



Biliary Ascariasis in Children

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Abstract

Objectives: Biliary ascariasis is a serious problem in children. Its early diagnosis and management is essential for survival of children. In order to find out incidence, investigational profile, therapeutic modality of biliary ascariasis in children the following study was conducted.

Method: The children (less than 10 years) who came to attend Pediatric Gastroenterology OPD in PGIMER Chandigarh from July 1993 to June 2003 with history suggestive of hepatobiliary/pancreatic/ascariasis (e.g. round worm expulsion/ abdominal pain/ vomiting/ jaundice etc.) were admitted to pediatric gastroenterology ward. Detailed history taking /clinical examination/ investigation (USG whole abdomen/ MRCP/ LFT/amylase/lipase/PTI/ERCP etc. as per individual case) were done. During ERCP, worms were extracted from duodenal papilla by snare/dormia basket. IV fluid /IV antibiotic / NPO/nasobiliary drainage etc. were done.

Results: Fifty cases of biliary ascariasis in children were admitted. Age was 3-10 years (mean – 6 years). Out of 50 cases, 45(90%) had abdominal pain, 25(50%) had cholangitis, 15(30%) had jaundice, 50(100%) had vomiting. In ERCP, worms were extracted by snare /dormia basket. Double pigtail plastic biliary stent was deployed in 30(60%) cases. Nasobiliary drainage was done in 10(20%) cases. IV drip/inj. antibiotic etc. were done. After removal of worms, all of the 50 cases recovered remarkably. There was up and down movement of worms in bile duct and hepatic duct. None developed cholangitic abscess/ hepatic abscess/ hemobilia/hepatobiliary stone in subsequent follow up.

Conclusion: Biliary ascariasis is a serious problem in children. Endoscopic management is very much useful to tackle this problem

Keyword: Biliary ascariasis, children.

Introduction

Ascariasis is a global problem. It mainly involves large number of children in tropics. Hepato Biliary ascariasis is a unique problem which is diagnosed by USG / Endoscopic procedure. It is manifested as acute abdomen with jaundice, recurrent pyogenic cholangiopathy which can be

managed by medical, endoscopic or surgical therapy. Fixed modality of treatment is difficult to obtain. But high index of suspicion is a must.⁽¹⁾

Baba AA et al observed that 25% of world population is affected by ascariasis. It has high incidence in Kashmir. Intestinal obstruction is commonest but biliary ascariasis is second

common manifestation. Cholangitis, obstructive jaundice, acute pancreatitis, hepatic abscess are common presentation of biliary ascariasis. ERCP and surgical procedure are needed for biliary ascariasis.⁽²⁾

Sandonk F et al observed that in endemic area, ascariasis should be suspected in patients with pancreatico biliary disease- specially in post cholecystectomy or post sphincterotomy state. Endoscopic management quickly relieves complications. Ascending cholangitis, acute pancreatitis, obstructive jaundice are common presentation.⁽³⁾

Khuru MS et al observed that in ascariasis induced acute pancreatitis, endoscopic management is a great value. In pyogenic cholangitis, endoscopic nasobiliary drainage is a great help to decompress system. At ERCP, worms are extracted from ampullary orifice by Dormia Basket. It rapidly relieves abdominal pain. In biliary ascariasis pancreatitis is mild in 80% cases and severe in 20% cases. Ascaris is found in 80% cases in bile duct, 10% cases in pancreatic duct and 10% cases in both ducts. Biliary ascariasis is common in Kashmir.⁽⁴⁾

Shah OJ et al observed that ascariasis causes 20,000 death per year due to complications in world population. It is more common in endemic area. Due to migration of people this disease is prevalent throughout the world. Post cholecystectomy state is more susceptible to biliary ascariasis.⁽⁵⁾

Osman M et al observed that in biliary ascariasis, USG /CT /MRI are not only for diagnosis but also for follow up and surveillance of cases. ERCP has both diagnostic and therapeutic option. Surgery is needed for complicated cases.⁽⁶⁾

