

# Diagnostic Findings and ERCP Treatment in Patients with Obstructive Jaundice During Two Years at H. Adam Malik Hospital, Medan

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## ABSTRACT

*Background:* The methods of ERCP have been used for diagnostic and therapeutic purposes to pass bile fluid and extract stones from the bile duct in patients with obstructive extrahepatic jaundice.

*Method:* A retrospective study was performed on patients with obstructive extrahepatic jaundice patients who underwent ERCP during a two-years time period from January 1999 to December 2000. ERCP was performed with a premedication of 10 mg midazolam, followed by a cholangiography contrast containing 1 mg/dl of Garamicin and 25 mg of Pethidine if sphincterotomy was performed.

*Results:* From 126 patients with obstructive extrahepatic jaundice treated with ERCP, the male to female ratio was 1.86:1. The majority of the (group) of patients were between 51-60 years of age (33.3 %). The youngest patient (group) was 24 years and the oldest 97 years. The diagnostic study found the following cases: normal 3 cases (2.8%), bile duct stone 46 cases (43.4%), carcinoma of ampula vater 20 cases (18.9%), CBD tumor 7 cases (6.6%), carcinoma of head of pancreas 2 cases (1.9%), diverticle 4 cases (3.8%), duodenal tumor 1 case (0.9%), carcinoma of ampula vater and bile duct stone 1 case (0.9%), SOD 5 cases (4.7%), CBD stricture 1 case (0.9%) and failure 16 cases (15.1%). The patients received the following treatment: sphincterotomy 36 cases (51.4%), stent application 11 cases (15.7%), sphincterotomy with stent 18 cases (25.7%) and basket method 5 cases (7.1%).

*Keywords:* ERCP, obstructive jaundice.

## INTRODUCTION

The first report of the use of endoscopic canules on the ampula of vater to visualize the biliary branch and pancreatic duct was in 1968. In 1970, endoscopic retrograde cholangio-pancreatography (ERCP) had been accepted as a method to diagnose biliary and pancreatic disorders.<sup>1,2</sup>

ERCP is an examination that aims to visualize and directly see the efferent bile ducts and pancreatic ducts through retrograde use of a contrast agent and a lateral view endoscopy.<sup>1-5</sup>

Obstructive jaundice is often caused by bile duct stone and bile duct malignancy such as bile duct carcinoma, cholangio-carcinoma, carcinoma of the ampula vater, and tumor of the head of pancreas.<sup>1,2,4</sup>

ERCP procedure has been used as a diagnostic and therapeutic to allow bile fluid to flow and to remove bile duct stones in patients with extra-hepatic obstructive jaundice.<sup>3,5</sup>

## MATERIALS AND METHOD

The study was performed as retrospectively by review of the medical records of patients that went through ERCP at the H. Adam Malik Public General Hospital from January 1st, 1999 to December 31st, 2000.

Informed consent was obtained from the patients and their families prior to ERCP, after the aim and benefit of the procedure was explained to the patient. The patient was asked to fast 6 hours prior to the procedure.

ERCP was performed in patients with obstructive jaundice to reveal the cause of obstruction, such as bile duct stone, malignancy (tumor of the ampula of Vater, tumor of the head of pancreas, cholangio-carcinoma), stricture, and other findings.

The procedure was performed under mild sedation by injecting 10 mg of midazolam. ERCP was performed with a lateral view gastroduodenoscopy type TJF 140R inserted into the descending duodenum. After the ampula Vater is seen, a plastic catheter with the same length as the instrument is inserted into the pancreatic duct or common bile duct. The ductal system was then made opaque by injecting a contrast agent containing 1 mg/ml of gamycine under a fluoroscopy monitor. After the contrast agent had been injected into the chosen duct, radiography is performed, since most diseases of the

pancreas and main biliary ducts quickly cause ductal abnormality, this procedure provides an accurate results. Twenty-five milligrams of pethidin is administered for sphincterotomy.

The analysis of the study is portrayed as a descriptive report.

