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Clinical Study of Biliary Ascariasis in Adults: A Hospital Based Study from North Eastern India

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Aims and Objectives: to study the clinical presentations and various options for the management of biliary ascariasis.

Materials and Methods: This is a retrospective Hospital Based Study carried out in a Tertiary care hospital. A total of 58 patients (31 females and 27 males) were studied over a period of 4 years. All cases of suspected biliary disease were subjected to a thorough history taking, clinical examination and investigations.

Results: Biliary ascariasis was more common in female. The mean age of the patients was 35.52 ± 16.01 years. Ultrasonography of abdomen was the diagnostic tool of choice with 100% accuracy. 38 (65.51%) patients recovered with conservative treatment and antihelminthics. In 8 (13.79%) patients, the worms were extracted with upper G.I Endoscopy using a snare. In the rest 12 (20.68%) patients the worms were removed with ERCP using a dormia basket.

Conclusion: Ultrasonography is an excellent diagnostic tool. Most of the patients responded to conservative treatment. Early therapeutic ERCP is advisable in patients not responding to conservative treatment.

Introduction:

Ascaris lumbricoides is the largest intestinal nematode in human and is one of the most common helminthic human infections worldwide (figure 1).

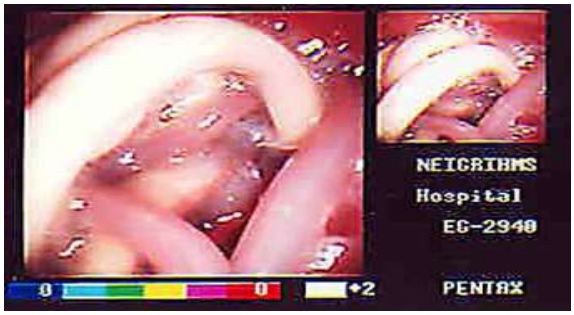

Figure 1; Round worms in the intestine

Ascaris occurs commonly in developing countries worldwide; It has been estimated that approximately 800 million people are infected [1,2]. The majority of individuals with ascariasis live in Asia (73 percent), Africa (12 percent), and South America (8 percent). [1,3,4] Ascariasis is seen mostly in the tropical and sub-tropical countries as the warm and humid conditions are conducive to the development of ascariasis larvae; the poor sanitation in these areas help in maintaining the infection cycle. In the Indian subcontinent, ascariasis is reported to be highly endemic in Kashmir (70%), Central and South Western parts

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of India (20-49%). In endemic areas it is a common cause of biliary and pancreatic disease.[5] Ascaris invasion into the bile duct can cause biliary colic, pyogenic cholangitis, pancreatitis and septicemia. There may be deposition of salts, other minerals etc. on dead worm leading to formation of stone (figure 2)

Figure 2; Stone formation on dead worm

Meghalaya State is situated in the North- Eastern part of India. It is situated at 5000 feet above sea level and does not have the climatic similarities with the rest of the country. Yet we have noticed a very high prevalence of ascariasis among the population of Meghalaya. Even though it is not recognized as a highly endemic area for ascariasis, we have also encountered a good number of cases of biliary ascariasis among all age groups in the population. Even though review of literature suggests that children are less likely to suffer from biliary ascariasis, possibly due to the smaller size of the biliary ductal system, it is not uncommon to encounter this entity in the pediatric age group as well. This is a retrospective **Hospital Based Study** carried out in the Department of internal Medicine in a Tertiary care hospital.

Materials and Methods:

All cases diagnosed with biliary ascariasis in adults were included in the study. A total of 58 patients (31 females and 27 males) were studied over a period of 4 years. Patient age was between 18 and 74 years, with mean age of 35.52 ± 16.01 years. All cases of suspected biliary disease were subjected to a thorough history taking and clinical examination. Complete blood cell count, liver function tests, serum amylase and lipase and ultrasound of the abdomen was performed in all the patients. Upper GI Endoscopy was done in all patients and ERCP was done only in those patients who failed to respond to conservative management and repeated ultrasonography showing the presence of worms in the lumen of the biliary tract.

All the patients were initially managed conservatively with IV fluids, IV antibiotics and IV antispasmodics. All the patients were dewormed with Albendazole, Mebendazole or Pyrentel pamoate. Endoscopic intervention was carried out when conservative treatment failed. Serial ultrasonography was performed to check for recurrence during follow-up.

Results:

Biliary ascariasis was more common in female (53.44%). The study comprised 31 women and 27 men; the mean age of the patients was 35.52 ± 16.01 year s (range 18-74 yr).The clinical presentation comprises of upper abdominal pain due to Biliary colic, vomiting, jaundice and fever when there is associated cholangitis [Table].