Rana SS et al observed that ascaris invades bile duct through papilla. ERCP has both diagnostic and therapeutic potentials. Biliary tract can be invaded by other parasites (e.g Clorchis sinensis causes intra hepatic stone, recurrent pyogenic cholangitis, cirrhosis, cholelithiasis, pancreatitis, cholangio carcinoma). CT/MRI/USG are useful.⁽⁷⁾

Reddy DN et al observed that ascariasis is common cause of biliary obstruction in developing country. It is very often confused with stone disease. Worldwide increase of biliary ascariasis is noted. Biliary colick or cholangitis are main manifestation. Endoscopic sphincterotomy, bile duct clearance are mainstay of treatment.⁽⁸⁾

Joyce AM et al observed that ERCP have made revolutionary change in biliary tract disease. Ascaris is removed in ERCP from ampulla by Snare and Dormia Basket. Ascaris can cause choledocholithiasis. The bile duct stone can be easily removed by Sphincterotomy and balloon dilatation.⁽⁹⁾

Misra SP et al observed that biliary ascariasis is successfully managed by endoscopic procedure (Round worm removed by Dormia Basket / biliary stent (to decompress biliary system / endoscopic sphincterotomy / albendazole).⁽¹⁰⁾

Method

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Results

Fifty cases of biliary ascariasis in children were admitted. Age was 3-10 years (mean – 6 years). Out of 50 cases, 45 (90%) had abdominal pain, 25(50%) had cholangitis, 15(30%) had jaundice, 50(100%) had vomiting. In ERCP, worms were extracted by snare /dormia basket. Double pigtail plastic biliary stent was deployed in 30(60%)

cases. Nasobiliary drainage was done in 10(20%) cases. IV drip/inj. antibiotic etc. were done. After removable of worms, all of the 50 cases recovered remarkable. There was up and down movement of worms in bile duct and hepatic duct. Non develop cholangitic abscess/hepatic abscess/ hemobilia/hepatobiliary stone in subsequent follow up.

Discussion

Khuru MS et al observed that ascaris induced acute pancreatitis have overall motarility of 3%. Endoscopic naso biliary drainage is useful for pyogenic cholangitis. Ascaris invades ampulla in 30% / bile duct in 60%/ pancreatic duct in 4% cases.⁽¹¹⁾

Khuru MS et al observed that in hepatobiliary pancreatic ascariasis in India, there is acute cholecystitis in 12%, acute cholangitis in 25%, biliary colick in 6%, acute pancreatitis in 7%, hepatic abscess in 0.4%, biliary ascariasis in 34%, bile duct / intrahepatic duct dead worm in 1.2%, duodenum ascariasis in 54%. Dead worms are extracted by endoscopic procedure/surgery.⁽¹²⁾

We had abdominal pain in 45(90%), cholangitis in 25(50%), jaundice in 15(30%), vomiting in 50(100%).

Das C.J et al observed that USG showed ascaris intertwined into abolus – causing intestinal obstruction / volvulus / perforation.

Ascaris in gall bladder / bile duct/ pancreatic duct are manifested by biliary colick, GB stone, cholecystitis, pyogenic cholangitis, liver abscess, pancreatitis.⁽¹³⁾

Leung JW et al observed that endoscopic worm extraction from pancreatic duct was difficult. Cholangitis can be treated by endoscopic worm extraction with or without sphincterotomy.⁽¹⁴⁾

Iscan M et al observed that biliary ascariasis can cause cholangitis, pancreatitis, even bile duct perforation.⁽¹⁵⁾

We did CBD stenting in ERCP in 30(60%) cases. In rest 20(40%) cases worms were removed from ampulla by snare.

Janid G et al observed that GB ascariasis is a significant entity in endemic area – though it is

less common than CBD ascariasis. It requires lap cholecystectomy. Spontenous expulsion of worm from GB is rare.⁽¹⁶⁾

Chakraborty I et al observed that in ascaris induced liver abscess – FNAC from liver abscess showed fertilized eggs. They responded well to conservative management.⁽¹⁷⁾

We didn't have cholangitic abscess.

