm%*** | ***13.9gm%*** |
| **PCV** | ***25.9 vol%*** | ***24.7 vol%*** | ***23.7 vol%*** | ***24.7 vol%*** |
| **MCV** | ***115.6 fl*** | ***94.9fl*** | ***83.7.9fl*** | ***83.7.9fl*** |
| **TPC** | ***173000*** | **189000** | **260000** | **260000** |
| **RDW-SD** | 56.7 fl | 55.9fl | 54.9fl | 57.9fl |
| **NEUTROPHIL** | 84.4% | 78.4% | 75.4% | 71.4% |
| **LYMPHOCYTE** | 30.7% | 32.3% | 12.3% | 9.3% |
| **MONOCYTES** | 4.0% | 2.9% | 3.9% | 2.9% |
| **EOSINOPHILS** | 0.5% | 0.3% | 0.1% | 0.0% |
| **BASOPHILS** | 0.4% | 0.3% | 0.3% | 0.1% |
| **CRP** | ***50.5 mg/dl*** | ***50.5 mg/dl*** | ***30.9mg/dl*** | ***10.5 mg/dl*** |
| **ESR** | ***140*** | | | ***28*** |
| **S. IRON** | 133 microgram/dl | | | |
| **LDH** | ***2412 IU/L*** | | | |
| **UREA** | ***19 mg/dl*** | | | |
| **CREATININE** | ***1.11 mg/dl*** | | | |
| **SODIUM** | 135.7 mmol/l | | | |
| **POTASSIUM** | 4.59 mmol/l | | | |
| **URIC ACID** | 5.1 mg/dl | | | |
| **CHLORIDE** | 105 mmol/L | | | |
| **CALCIUM** | 7.0 mg/dl | | | |
| **PHOSPHORUS** | 3.9 mg/dl | | | |
| **TOTAL BILIRUBIN** | ***0.58 mg/dl*** | | | ***0.38 mg/dl*** |
| **DIRECT BILIRUBIN** | ***0.86 mg/dl*** | | | ***0.51 mg/dl*** |
| **ALT** | 43.7 U/L | | | 40.7 U/L |
| **AST** | ***50.6 U/L*** | | | ***54.6 U/L*** |
| **ALP** | ***135 U/L*** | | | ***115 U/L*** |
| **TOTAL PROTEIN** | 6.9 gm/dl | | | 5.9 gm/dl |
| **ALBUMIN** | 3.2 gm/dl | | | 3.1 gm/dl |
| **GLOBULIN** | 3.7 gm/dl | | | 3.6 gm/dl |
| **A/G RATIO** | 0.86 | | | 0.86 |
| **T3** | 1.39 | | | |
| **T4** | 9.7 | | | |
| **TSH** | 1.663 | | | |
| **PT** | ***13.5 sec*** | ***13.6 Sec*** | | ***13.86 Sec*** |
| **INR** | ***1.93*** | ***1.86*** | | ***1.76*** |
| **APTT** | ***31.8*** | **32.3** | | **31.8** |
| ***Hepatitis & HIV Panel – Negative.*** | | | | |
| ***USG Abdomen – liver abscess in left lobe , mild Hepatomegaly.*** | | | | |
| ***CHEST X-RAY – RIGHT HEMI-DIAPHRAGM*** | | | | |
| ***CECT ABDOMEN – multiple inter-communicating liver abscess in segment II & III, thin curvilinear foreign body in left sub-hepatic region abutting antro-pyloric region of stomach with other end in segment III.*** | | | | |

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➢ *X-Ray Chest PA View*

Below Figure 1- X-ray chest postero anterior view below showing right hemi-diaphragm in suspicious about liver pathology.

