

Percutaneous Transhepatic Biliary Drainage (PTBD) & Internalization

Information for patients

Introduction

- 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.
- The drainage is achieved by inserting a plastic tube, called a catheter, through a tiny incision of the skin into the obstructed bile duct.
- The cholangiogram performed in the same setting also helps to define the anatomy and identify pathology/abnormality, which are important for planning treatment.
- Technical successful rate ranges from 90-95% in dilated system to 70% in non-dilated systems
- 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 procedure will be performed by a radiologist with special training in the Department of Radiology under image guidance.

Procedure

- Performed under local anaesthesia and aseptic technique.
- The vital signs including your blood pressure, pulse and oxygenation status will be monitored throughout the entire procedure.
- 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.
- 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with multiple side holes is directed into the biliary system along the dilated tract and the guide wire is finally withdrawn.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.
- The catheter is secured at the skin insertion site.
- 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.
- The position of the catheter is again checked by contrast injection via the catheter.
- 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.

- After the procedure, you should stay in bed for a few hours and your vital signs will be monitored.
- Average duration for the procedure will be about 45 to 90 minutes depending on the complexity.

Potential complications

- Infection of the bile ducts (cholangitis), bile leakage, catheter dislodgment and wound infection (overall 40-50%).
- Hemobilia (bleeding into biliary system) (2.5%) and sepsis (2.5%).
- Injury to other organs e.g. kidneys and bowel loop – rare.
- Pneumothorax (collection of air in pleural space -- 0.5%) and bilothorax (collection of bile in pleural space) – rare.
- Perforation of duodenal diverticulum – rare. (diverticulum seen in up to 6% of barium studies).
- Death (1.7%).
- 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.

Disclaimer

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