Presenting features	Number of patients	Percentage
Abdominal Pain	58	100
Vomiting	21	36.2
Vomiting of worms	12	20.6
Fever	06	10.3
Jaundice	05	8.6

Legend – Table showing presenting features of patients with Biliary ascariasis (n = 58)

Complete blood count is usually normal except for a few patients who had eosinophilia and leucocytosis in patients with cholangitis. Bilirubin is raised in few patients with obstructive jaundice

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and elevation of amylase and lipase in patients with pancreatitis. Ultrasonography of abdomen was the diagnostic tool of choice with 100% accuracy.

38 (65.51%) patients recovered with conservative treatment and antihelminthics. In 8 (13.79%) patients, where the worm is protruding and visible outside the ampulla during upper GI Endoscopy, the worms were extracted with forceps/snare. In the rest 12 (20.68%) patients where the worms had migrated completely inside the common bile duct/ pancreatic duct/ hepatic duct, and failed conservative management the worms were removed with ERCP using a dormia basket.

Discussion:

Biliary ascariasis is highly prevalent in this part of the country. We diagnosed 58 cases in four years. The presentation of the disease was similar to already reported series of biliary ascariasis[6,7]. Women are more commonly affected than men.

Diagnosis of biliary ascariasis usually depends on the demonstration of worms in the biliary tract by different imaging techniques, all of our patients could be diagnosed with transabdominal ultrasonography (figure 3).

Figure 3; Transabdominal ultrasonography showing a round worm

Most of the patients responded to conservative management. 65.51% in our study which is much lower than a study from Kashmir where 88% of their cases responded to conservative management [8]. This is especially encouraging in developing country as facility for endoscopy/ERCP is not easily available or affordable.

Upper GI endoscopy is a good option for diagnosis and management as seen in our series where in 13.79% of the patients, worms could be removed by upper GI endoscopy (figure 4A and 4B).

Figure 4A; Round worm removed with upper GI Endoscope

Figure 4B;Round worm removed with upper GI Endoscope

Like any other diseases of the hepatobiliary system, Endoscopic retrograde cholangio pancreatography (ERCP) is the best modalities of treatment as it can remove the worms which had migrated completely inside the common bile duct/pancreatic duct/hepatic duct, and failed conservative management(figure 5A and 5B).

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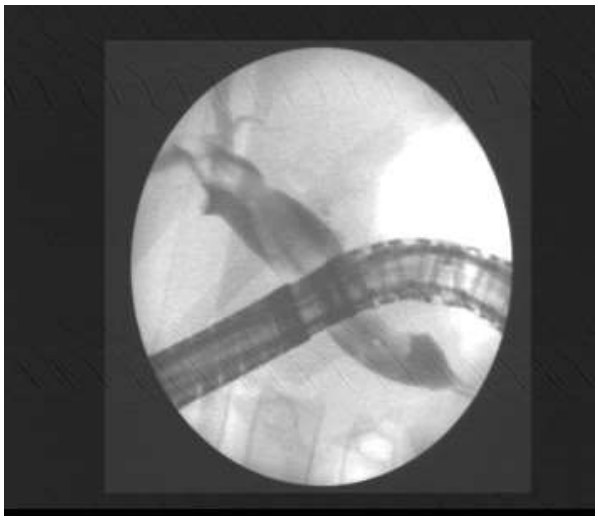

Figure 5A

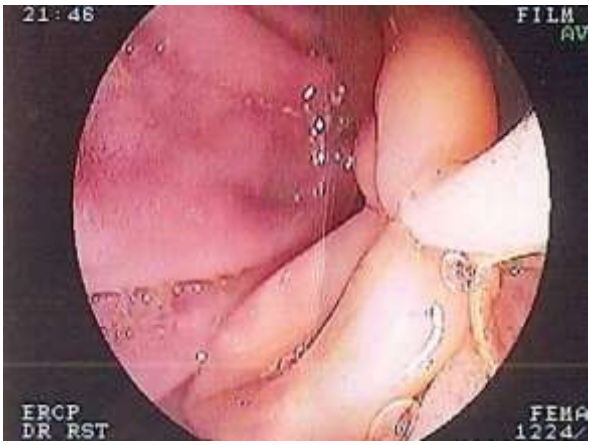

Figure 5B: ERCP

Conclusion:

Acariasis lumbricoides is a common pasrasitic infestation encountered especially in tropical areas of developing countries. Migration of the worms into the bile duct causing biliary obstruction with a variety of hepatobiliary complications is not uncommon. Ultrasonography is an excellent diagnostic tool as it is a safe, noninvasive and relatively inexpensive modality with a high diagnostic accuracy. Most of the patients responded to conservative treatment. Early therapeutic ERCP is advisable in patients not responding to conservative treatment.

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