



STUDY OF ANOMALOUS INSERTION OF CYSTIC DUCT IN MAGNETIC RESONANCE CHOLANGIOPANCREATOGRAPHY

Radio-Diagnosis

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ABSTRACT

Knowledge of anatomical variations of cystic duct insertion are important prior to any invasive procedure. Aims and Objectives: To study normal anatomy of cystic duct and its anomalous insertion using MRCP imaging and to compare the variations of cystic duct anatomy with clinical outcome. Materials and Methods: After getting institutional ethical clearance, the study was done within 1 year of time in KPC Medical College and Hospital. Patient who came to the radiology department for MRCP were followed up. Their imaging slides were studied as well as their surgical outcomes were tabulated. Results: We studied total 150 patients. Among them, normal insertion of cystic ducts was in 100 cases. High up insertion of cystic duct was in 30 cases and low insertion of cystic duct in 20 cases. Conclusion: The findings denote that pre-operative MRCP is important to avoid injury during surgery. The knowledge of cystic duct insertion helps to rule out inappropriate intervention.

KEYWORDS

Cystic duct, Variation, MRCP

INTRODUCTION

In extra-hepatic biliary apparatus, cystic duct from gall bladder inserts into common hepatic duct to form common bile duct (CBD). CBD drains into second part of duodenum at ampulla of Vater along with pancreatic duct. Knowing the variations of cystic duct insertion is important to prevent damage to bile duct during laparoscopic cholecystectomy.¹ Variations in the insertion of cystic duct is common and Magnetic Resonance Cholangiopancreatography (MRCP) is an effective investigation before laparoscopic cholecystectomy.² During pre-operative check up, MRCP imaging is important to rule out any anomalous insertion of cystic duct to avoid bile duct injury.³

AIMS AND OBJECTIVES

1. To study normal anatomy of cystic duct and its anomalous insertion using MRCP imaging.
2. To compare the variations of cystic duct anatomy with clinical outcome.

MATERIALS AND METHODS

After getting institutional ethical clearance, the study was done within 1 year of time (1st Jan, 2022 – 31st Dec, 2022) in KPC Medical College and Hospital. Patient who came to the radiology department for MRCP were followed up. Their imaging slides were studied as well as their surgical outcomes were tabulated. Statistical analysis was done by SPSS method.

RESULT

We studied total 150 patients. Among them, normal insertion of cystic ducts was in 100 cases. High up insertion of cystic duct was in 30 cases and low insertion of cystic duct in 20 cases.

Table 1 Showing Proportions And P Value Of Mode Of Intervention.

Mode of Intervention	n= 150	Proportions	P value
ERCP	40	0.267	0.637
Laparoscopic Cholecystectomy	40	0.267	0.637
Open Cholecystectomy	10	0.066	0.00001
Medical Management	60	0.4	0.00001

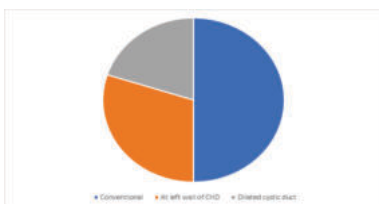


Figure 1 showing Pie diagram representing 50% conventional insertion of cystic duct, 30% insertion of cystic duct at left wall of

Common Hepatic Duct and 20% cases of dilated cystic ducts.

Among 150 cases, we found 3 cases of pancreatic divisum (4.5%) associated with the cystic duct anomaly.



Figure 1: Pancreatic Divisum



Figure2: Cystic Duct Open At Left Wall Of Common Hepatic Duct

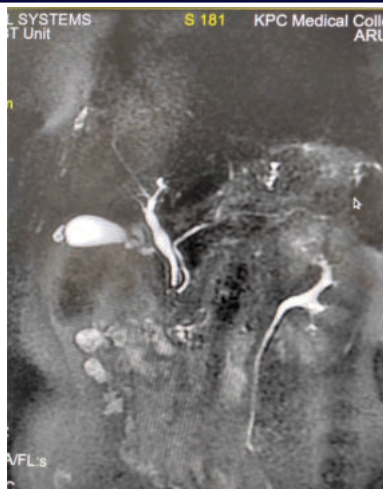


Figure3: Low Insertion Of Cystic Duct

DISCUSSION

Similar study was done by I Ishaque et al⁴ and they found that the most observed variation was low insertion of cystic duct. S Garg et al⁵ found in their study that cystic duct insertion to left of bile duct in 13% cases. In our study, among normal insertion of cystic duct, we found 30% insertion at left wall of CHD.

I Ishaque et al⁶ and N Kumar et al⁷ did similar study and found congenital anomalies of the gallbladder 94 out of 377 cases and 3 out of 102 patients respectively.

Gupta A et al⁸ found that patient with recurrent acute pancreatitis had pancreatic divisum whereas in our study we found only 3 cases of pancreatic divisum among 150 cases.

Uetsuji S et al⁹ found that the anomalous insertion of cystic duct to common hepatic duct may result in stagnation. Sarawagi R et al¹ said that in one case, cystic duct was draining into right hepatic duct.

Gundiz N¹⁰ found 80.7% cases with low medial insertion whereas in our study we found low insertion of cystic duct in 20 cases among total 150 patients (13.3% cases).

CONCLUSION

The findings denote that pre-operative MRCP is important to avoid injury during surgery. The knowledge of cystic duct insertion helps to rule out inappropriate intervention.

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