Biliary Ascariasis: A case study
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Introduction
The roundworm Ascaris Lumbricoides is an extremely common parasites of human gut. It has been estimated that more than 1 billion people are infected and that it causes around 60000 deaths per annum. It thrives under conditions of poor sanitation, especially in the tropics, where warm, humid soil facilitates embryonation of the eggs in the environment.

Bangladesh is one of the underdeveloped countries of the world lying in subtropic zone. The standard of living of the majority of the people of Bangladesh is low. The knowledge of sanitation and awareness of disease and consequences are minimum. A lion share of the people living in the villages depends on agriculture as mean of earning. In addition, environmental factor and lack of basic sanitation favors the growth of parasites mainly Ascaris Lumbricoides all over the country, which causes significant health problems in our country.

cause abdominal discomfort or colic and may vomited or passed per rectum. An tangled mass of worms may cause intestinal obstruction and in case heavy infestation, it contributes to malnutrition.

Migration of one or two worms into the biliary tree is a well known complication of intestinal ascariasis giving rise to upper abdominal colic, nausea, vomiting and rarely jaundice but massive infestation may rarely occur. In both cases if not promptly and effectively treated some secondary complications like cholecystitis, cholangitis, liver abscess, primary duct stone, pancreatitis, benign bile duct stricture or even cholangiocarcinoma may developed.

Pathogenesis
Migration of an adult ascaris through the sphincter of oddi in the common bile duct leads to biliary ascariasis. The invading worm carry some enteric flora into bile duct causing cholangitis. Several worms may block the cystic duct causing biliary colic or acalculus cholecystitis. Liver abscess occurs when intra hepatic ducts are blocked.

Precipitating factors
- Drugs
- Fever
- Anaesthetic agents
- Spicy foods
- Antihelminthic
- Previous Sphincterotomy

Clinical features
- Symptoms variable
- Bilious vomiting
- Recurrent right hypo-chondriac pain
- Jaundice
- Palpable GB
- Nausea

Figure 1: Ascaris Lumbricoides

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Liver enlarged tender with intracostal tenderness
Low grade fever

**Investigations**
- Blood count - Marked leucocytosis
- Serum bilirubin - may be raised
- Alkaline Phosphatase
- USG of hepatobiliary system and pancreas:
  - Dilatation of the CBD (Common Bile duct)
  - Bulls eye configuration-in cross section
  - Spaghetti sign- in longitudinal section (an echogenic strip with a anechogenic tube) several worms imaged at a time.

**CT Scan**
- Worms in the dilated CBD.
- Liver abscess

**ERCP (Endoscopic Retrogade Cholangio Pancreatography)**

**Diagnostic**
- Worm can be seen entering or leaving the ampulla of Vater
- Bile sample can be obtained for ascaris egg and C/S for bacteria

**Therapeutic**
- Extraction of the worm through ampulla of Vater

**Fate**
- Spontaneous return to duodenum
- Female laying eggs and dies
- Nidus for gall stone
- Secondary bacterial infection- cholangitis
- Liver abscess

**Management**

*Conservative management*
- NPO (Nothing per oral)
- N/G suction (Nasogastric suction)
- I/V fluids
- Anti spasmodic
- Antibiotics

After acute attack subsided a course of antihelminthic drugs should be given.

*If fail or recurrent attack*
- ERCP extraction

**Rarely**
- ERCP fail, then Exploration of bile duct should be done

*In case of bile duct stricture*
- Bilio-enteric anastomosis should be done.

**Prophylaxis**
The measures consists of:
- Proper disposal of human faeces
- Treatment of parasitised individuals and
- Education of children in school on sanitary laws and hygiene

**Study**

*Columbian study*[^6]
- 19 children under the age of 12 yrs.
- Majority respond to non operative treatment

*A recent cohort study*[^6]
- 500 Indian patient from Kashmir
- Mean age - 35 yrs.
- Mean duration - 6 yrs.
- Biliary colic in - 280 patients

[^6]: Reference links or citations are not provided in the text. They should be included in the full text version for accurate citation.

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- Cholecystitis - 64
- Cholangitis - 121
- Liver abscess - 4
- Others -

Study in last 5 months in SU-Ill of SSMC, Mitford Hospital
- Total admission - 564 patients
- Biliary disease - 47 patients
- Biliary ascariasis - 5 patients
- 3 conservative
- 2 operative

Case report
A 30 years old lady Mrs. Bibi Saira having three child nonhypertensive, nondiabetic, nonsmoker, housewife of low socio-economic group hailing from Keranigonj, Dhaka was admitted in this hospital in surgery department on 19.06.03 with the complaints of-

- Recurrent upper abdominal pain for the last seven months which was severe and colicky in nature, radiates to back and right shoulder. Pain increases after taking fatty food and relieves by antispasmodics.

- Pain was associated with fever which was high grade, intermittent with chills and rigor.

- Patient also complains vomiting during the attack of pain which sometimes relieves the pain.

- She also noticed jaundice which was intermittent.

- Her menstrual cycle was normal and on OCP (Oral Contraceptive Pill). All of her family members are in good health.

On examination
- Patient found -Moderately icteric and anaemic, her pulse rate was 100 beats/minute, Blood pressure was 20/80 mm of Hg, temperature was 100°F.
- All other vital parameters were within normal limit

Investigations
- Total Count: 11,600/cu mm of blood
- D/C:
  - Neutrophil 64%
  - Monocyte 02%
  - Lymphocyte 24%
  - Eosinophil 10%
  - Basophil 0%
- Serum bilirubin 3.8mg/dl
- Serum amylase 845u/l
- Serum alkaline phosphatase 400u/l
- Prothrombin time:
  - Control 12sec
  - Patient 14sec
  - Blood sugar (random) 6.2 mmol/lit
  - S. creatinine 1.2 mg/dl
  - CXR (Chest X-ray) normal study

Conservative management given by
- NPO
- N/G suction
- I/V fluids
- Antispasmodics
- Antibiotics

Operation
On 1.07.03 Cholecystectomy and exploration of bile duct done- multiple live and dead worms with stone found within CBD. After removal of the stones and worms normal saline irrigation was given and abdomen closed after keeping a T-tube in CBD.
Figure 2: Cholecystectomy and exploration of bile duct

Post operative
T-tube cholangiogram shows few small radiolucent shadow - calculus seen in lower part of CBD. Normal saline irrigation given through T-tube. T-tube was removed on 30.07.03 and giving antihelmenthic drug patient was discharged. Patient was advised for follow up visit after 1 month.

References