



Introduction

1. PTBD is an invasive and effective therapeutic method of relieving benign or malignant biliary obstruction and may be life saving if the patient is septic.
2. The drainage is achieved by inserting a plastic tube, called a catheter, through a tiny incision of the skin into the obstructed bile duct.
3. The cholangiogram performed in the same setting also helps to define the anatomy and identify pathology/abnormality, which are important for planning treatment.
4. Technical successful rate ranges from 90-95% in dilated system to 70% in non-dilated systems.
5. Subsequent internalization (either internal/external drainage or internal drainage by stenting on another day, usually days or weeks after the initial PTBD) of the PTBD facilitates internal drainage of bile, which is useful for digestion and therefore reduces the loss of fluid and electrolytes. If the PTBD is entirely internalized by stenting, this may eliminate the inconvenience of carrying an external tube on the abdominal wall.

The Operation / Procedure

1. The procedure will be performed under local anaesthesia and aseptic technique.
2. Your vital signs (your blood pressure, pulse and oxygenation status) will be monitored throughout the entire procedure.
3. A fine needle is inserted (usually on right side of trunk aiming for right intrahepatic ducts and at the left upper abdomen aiming for left intrahepatic ducts) under either image guidance into an intrahepatic duct. A guidewire is then inserted through the needle into the biliary system. Plastic dilators of various sizes will be passed over the guidewire to dilate the tract appropriately.
4. Eventually a plastic catheter with multiple side holes is directed into the biliary system along the dilated tract and the guide wire is finally withdrawn. The position of the catheter is checked by injecting contrast into the catheter.
5. The catheter is secured at the skin insertion site.
6. Internalization of the PTBD catheter is usually performed days or weeks after the initial PTBD. Radiologist will try to pass a guidewire along the initial PTBD pathway into the duodenum/small bowel and the guidewire is subsequently exchanged for a longer catheter.
7. The position of the catheter is again checked by contrast injection via the catheter.
8. To promote internalization, the track will be further dilated and biliary stent of appropriate size and shape will be deployed across the biliary obstruction. You may still have an external catheter for one to a few days. This catheter will be removed if the internal drainage through the stent is satisfactory.
9. After the procedure, you should stay in bed for a few hours and your vital signs will be monitored.
10. Average duration for the procedure will be about 45 to 90 minutes depending on the complexity.

Before the Operation / Procedure

1. A written consent is required.
2. Inform medical staff before the examination if female patient is or may be pregnant as the examination involves high dose of X-ray that is harmful to a foetus. Pregnancy test may be necessary in case of any doubt if the examination is to be proceed.
3. Inform doctor of history of allergy to food and drugs, and in particular any previous reaction to contrast medium, asthma, urticarial, eczema and allergy rhinitis etc. Oral or intravenous steroid premedication may be needed before injection of contrast medium.
4. Keep fasting for 4 hours prior to the examination.
5. For diabetic patients on Metformin medication, patient should inform medical staff before examination.
6. Check clotting profile for any bleeding tendency, to be corrected if abnormality detected.
7. Appropriate antibiotics will be given to the patient before and after the procedure.
8. Set up venous access.



Risk and Complication

1. Infection of the bile ducts (cholangitis), bile leakage, catheter dislodgment and wound infection (overall 40-50%).
2. Hemobilia (bleeding into biliary system) (2.5%) and sepsis (2.5%).
3. Injury to other organs e.g. kidneys and bowel loop (rare).
4. Pneumothorax (collection of air in pleural space -- 0.5%) and bilothorax (collection of bile in pleural space) (rare).
5. Perforation of duodenal diverticulum (rare) (diverticulum seen in up to 6% of barium studies).
6. Death (1.7%).
7. The overall adverse reactions related to iodine-base non-ionic contrast medium is below 0.7%. The mortality due to reaction to non-ionic contrast medium is below 1 in 250000.

Should a complication occur, another life-saving procedure or treatment may be required immediately.

Disclaimer

This leaflet only provides general information pertaining to this operation / procedure. While common risks and complications are described, the list is not exhaustive, and the degree of risk could also vary between patients. Please contact your doctor for detailed information and specific enquiry.

Reference

1. The Hong Kong Society of Interventional Radiology Limited, Patient Information Leaflet: Percutaneous Transhepatic Biliary Drainage (PTBD) & Internalization (2010)
2. Smart Patient Website by Hospital Authority: Percutaneous Transhepatic Cholangiogram / Percutaneous Transhepatic Biliary Drainage / Stent Insertion (2004)