Case Presentation and Discussion on a Patient with Right Upper Quadrant Mass

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General Data:
20 year-old
Male

Chief Complaint:
“abdominal pain”
History of the Present Illness:

1 month PTA  ➔  RUQ pain vomiting

6 days PTA  ➔  increased severity of pain consult – IM-ER

2 days PTA  ➔  recurrence of pain consult IM-ER

Few hours PTA  ➔  RUQ pain Consult IM-ER Referred to Surgery

Admitted
IM-ER Diagnosis: Hepatic Abscess, Amebic, Right Hepatic Lobe

- Initial US Findings:
  - RUQ Mass, Hepatic in origin, Right Hepatic Lobe, Cystic with septations

- Plain film of the Abdomen
  - Hepatomegaly
  - Ileus
  - Fecal Retention
• Past medical history: unremarkable
• Personal and social history unremarkable
• Family medical history unremarkable
• Review of System weight loss
Physical Examination: Upon referral to Surgery

• Conscious, coherent, oriented
• BP = 130/80mmHg  CR = 81 beats/min
  RR = 20 cycles/min  Temp = 36.9°C
• Pink palpebral conjunctivae, anicteric sclerae
• Supple neck, no cervical lymphadenopathy
Physical Examination:

- Symmetrical Chest Expansion, no retractions, Clear breath sounds
- Adynamic precordium, no murmur
- Extremities: no edema; full and equal pulses, no cyanosis
Physical Examination:

- Slightly Globular, Normoactive bowel sounds, soft, RUQ mass 14cm below subcostal margin RMCL with tenderness dull on percussion
Salient Features

• 20 y/o, Male
• Right Upper Quadrant Pain
• Right Upper Quadrant Mass with tenderness
• Initial US Finding:
  – RUQ Mass, Hepatic in origin, Right Hepatic Lobe, Cystic with septations
Clinical Diagnosis

A. Primary Clinical Diagnosis:
   Hepatic Mass, Amebic Abscess, Right Hepatic Lobe

B. Secondary Clinical Diagnosis:
   Simple Hepatic Cyst, Right Hepatic Lobe
RUQ Mass

Abdominal Wall

Intra-abdominal

Intraperitoneal

Retroperitoneal

Liver
GB and Biliary Tree
Pancreas

Non-Inflammatory

Inflammatory

Malignant
Benign

Simple Hepatic Cyst

Amebic Liver Abscess

Kidney
<table>
<thead>
<tr>
<th>CLINICAL DIAGNOSIS</th>
<th>CERTAINTY</th>
<th>TREATMENT MODALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hepatic Mass, Amebic Abscess, Right Hepatic Lobe</td>
<td>80%</td>
<td>Medical Surgical</td>
</tr>
<tr>
<td>Simple Hepatic Cyst, Right Hepatic Lobe</td>
<td>20%</td>
<td>Observation Surgical</td>
</tr>
</tbody>
</table>
Paraclinical Diagnostic Procedures

• Do I need additional paraclinical diagnostic procedure?
  – NO.
  – Follow-up on official ultrasound report
Treatment

Pre-treatment Diagnosis:
Hepatic Mass, Amebic Abscess, Right Hepatic Lobe
Treatment

• Goal of Treatment:
  > resolution of liver abscess
## Treatment Options

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Benefit</th>
<th>Risk</th>
<th>Cost</th>
<th>Availability</th>
</tr>
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<tbody>
<tr>
<td><strong>Medical</strong></td>
<td>90% Success Rate</td>
<td>Adverse Drug reactions</td>
<td>300/day</td>
<td>yes</td>
</tr>
<tr>
<td><strong>Surgical</strong></td>
<td>60 – 100% Success rate</td>
<td>Bleeding</td>
<td>1,500 to 5,000</td>
<td>yes</td>
</tr>
</tbody>
</table>

Agreed on Medical Management by Internal Medicine.

Patient was admitted.

