

# Diagnostic Yields of ERCP: First Study of Previously Unexamined Population of Southeastern Part of Bangladesh

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## Abstract

**Objective:** The objective of the study is to evaluate the diagnostic yields of endoscopic retrograde cholangiopancreatography (ERCP) done on previously unexamined section of Bangladeshi population having suspected hepatobiliary and pancreatic diseases. **Methods:** Patients were selected retrospectively having suspected hepatobiliary and pancreatic diseases with characteristic findings of clinical, laboratory and imaging examinations. ERCP was performed using Pentax Duodenoscope (ED 3440T), Siemens (Siremobil Compact) fluoroscope and Microvasive accessories following standard guidelines. **Results:** Six hundred and thirty-five patients were suspected to have hepatobiliary and pancreatic diseases during the last 5-year period. All patients had undergone ERCP which revealed 25.2% having choledocholithiasis and 24.2% having biliary ascariasis. Interestingly, both of these diseases were found in more than 73% of female patients. **Conclusion:** This first report of ERCP on previously unexamined population of southeastern part of Bangladesh showed high incidences of choledocholithiasis and biliary ascariasis in predominantly female patients. High association of biliary ascariasis with choledocholithiasis in female patients might further be evaluated. **Key words:** ERCP; Diagnostic yields; Bangladeshi population.

## INTRODUCTION

Endoscopic retrograde cholangiopancreatography (ERCP) is an established diagnostic and therapeutic procedure of highest yield in hepatobiliary and pancreatic ductal diseases.<sup>1,2</sup> The developing country like Bangladesh cannot routinely offer such an essential service of ERCP to its vast patient population because of its expensive instrumental set-up and of scarcity of skilled personnels. However, we were able to introduce a full-fledged ERCP unit in our Bangabandhu Memorial Hospital since April 2004 and to investigate a previously unexamined section of population having suspected hepatobiliary and pancreatic diseases in southeastern part of Bangladesh. We first report here the diagnostic yields of ERCP in this patient population.

## PATIENTS AND METHODS

The study period was from April 2004 to September 2008. Patients were selected retrospectively having suspected hepatobiliary and pancreatic diseases with the characteristic features of clinical, laboratory and imaging examinations. All the procedures of ERCP were done by Dr M Yousuf. ERCP was performed with Pentax

Duodenoscope (ED 3440T), Siemens (Siremobil Compact) Fluroscope and Microvasive accessories. The standard guidelines were followed for both pre- and post-procedural measures. The routine disinfection of the instruments and accessories was done with Cidex (Activated Glutaraldehyde Solution).

## RESULTS

A total of 635 consecutive patients were suspected to have hepatobiliary and pancreatic diseases. There were 187 male and 448 female patients with age range of 3–85 years. The patients were presented with abdominal pain (66.1%), back pain (23.6 %) and vomiting (22.9%). Fever was present in 28.0% and jaundice in 29.9% of the patients. Abdominal ultrasonography revealed positive findings of stone, worm, obstruction, etc., in hepatobiliary and pancreatic ducts in 88.7% of the patients.

Of 635 patients undergone ERCP, only 79 (12.4%) were found to have normal findings. While choledocholithiasis was found in 160 (25.2%) and biliary ascariasis was found in 154 (24.2%) of patients. Moreover, of the total choledocholithiasis patients, 118 (73.5%) and of the total biliary ascariasis patients, 131 (85.5%) were found in female patients. The results of other pancreaticobiliary diseases are mentioned in Table 1.

**Table 1:** Diagnostic yields of patients undergone ERCP

Diagnostic outcome	Number of patients	Percentage
Normal	79	12.4%
Choledocholithiasis	160	25.2%
Biliary ascariasis	154	24.2%
Pancreatic ascariasis	3	0.5%
Biliary ascariasis and choledocholithiasis	27	4.2%
Chronic pancreatitis with pancreatic calculi	19	2.9%
Cholangio-carcinoma	41	6.4%
Papillary carcinoma	44	6.9%
Ca head of pancreas	7	1.0%

## DISCUSSION

In 1968, ERCP was first described as a direct contrast study of the biliary and pancreatic ductal systems.<sup>1</sup> It is useful in diagnosis of pancreaticobiliary diseases and includes stones,

benign and malignant strictures and anomalies.<sup>2,3</sup> In presence of obstructive jaundice, ERCP is superior to indirect cholangiography because it is independent of hepatic function.

For many years, ERCP was the gold standard of investigating biliary and pancreatic disorders, but with the advent of CT and MR scanning, the need for diagnostic ERCP has diminished. ERCP is still extremely useful in the diagnosis of patients with gallstones, sclerosing cholangitis and biliary tumor where scanning is normal or equivocal, in the absence of overt jaundice. Diagnostic ERCP is still useful in the assessment of patients with pancreatitis, congenital abnormalities and in some patients with a pancreatic mass on scanning where diagnosis is not clear.

Although a developing country like Bangladesh could rarely afford to establish a full-fledged ERCP unit due to its expensive instruments and also due to lack of skilled personnels, we were able to set up and perform ERCP in our hospital since April 2004. We studied a section of population with suspected pancreaticobiliary diseases, which was not previously examined with ERCP, in southeastern part of Bangladesh.

Interestingly, ERCP was indicated almost three times more in female than male patients in our study. Patients with a wide range of ages from the minimum of 5 years to the maximum of 85 years were included in the study. Majority of paediatric patients were found to have biliary ascariasis.

High incidences of choledocholithiasis and biliary ascariasis were found in predominantly female patients in our study. Ascariasis is the most common of intestinal helminthiasis affecting a quarter of world's population. Prevalence is high where there is poor hygiene and sanitation or where human feces are used as fertilizer. Heavy infection is most common in children. Ascaris infection is particularly common in the Far East, India and South Africa.<sup>4</sup> In Bangladesh, different investigators have reported ascariasis prevalence rates differently, ranging from 65% to 92% in rural children and 40% to 66% in urban children. Men are affected more than women possibly due to a greater exposure. Illiterates and poor having no health education, who walk barefooted, and those defecating outside in the field are subjected to infection. Men in certain occupation, e.g., agricultural laborers, farmers, miners, tea planters, etc., bear high risk.<sup>5</sup> But the very high incidence of biliary ascariasis in female patients in our study contradicts the male predominance in general ascariasis reported earlier.

Similarly, choledocholithiasis was found predominantly in female patients in our study. It is already shown that stones in intrahepatic bile ducts are particularly common in certain

parts of the world such as the Far East and Brazil where they are associated with parasitic infestation. In biliary ascariasis, the adult worm may lodge in common bile duct (CBD) producing partial bile duct obstruction and secondary cholangitic abscess. The ascaris may be a nucleus for intrahepatic gallstones.<sup>6,7</sup> High incidence of choledocholithiasis in our study might be explained with high association of biliary ascariasis in our patients.

However, the results of other diseases like chronic pancreatitis, cholangiocarcinoma, pancreatic carcinoma, etc., revealed no obvious significance.

In conclusion, we found high incidences of choledocholithiasis and biliary ascariasis on ERCP in predominantly female patients in previously unexamined section of population of southeastern part of Bangladesh. High association of biliary ascariasis with choledocholithiasis in female patients might further be evaluated.

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