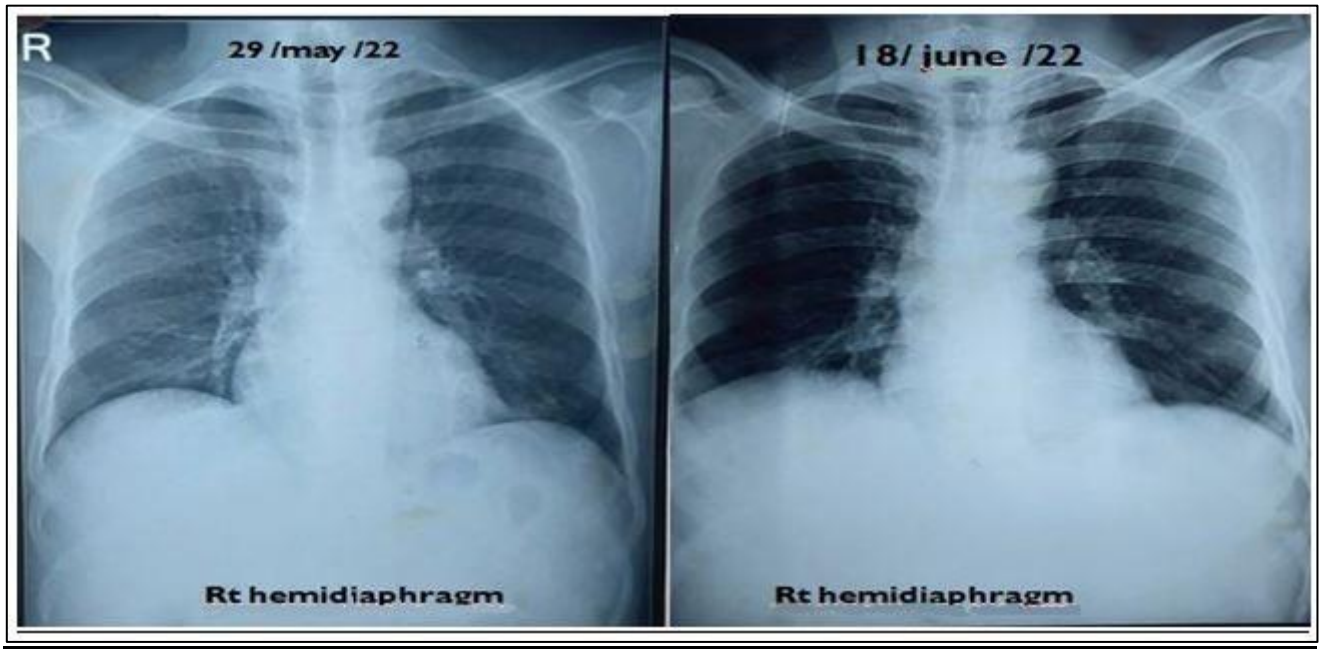


**Fig-1 X-Ray Chest PA View**

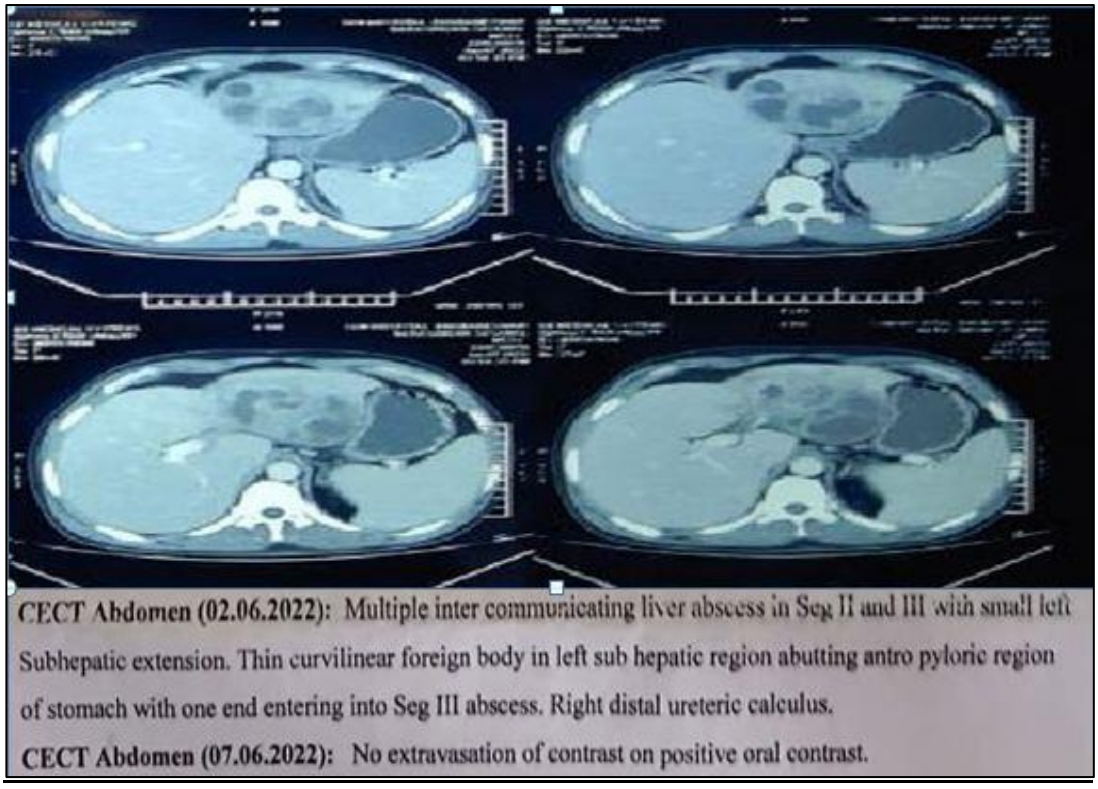


**Fig 2 CECT Abdomen**

Above Figure 2- Contrast enhanced CT (computed tomography)scan showing multiple inter-communicating liver abscess in segment II & III, thin curvilinear foreign body in left sub-hepatic region abutting antro-pyloric region of stomach with other end in segment III.

## III. TREATMENT / MANAGEMENT

Managed with Empirical antibiotic for coverage of anaerobes, entamoeba histolytica ,entero-bacteriaceae, streptococci & enterococci. Such antibiotic regimens include

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Beta-Lactamase inhibitor with metronidazole ,the fever get decreased.