Patient was given Metronidazole
Course in the wards:

• 4 days after admission:
  – No abdominal pain
  – RUQ mass, 10 cm below subcostal margin
  – No tenderness

  – Plan: Suggested repeat ultrasound
Ultrasound Report

• The liver is normal in size. The proximal intra-hepatic ducts are slightly dilated. There is a large tubular septated cystic mass measuring about 28.8cm x 10.7 cm just above the portal vein showing a bright echo 2.0cm in size with acoustic shadowing. This fluid filled mass extends to the midabdomen and partially obscured the pancreatic head.
IMPRESSION:

Normal size liver
Contracted Gallbladder
T/C Choledochal Cyst with stone formation
Suggest CT Scan or PTC
Further Imaging Options:

• Importance:
  – Confirmatory
  – Plan for future surgical intervention

<table>
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<th>Benefit</th>
<th>Risk</th>
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<tbody>
<tr>
<td>CT Scan</td>
<td>+++</td>
<td>++</td>
<td>5T</td>
<td>Yes</td>
</tr>
<tr>
<td>PTC</td>
<td>+/-</td>
<td>++++</td>
<td>10T</td>
<td>No</td>
</tr>
<tr>
<td>MRI</td>
<td>+++</td>
<td>+</td>
<td>10T</td>
<td>Yes</td>
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The liver is markedly enlarged with the tip of the right lobe extending below the lower pole of the ipsilateral kidney.

There is fairly he non-enhancing hypodensity occupying the right lobe of the liver measuring 11.8 x 14.1 cm in its widest axial diameter. The border outline is well defined. The central biliary tree is slightly dilated. There is a small and separate hypodensity in the left lobe.
• The spleen and adrenal glands are unremarkable.
• The pancreas is displaced laterally and the size and contour of which are difficult to evaluate.
• Both kidneys are functioning without hydronephrosis.
• The opacified bowels are displaced inferiorly and laterally.
• The urinary bladder is fully distended and is unremarkable.
• **IMPRESSSION:**
  - Hepatomegaly with a fairly large, Right Hepatic Cyst
  - Dilated central biliary tree
Referred back to surgery:

Treatment:
  Pre-treatment Diagnosis:
    Hepatic Cyst

Goal:
  Resolution of Mass
## Treatment Options

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<td><strong>US guided Percutaneous Aspiration</strong></td>
<td>High recurrence rate Diagnostic</td>
<td>bleeding</td>
<td>1,500</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Laparotomy Unroofing</strong></td>
<td>Success Rate 90 – 100%</td>
<td>Biliary injury</td>
<td>5,000</td>
<td>yes</td>
</tr>
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</table>
Preoperative preparation:

- Informed consent secured
- Psychosocial support
- Optimize patient’s health
- Screen for any condition that will interfere with treatment
- Prepare materials
- Patient supine
- Aseptic and antiseptic technique RUQ AREA
- Local anesthesia injected
- French 16 needle inserted Guided ultrasonically
US Guided Percutaneous Aspiration

Findings:

1.2 liters of bile evacuated.

Cystogram suggested:
Cystogram
Diagnosis:

Choledochal Cyst

Goal:

- Resolution of Cyst
- Restore Hepatobiliary continuity
- Avoid complications
# Treatment Options

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<tr>
<td><strong>Cyst Drainage (Cyst-enterostomy)</strong></td>
<td>% Revision: 22 – 30% Mortality: 8 – 12% Morbidity: 10 – 50%</td>
<td>Leak</td>
<td>7,000</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Cyst Excision (Roux-y Hepaticojejunotomy)</strong></td>
<td>% Revision: 0 – 1% Mortality: 2– 7% Morbidity: 2 – 8%</td>
<td>Injury to surrounding structures</td>
<td>7,000</td>
<td>Yes</td>
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Preoperative preparation:

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- Psychosocial support
- Optimize patient’s health
- Screen for any condition that will interfere with treatment
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Operative Technique

- Position: patient supine under GA
- Asepsis and antisepsis technique
- Incision: Right Subcostal oblique incision 2 fingerbreadths from subcostal margin
Intra-operative Findings Noted:

- Upon opening through right subcostal oblique incision noted massive dilatation of the whole segment of extrahepatic duct containing 750 cc of bile. This was markedly adherent to the portal vein, pancreas, and retroperitoneal structures.
Operative Technique