Z Mazid et al noticed that invasion of ascaris in cystic duct is an uncommon problem.

They noticed multiple linear echogenic foci in distal small intestine – along with GB stone / thick walled GB / single stone compressing CBD (Mirrizi syndrome).⁽¹⁸⁾

M.Klimovshij et al observed slightly dialated CBD without filling defect in ascariasis in pancreatic duct. They removed ascaris from pancreatic duct. Levamisole was given orally and repeated after 7days.⁽¹⁹⁾

Mukhopadhy M et al observed that there was 7% recurrence of biliary ascariasis after successful treatment. It is more common in post cholecystectomy/ post sphincterotomy state.⁽²⁰⁾

We got multiple worms in all 50(100%) cases – 20 (40%) was linear and 30(60%) were coiled.

Schulmn A et al observed that hepato biliary ascariasis causes intrahepatic calculi – which are evenly distributed in both lobes of liver which were clinically silent. Small number of intrahepatic stone are associated with GB stone.⁽²¹⁾

We did not get biliary stone due to ascaris.

Maddern G et al observed that ascaris pancreatitis is rare in west. It is a non indigenous cause of biliary tract obstruction.⁽²²⁾

We did not have ascaris induce pancreatitis.

Khuru MS et al observed that GB ascariasis is rare (1%).

Sonographic findings include non shadowing , long echogenic strip with central echogenic structure extending across GB giving separate appearance and characteristic irratic zigzag multi directional movement of echogenic structure in GB.

In our study we did not have GB ascariasis.

Real time sonography is a simple rapid approach for diagnosis and follow up patients with biliary ascariasis. ERCP has limited diagnostic value but immense therapeutic scope.⁽²³⁾

Coll P et al observed an unusual cause of haemobilia in a case of biliary ascariasis. Angiography shows left hepatic artery aneurysm which was successfully embolised.⁽²⁴⁾

Lloyd DA et al observed that massive infestation of ascaris in bile duct or liver is uncommon but one or two ascaris migrating in bile duct is common.⁽²⁵⁾

Braga LH et al observed that a case of biliary ascariasis in previously operated six year old girl who had biliary digestive tract surgery by Roux-en-y hepatico Jejunostomy for choledochal cyst. After biliary tract surgery, biliary ascariasis can happen in endemic area where ascariasis is highly prevalent.⁽²⁶⁾

We did not have any case of previous biliary tract surgery.

Jessen K et al observed that urgent ERCP/ endoscopic decompression is needed in ascaris induced acute obstructive cholangitis. Obstructive jaundice, cholangitis, liver abscess is secondary to biliary ascariasis.⁽²⁷⁾

In our study CBD stenting was done in 30(60%) cases.

In biliary ascariasis, biliary cholic obstructive jaundice, acalculous cholecystitis, choledocholithiasis, pancreatitis, cholangitis are common. Pancreatitis is less common. Endoscopic management is very much effective.⁽²⁸⁾

Gonzalez AH et al observed that biliary ascariasis should be initially managed by IV fluid/ antispasmodic/ albendazole. Those who have persistent symptoms and hyper amylasemia underwent duodenoscopy and extraction of residual worms by snare.

14% cases have invasion of ampulla. These worms are removed without sphincterotomy. Invasive method of sphincterotomy and surgery should be reserved to those who failed in conservative regime.⁽²⁹⁾

SA Zargar et al observed that endoscopic sphincterotomy is often not needed because of patulous ampulla in biliary ascariasis. Presentation of one or two worms in papillary orifice facilitate and guide the advancement of canula basket or mesobiliary tube.

Worms being soft, compressible linear structure can be easily retrieved through intact papilla. Apart from mortality and morbidity associated with sphincterotomy, wider papillary orifice predisposes to recurrent worm invasion in an endemic area.⁽³⁰⁾

Sphincterotomy is not needed in our 50 cases.

Conclusion

Biliary ascariasis is a serious problem in children. Endoscopic management is very much fruitful. Early diagnosis and management is essential for survival of the children.

Conflict of interest – Nil

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