

**Complications of ERCP (Cholangiopancreatography) in 40 patients
underwent ERCP for various diagnostic and therapeutic indications- A
prospective study**

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ABSTARCT

Background and Objectives: Endoscopic Retrograde Cholangiopancreatography (ERCP) is a minimal invasive procedure that combines upper gastrointestinal side viewing endoscope and fluoroscopy to diagnosis and treatment of common bile duct and pancreatic duct pathology. Along with usefulness of ERCP it is also associated with its own complications. The study aim was the various complications encountered during and post ERCP period. **Material and method:** Here collected data of 40 patients underwent ERCP for various diagnostic and therapeutic indications in our hospital for duration of three years, February 2011 to January 2014. We had collected data regarding complications during and Post ERCP period like acute Pancreatitis, duodenal and bile duct perforations, hemorrhage, cholangitis, retained common bile duct stent and cardio-respiratory complications. We had followed patient up to 3 months of post ERCP. We had also collected data regarding the prognosis and management of Post ERCP Complications. **Results:** In our study out of 40 patients, acute pancreatitis was the most common post ERCP complication (ten patients) and Cholangitis was the second most common complication (four patients). We also observed that three patients had intra operative bleeding, two patients had post ERCP cardiac complication, two patients had retained common bile duct stent, and mortality of one patient. **Conclusion:** Although ERCP and related procedures are minimal invasive, it associated significant complications, so post ERCP monitoring and early recognition and management of complication are mandatory to decrease the morbidity and mortality

Key words: Acute pancreatitis, Cholangiopancreatography (ERCP), complication of ERCP, Cholangitis

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INTRODUCTION

Endoscopic Retrograde Cholangiopancreatography (ERCP) is a minimal invasive procedure that combines upper gastrointestinal side viewing endoscope and fluoroscopy to diagnosis and treatment of common bile duct and pancreatic duct pathology¹.

ERCP has a therapeutic role in management of various Biliary and pancreatic diseases like CBD Stone, Biliary Stricture, Obstructive Jaundice, Periampullary Malignancy, etc^{2,3}. Along with usefulness of ERCP it is also associated with its own complications like acute Pancreatitis, Hemorrhage, duodenal Perforation, Cholangitis and Cardio-Respiratory complications⁴.

MATERIAL AND METHODS

Here collected data of 40 patients underwent ERCP for various diagnostic and

therapeutic indications in our hospital for duration of three years February 2011 to January 2014. We had collected data regarding Post ERCP acute Pancreatitis, duodenal and bile duct perforations, hemorrhage, cholangitis, retained common bile duct stent and cardio-respiratory complications.

Preoperative preparation of all 40 patients had 6 hours nil by mouth with normal coagulation profile (PT < 20 sec, INR < 2), adequate preoperative fitness and 1gm of Ceftriaxone injection used as a antibiotic prophylaxis^{5,6}. We had used approximately 5 to 25 ml of diluted contrast agent (Sodium Diatrizoate Meglumine) for evaluation of biliary system. We had followed patient up to 3 months of post ERCP. We had also collected data regarding the prognosis and management of Post ERCP Complications.

RESULTS:

We had mentioned the various complications which were encountered in our study in Table 1.

Table 1: Complications of ERCP in Our Study

Complications	Total number of patient (n= 40)
ACUTE Pancreatitis	10 (25%) [p<0.001]
Hemorrhage	3
Cholangitis	4 (10%)
Duodenal Perforation	0
Retained CBD Stent	2
Cardio-Respiratory complications	2
Mortality	1

DISCUSSION

ERCP is a minimal invasive procedure used for diagnosis and treatment of various biliary and pancreatic diseases. For therapeutic use, along with ERCP we can perform sphinctrotomy, CBD stone Retrieval Basket, Lithotripsy and CBD Stent for CBD stone. ERCP Brush Biopsy for diagnosis of cholangiocarcinoma and pancreatic malignancy involving head. Metallic CBD stent and pancreatic stent for palliative treatment of malignant cause of obstructive jaundice. Radio contrast Agent with fluoroscopy to delineate the Biliary and Pancreatic Duct system and various pathology. Although, ERCP is minimally invasive and cost-effective compared to

conventional open surgical methods, It's associated with its own complications⁷.

Acute Pancreatitis: In our study, we observed that the pancreatitis is the most common Post ERCP Complication^{8,9}, as out of 40 patients, 10 patients had post ERCP acute pancreatitis. We also observed that the post ERCP acute pancreatitis present within 24 TO 48 hrs of ERCP with complain of abdominal pain , vomiting and raised serum Amylase and lipase level¹⁰. We managed all patients conservatively and the pancreatitis subsides within 6 to 7 days.

Acute Cholangitis : We observed cholangitis is the second most post ERCP complication (4 out of 40 patients). Patient usually presented after 3 to 4 days of Post

ERCP with Fever, Nausea, and Generalized Malaise and Abdominal pain with Raised leukocyte count¹¹. All four patients managed with injectable antibiotics and supportive care.

Retained CBD Stent: In our study, there were 2 patients in which CBD stent was broken during the removal of CBD stent and part of CBD stent retained within the CBD, which was inserted for post ERCP CBD stone Retrieval¹². Out of two patients, in first patient we had performed ERCP and part of the CBD stent removed using loop and second patient underwent open CBD exploration and CBD stent removal.

Duodenal Perforation^{13,14}: We had no complication regarding the duodenal perforation. But it can occur during spinctrotomy.

Cardio respiratory Complications & Mortality: We observed only 2 patients had cardiac complications. The patient which had acute cardiac failure on the second postoperative day was managed in

Intensive Care Unit and recovered uneventfully and a patient which had Post ERCP Myocardial Infarction was recognized by Chest pain and ECG changes on the day of ERCP¹⁵. Even after adequate treatment in Intensive Cardiac Care Unit, was expired on 3rd post ERCP day

Intra operative Hemorrhage: Out of 40 patients underwent ERCP; three Patients had significant bleeding after sphinctrotomy during ERCP^{16,17}. All three patients underwent ERCP for Palliative metallic CBD stenting for obstructive jaundice due to Carcinoma Head of Pancreas.

CONCLUSION

Although ERCP and related procedures are minimal invasive, it associated significant complications, so Post ERCP early recognition and management of complication are important to decrease the morbidity and mortality.

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