## RESULTS

Out of 126 cases of extra-hepatic obstructive jaundice that underwent ERCP, 82 were male, 44 were female, with a ratio of 65.1 : 34.9. The most common age was within the 51-60 years age range (33.3%) (see Table 1).

The youngest age was 24 years, and the oldest was 97 years. From ERCP, the frequency of the different findings were as follows: normal 3 cases (2,8%), bile duct stone 46 cases (43,4%), tumor ampula Vater 20 cases (18,9%), common bile duct tumor 7 cases (6,6%), Carcinoma of the head of the pancreas 2 cases (1,9%), diverticle 4 cases (3,8%), duodenal tumor 1 case (0,9%), tumor of the ampula of Vater and bile duct stone 1 case (0,9%), SOD 5 cases (4,7%), common bile duct stricture 1 case (0,9%) and unsuccessful cannulation 16 (15,1%) (Figure 1), from which the following ERCP therapeutic procedure was performed: sphincterotomy in 36 cases (51,4%), stent in 11 cases (15,7%), sphincterotomy and stent in 18 cases (25,7%) and basket procedure in 5 cases (7,1%).

**Table 1. Sex and Age Distribution In Patients with Obstructive Jaundice that Underwent ERCP, Januari 1999 S/D Desember 2000, di RSUPH. Adam Malik Medan**

Age	Sex		Frequency	
	Male	Female	N	%
21 - 30	3	0	3	2,4
31 - 40	15	7	22	17,5
41 - 50	17	4	21	16,7
51 - 60	25	17	42	33,3
61 - 70	14	11	25	19,8
> 70	8	5	13	10,3
<b>Frequency</b>	<b>82 (65,1%)</b>	<b>44 (34,9 %)</b>	<b>126</b>	<b>100</b>