➢ *Exploratory Laparotomy*

Below figure 3 showing hepatic resection of lobe (seg II & III ) with liver abscess drainage & foreign body ( two fish bone length 3.2 & 1.8 cm ) extracted and repair of gastric perforation at antro-pyloric region of stomach.

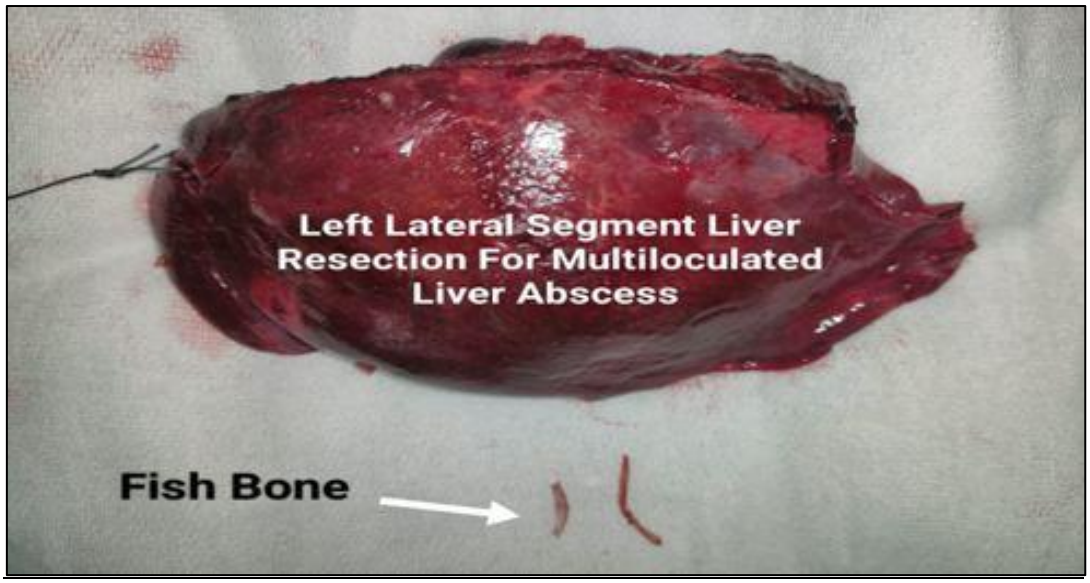


Fig 3 Respected Part of Left Lateral Segment having Multiloculated Abscess & Two Fish Bone Length 3.2 & 1.8 cm

## IV. DISCUSSION

Bacterial liver abscesses are common clinical infectious disease of the liver and mostly presented with fever, chill, and pain abdomen. But some cases presented with non-specific clinical features.

Liver abscess mainly caused by bacterial invasion through three routes ( hepatic arteries, billiary tracts and portal veins) . In comparison, the liver abscess that resulted from the penetration of foreign bodies through the stomach wall after entering the digestive tracts is rarely seen in the clinical practice.

Foreign bodies usually get impacted at the esophageal sphincters, pyloric canal, duodenum, ileocaecal valve, and anus due to extrinsic impression or anatomical narrowing. Perforations are more common in the oesophagus causing pneumo-mediastinum, retropharyngeal abscess, mediastinal abscess, and bleeding.3 Normally, 80% to 90% of the foreign bodies in the digestive tract can be eliminated by gastric acid, anti-bacterial gastric juice & inflamatory action without any mal-adaptation. Beyond the esophagus perforation and complications are rare.

However 1% of the fish bones are sufficiently large or hard (like fish spine bone)that cannot be digested by gastric juice or pass through, due to pyloric stenosis or narrow space, the sharp fish bone is most likely to penetrate the stomach wall due to the rapid contraction of the stomach during peristalsis.

Perforation commonly seen in stomach lesser curvature because of the anatomical acute angularity with abscess most commonly developing in left hepatic lobe, because of its proximity with stomach lesser curvature.

Foreign body width larger than 2 to 2.5cm,can't get through the pylori and longer than 5 to 6cm,cannot pass through the duodenum preventing from being discharged out of digestive tract.

The classic clinical features of hepatic abscess like fever, abdominal pain, and jaundice is usually not seen, most patients have vague symptoms such as anorexia, and vomiting with leukocytosis, deranged liver function test, making the diagnosis more difficult without definitive history of fish bone ingestion.

Bacterial flora seen in the oral-cavity commonly found in abscess cultures.[2,5]

Small abscess (less than 5 cm) treated with antibiotics. Larger abscess(more than 5cm) with multi-loculations treated with surgery, draining of the abscess, and removal of the foreign body.

## V. CONCLUSION

In conclusion, Secondary liver abscess, unlike other liver abscess, due to foreign body requires urgent reasonable and therapeutic regimen according to the medical history ,laboratory examination and imaging manifestation.

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The patients with mistaken fish bone ingestion complications presents with nonspecific features of acute abdomen. The clinical diagnosis is difficult without a definitive history of fish bone ingestion. The CT (computed tomography) scan localize the ingested fish bone for proper timely treatment and provide comprehensive evaluation of the complications of fish bone ingestion including hepatic abscess. [3,5]

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