- Decompression done
- Cyst mobilized but deemed unresectable
- Jejunum mobilized for internal drainage
- Jejunum transected 40cm from LOT
- End of Distal portion closed and anastomosed side to side to the cyst wall after partial cystectomy
- Proximal end of jejunum anastomosed end to side to Distal jejunum 40cm from choledochojejunostomy
• Proximal end of jejunum anastomosed end to side to Distal jejunum 40cm from choledochojejunostomy
• Hemostasis
• NSS wash
• Correct sponge, instrument, needle count
• Penrose Drain placed on subhepatic area
• 2 layer closure of fascial layers
• Skin closed interruptedly
Operative Procedure

• Partial Cystectomy; Internal Drainage
  Cyst-jejunostomy (Roux-Y)
Post operative Diagnosis

Choledochal Cyst
Type Ia
Discussion:

What is Choledochal Cyst?
- congenital anomalies of the bile ducts
- cystic dilatations of the extrahepatic biliary tree, intrahepatic biliary radicles, or both.
Classification:

Type I

Type II

Type III

Type IV

Type V
Pathophysiology:

- multifactorial
- majority have APBJ more than 90% - Miyano and Yamataka
  - pancreatic duct enters the common bile duct 1 cm or more proximal to where the common bile duct reaches the ampulla of Vater.

- APBJ allows pancreatic secretions and enzymes to reflux into the common bile duct.
  - alkaline conditions found in the common bile duct
  - pancreatic proenzymes become activated.
  - results in inflammation and weakening of the bile duct wall

- congenital standpoint,
  - defects in epithelialization and recanalization of the developing bile ducts during organogenesis
  - congenital weakness of the duct wall have also been implicated.
Clinical presentation:

• Classic clinical triad - present in only 10-20%
  – abdominal pain (51 to 55%)
  – Jaundice (45 – 46%)
  – palpable right upper quadrant abdominal mass (37 – 58%)
Cyst-Associated Malignancy

- 2.5% to 28%
  - 10.8% incidence of cholangiocarcinoma with non-cyst excision or non-operated congenital choledochal cyst
- Cholangiocarcinoma
  - adenocarcinoma - most common malignant cell type
– Other less common types
  • Adenosquamous
  • Squamous
  • Anaplastic

– Prognosis
  • Poor
  • Mean survival after diagnosis is 8 months
References:


References:


MCQ

Direction: Choose the best answer.

1. What is the most common malignancy in the biliary duct system?
   A. Squamous
   B. Anaplastic
   C. Perihilar Adenocarcinoma
   D. Intrahepatic Adenocarcinoma
   E. Botryoid sarcoma
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2. Following factor/s is/are associated with higher incidence of choledochal cyst?

A. Japanese
B. Male
C. Obese
D. American
E. Elderly
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A. Japanese
B. Male
C. Obese
D. American
E. Elderly
MCR.

Direction: Write

“A” if 1, 2, and 3 are valid statements.
“B” if only 1 and 3 are valid statements.
“C” if only 2 and 4 are valid statements.
“D” if only 4 is a valid statement.
“E” if all are valid statements.
3. What type as described by Todani is not included in the Alonso-Lej Classification?

1. Type Ia
2. Type II
3. Type III
4. Type IV
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1. Type Ia
2. Type II
3. Type III
4. Type IV
3. The following factors are associated with higher incidence of choledochal cyst?

1. Race - Asian ancestry
2. Age – less than 10 year old
3. Sex – Female
4. Nutritional Status - Obese
4. Correct statement for Percutaneous Transhepatic Cholangiography includes the following:

1. Usually has complication of significant hemobilia that requires immediate intervention
2. preferred when initial US shows dilated intrahepatic ducts without extrahepatic duct dilatation
3. preferred when distal common bile duct obstruction is suspected
4. requires positioning of a guide wire in an intrahepatic duct
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5. Babbit's concept of concerning the cause of choledochal cyst is based on the demonstration of APBDU. What type/s of choledochal cyst is/are not associated with this concept?

1. Type I
2. Type III
3. Type IV
4. Type V
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1. Type I
2. **Type III**
3. Type IV
4. **Type V**