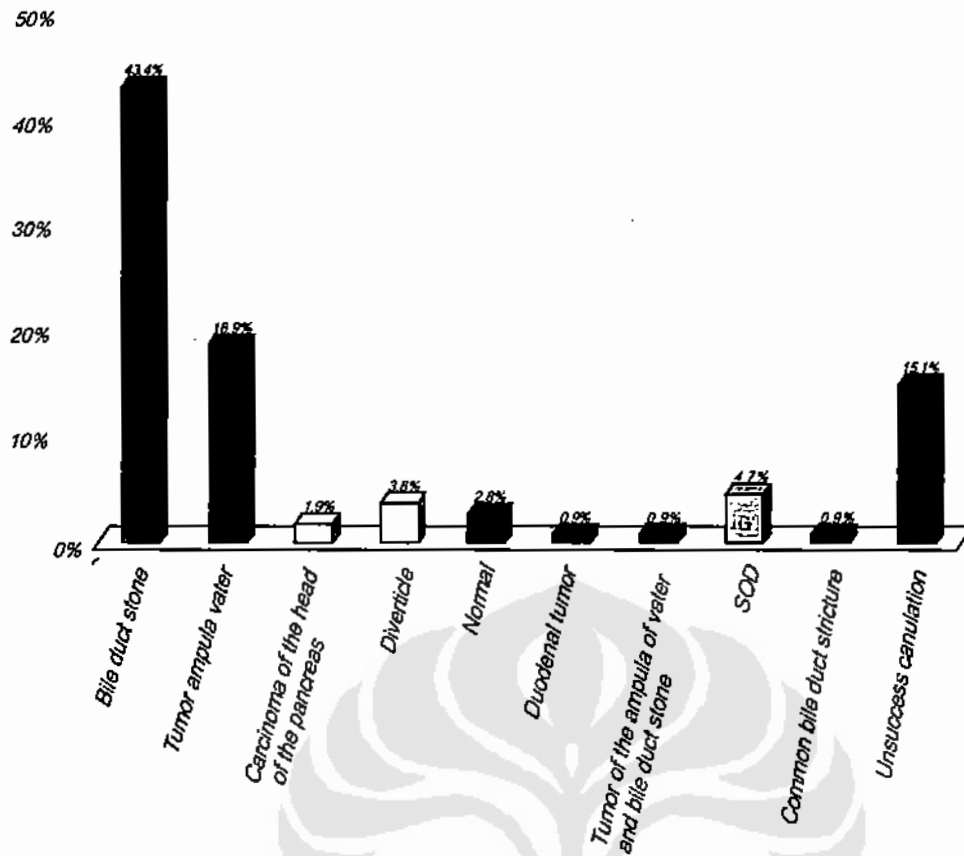


Figure 1. The etiology of obstructive jaundice in patients that underwent ERCP, January 1999 to December 2000, at H. Adam Malik Public General Hospital, Medan.

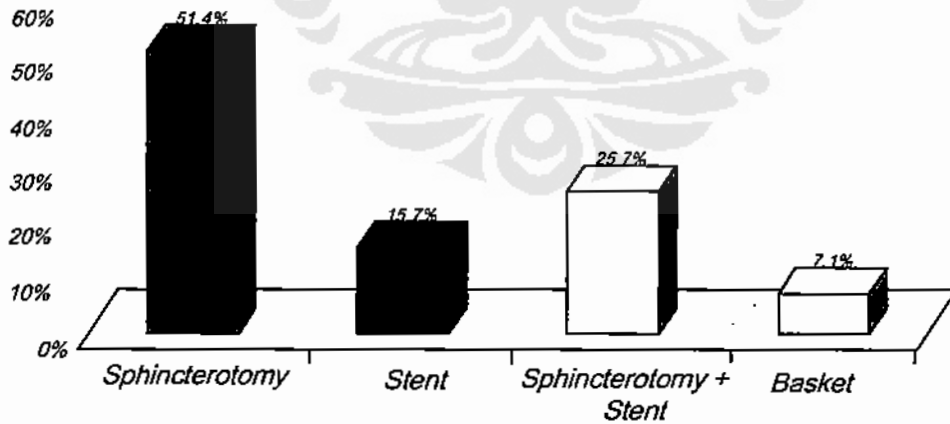


Figure 2. Therapeutic ERCP procedures in patients with extra-hepatic obstructive jaundice.

## DISCUSSION

Twenty to twenty-five percent of patients with bile duct stone suffer from serious complications such as obstruction or cholangitis. Malignancy in the bile ducts, ampulla Vater, and pancreas may also cause obstructive jaundice. Such malignancy include cholangio-carcinoma, tumor of the Vateric ampulla and tumor of the head of pancreas, as well as tumor of the pancreatic gland.<sup>3</sup> In

this study, the cause of obstruction were as follows: bile duct stone (43,4 %), tumor of the ampulla Vater (18,9%), common bile duct tumor (6,6%), SOD (4,7%), diverticle (3,8%), tumor of the head of pancreas (1,9 %), duodenal tumor (0,9%), tumor of the ampulla Vater and bile duct stone (0,9%), and common bile duct stricture (0,9%).

The prevalence of malignancy in the bile duct and

ampulla Vater is 0.01-0.55%, where patients are most commonly in their 70s or 80s, with a female to male ratio of 1-3 : 1-1.5.<sup>3</sup> In this study, the most common age was 51-60 years, with a male to female ratio of 1.86:1.

The insertion of a stent in patients with obstructive jaundice is a method to decompress the bile fluid. This procedure is highly beneficial to let the bile fluid flow in patients with large bile duct stones prior to the operation, also as a palliative procedure in patients with tumor of the biliary system.<sup>1-3,5</sup> In this study, the indication for the insertion of stent was obstructive jaundice due to bile duct stone that could not be removed using ERCP, and as a palliative effort in malignancy. In this study, the frequency of the therapeutic procedures performed was as follows: stent (15,7%), sphincterotomy alone (51,4%), sphincterotomy with stent (25,7%), and removal of stone with basket.<sup>7,1</sup>

#### CONCLUSION

The most common diagnostic entity was bile duct stone, and the most common ERCP procedure performed was sphincterotomy.

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