PREDICTORS OF SUCCESSFUL PERCUTANEOUS BILIARY DRAINAGE FOR INCURABLE MALIGNANT BILIARY OBSTRUCTION

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Introduction

Patients with periampullary and liver neoplasms in the course of their diseases frequently develop jaundice that cannot be relieved endoscopically or surgically. The goal of palliative treatment is effective biliary decompression to relieve complications of hiperbilirubinemia. Percutaneous transhepatic biliary drainage (PTBD) as palliative procedure may be applied alongside endoscopic retrograde cholangiopancreatography (ERCP) in poor prognosis patients with malignant obstructive jaundice caused by unresectable cancers or metastatic lesions.

Purpose

The purpose of this study was to determine predictive factors for technical success of percutaneous transhepatic biliary drainage in patients with obstructive jaundice and life expectancy of less than 6 months in whom other interventions (surgery, endoscopy) were precluded or failed.

Material and Methods

A total of 131 patients underwent PTBD due to obstructive jaundice caused by end-stage unresectable malignancy between August 2008 and December 2013. There were 77 males and 54 females with a median age of 64 years (range 23 to 88). The percutaneous route of biliary drainage was selected due to unsuccessful previous endoscopic drainage (44%) or inability to perform endoscopy due to anatomic conditions (previous Roux-en-Y surgery n=37%, duodenal stenosis n=19%). The median hospital stay was 5 days (interquartile range (IQR) 2-6 days).

Technical success of PTBD was defined as an insertion of the drainage catheter into the biliary tree confirmed by cholangiography. PTBD was considered to be clinically successful if the volume of biliary drainage within the initial 24 hours after the procedure was at least 100 ml.

Results

There were 178 procedures. Technically successful drainage was achieved in 148 (83%) procedures, while in 136 (76%) cases the volume of drained bile exceeded 100 ml denoting clinical success.

For both efficacy end-points the largest diameter of intrabiliary bile ducts was the only factor relevant for successful drainage. The overall odds ratio for technical and clinical success as a function of bile duct diameter were 1.141 (P<0.001) and 1.120 (P<0.001), respectively. The diameter of 8 mm of the duct targeted for puncture was the best cut-off value discriminating between successful and failed drainage.

The overall morbidity rate was 7%. The most common complication (n=8) was cardiopulmonary failure related to the poor performance status prior to the procedure. Major complications were observed in 8 patients (4.5%). Two patients (1.1%) developed abdominal bleeding requiring emergency laparotomy. Five patients (2.8%) died after PTBD due to progressive hepatic failure and the hepato-renal syndrome.

Conclusions

Percutaneous transhepatic biliary drainage can be effectively used to relieve malignant bile duct obstruction when endoscopic drainage is not feasible. Ultrasound assessment of the biliary tree diameter is a reliable method to predict efficiency of PTBD. Survival does not differ in patients with successful and unsuccessful drainage.