SHORT REPORT

Percutaneous trans-hepatic biliary drainage: A retrospective study from a tertiary care hospital in Pakistan

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Abstract

This study was conducted to assess the safety of the radiological procedure called percutaneous trans-hepatic biliary drainage (PTBD) performed to drain the obstructed biliary system. A retrospective review of the data of 210 patients, who underwent PTBD from January 2015 to December 2018, was conducted at the Aga Khan University Hospital, Karachi. No post procedure complications were seen in 151(71.9%) patients. Infection was the most common complication seen in 18(8.6%) patients, catheter/stent occlusion or displacement in 14(6.7%), bleeding in 6(2.9%), and prolonged hospital stay (> 5 days) in 21(10%) patients. One hundred and seventy-nine (85.2%) patients showed clinical improvement, 21(10%) died in the hospital, of whom 5(2.3%) died due to PTBD complications and PTBD failed in 10(4.8%) patients.

Keywords: PTBD, Biliary drainage, Pakistan, Retrospective study.

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Introduction

Patients with biliary obstruction often require drainage of their biliary systems for palliative or therapeutic purposes. Drainage of the biliary system can be accomplished through an endoscopic modality like endoscopic ultrasound (EUS) or endoscopic retrograde cholangiopancreatography (ERCP) or radiological drainage like percutaneous trans-hepatic biliary drainage (PTBD) approach. Endoscopic drainage is generally considered the first line approach to drain the biliary system with PTBD as a second line option in cases where the patient is not fit to undergo anaesthesia for endoscopic procedure, where endoscopic procedure has failed or is not available.[1]

Literature review has shown that both approaches are efficacious and safe for biliary decompression in patients with biliary obstruction secondary to malignancy.[2] But the efficacy of PTBD in indications other than malignancy is not widely studied. PTBD involves insertion of cannula into the bile duct in order to facilitate external or internal catheter drainage of the bile contents and is carried out under fluoroscopic guidance.[3] Generally, the main indications of PTBD are endoscopic procedure failure and causes which preclude the use of endoscopic methods, such as high intrahepatic obstruction, prior to surgery, haemodynamic instability or non-availability of endoscopic procedure.

A variety of complications can occur during or after the procedure which includes infection of the biliary system leading to sepsis, bleeding or biliary leakage.[4] Biliary obstruction is a common complication of malignancies of the biliary tract and surrounding structures, as well as benign pathologies.[5] Biliary obstruction secondary to hilar cholangiocarcinoma, the most common biliary tract malignancy and has been shown to reduce morbidity and mortality before curative surgery and for palliation.[6] PTBD has been described as equally efficacious as ERCP, with similar outcomes and complication rates in treating malignant biliary obstruction.[7]

The aim of this study was to determine the safety of PTBD as a drainage option.

Methods and Results

This study was carried out as a retrospective review with data collected at the Section of Gastroenterology, Department of Medicine, Aga Khan University Hospital, Karachi, Pakistan. All patients over the age of 18 years who underwent PTBD from January 2015 to December 2018 were included in the study, with a final sample size of 210.

Patients' data was extracted from the hospital's electronic

Table: Baseline characteristics of the patients included in the study.

Baseline Characteristics		Percentage/ Mean (n = 210)
Age (years)	Mean	56.5
	Range	23-71
Gender	Male	101(48.1%)
	Female	109 (51.9%)
Comorbidity	None	100(47.6%)
	More than one	43(20.5%)
	Diabetes Mellitus	26(12.4%)
	Hypertension	5(2.4%)
	Chronic Liver Disease	1(0.5%)
	Chronic kidney Disease	10(4.8%)

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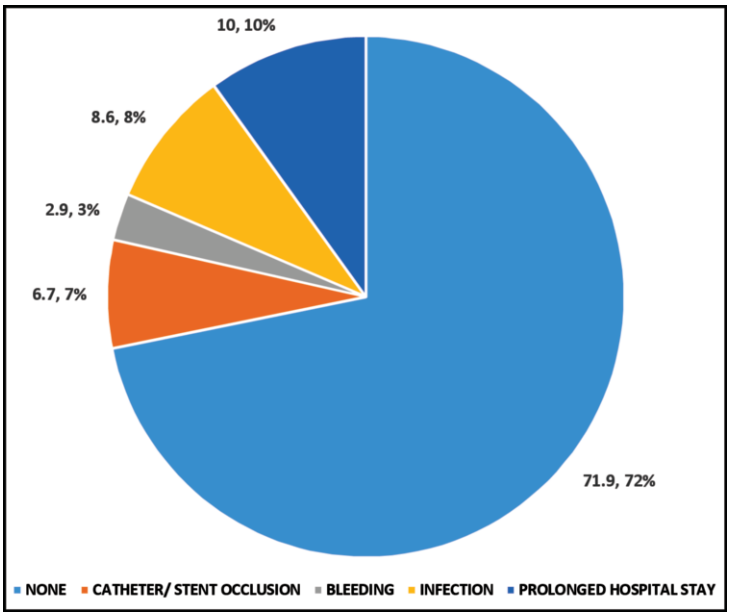

Figure: Post procedure complications.

database and case records, including demographic data, co-morbid conditions, relevant investigation findings, and procedure-specific details. Procedure-specific details included search for prior or concurrent ERCP attempt, other procedure indications, cause of obstruction, immediate and delayed complications, and re-admission within six months. Data was analysed using SPSS version 19. The study was conducted after approval from the Ethical Review Committee of the Aga Khan University Hospital, Karachi. The demographic details of the patients are given in Table.

Cholangiocarcinoma was the most common diagnosis, followed by pancreatic carcinoma. The major indications included haemodynamic instability [75(35.7%)], failed ERCP [73(34.8%)] and high up obstruction [62(29.5%)]. No post procedure complications were seen in 151(71.9%) patients. Infection was the most common complication observed in 18(8.6%) patients who underwent PTBD followed by other complications as shown in Figure.

Among all the patients, 179(85.2%) patients showed clinical improvement; 21(10%) expired in the hospital, of whom 5(2.3%) died due to immediate post PTBD complications, while PTBD failed in 10(4.8%) patients.

Re-admission within six months was required in 47(22.4%) cases. Rendezvous ERCP was performed for 12 (5.7%) patients. Readmission within six months with obstruction was seen in 47(22.4%) patients, requiring re-intervention.

Conclusion

In our study the major indications for PTBD were the patients who were not stable enough to undergo endoscopic drainage under anaesthesia as well as those in whom ERCP was attempted but failed. The complication rate of PTBD was not significantly high given the critical clinical condition of many of the admitted patients. The cause of death in those who expired cannot be directly attributed to the intervention as majority of the patients were at the advanced stage of the disease. We conclude that PTBD was a safe and useful second line modality to relieve obstruction in unstable patients and in cases of ERCP failure. It is important to continue developing technical skills required to carry out PTBD, including training and implementation of the newer ultrasound guided procedure in order to provide patients the best possible care, especially in places where, due to limited resources, advanced endoscopic procedures are not available.

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Conflict of Interest: None.

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