



Procedure Information

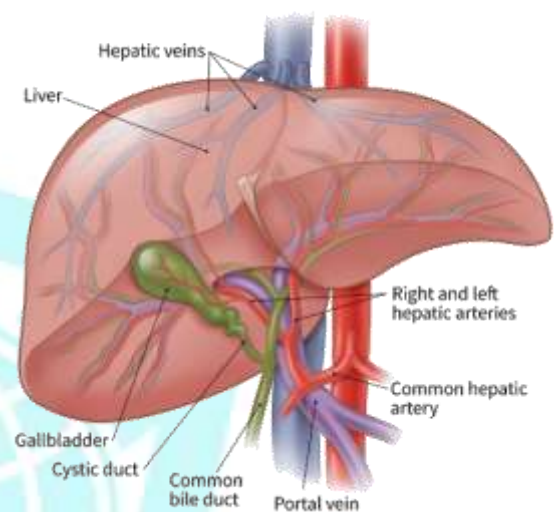
Percutaneous Transhepatic Cholangiogram (PTC) / Percutaneous Transhepatic Biliary Drainage (PTBD) ± Stent Insertion

Introduction

Percutaneous Transhepatic Cholangiogram (PTC) is highly accurate in diagnosing biliary disorders. It involves transhepatic insertion of a needle into a bile duct, followed by injection of contrast material to opacify the bile ducts. PTC also permits a number of therapeutic interventions, including drainage of infected bile, extraction of biliary tract stones, dilation of benign biliary strictures, or placement of a stent across a malignant stricture.

Percutaneous Transhepatic Biliary Drainage (PTBD) is a procedure to drain bile to relieve pressure in the bile ducts caused by a blockage. Bile is drained through a catheter into a collection bag outside the body or/and into the small intestine.

In some cases, a plastic or metallic stent is placed across the biliary stricture to keep the narrowed duct open without the need of a catheter, thus avoiding the inconvenience of an external drainage bag.



Source: <https://www.cancer.org/cancer/liver-cancer/treating/embolization-therapy.html>

PTC is often performed as the initial part of the biliary drainage procedure and provides a view of the bile ducts within the liver and to identify the cause and site of an obstruction.

Indications

1. PTC is indicated for the evaluation of biliary anatomy in the presence of biliary obstruction when endoscopic retrograde cholangiopancreatography (ERCP) is unsuccessful.
2. PTBD ± Stent Insertion is indicated for blockage or narrowing of the biliary drainage of the bile ducts. There are several conditions that may cause this, including: gallstones, pancreatitis, sclerosing cholangitis, tumors of the pancreas, gallbladder, bile duct or liver.
3. PTBD ± Stent Insertion is also indicated for treating post-operative or post-traumatic bile leakage.

Outcomes

It is expected that the biliary disorder is diagnosed, the blockage of the bile flow or leakage of bile is relieved, and any inflammation or other complications due to the obstruction/leakage can be prevented.

Procedures

1. The procedure is performed under local anaesthesia, with intravenous sedation if needed.
2. The procedure is performed under image guidance.
3. A needle followed by a fine plastic tube (catheter) is used to puncture the skin, through the liver and entered into a branch of the bile ducts.
4. Percutaneous Transhepatic Cholangiogram (PTC)
 - i. A contrast medium is injected via the catheter to opacify the biliary tree under fluoroscopy.
 - ii. Region of obstruction is identified.
5. Percutaneous Transhepatic Biliary Drainage (PTBD)
 - i. A drainage catheter is inserted into the biliary tree.
 - ii. The external part of the drainage catheter is connected to a drainage bag for external bile drainage.
 - iii. If the obstruction can be negotiated through, the drainage catheter is placed with its distal end in the duodenum for both external and internal drainage.
6. Stent Insertion
 - i. It may be performed a few days after PTBD, though in cases of uncomplicated PTC, the stent procedure can be accomplished at the same time.
 - ii. A plastic or metallic stent is placed across the biliary stricture for permanent internal drainage, and the catheter is removed.
7. The drainage catheter (if any) is secured to the skin with sutures. The insertion site is protected with a sterile dressing.

Possible Risks and Complications

1. Major complications including sepsis, other severe infection (such as abscess), bile leakage, major blood vessel injury (bleeding), pneumothorax and death occur in 2-10% of patients
2. Bacteremia (0.4%)
3. Major vessel injury causing severe hemobilia (2%)
4. Cholangitis (2%)
5. Pancreatitis, rare
6. Lung injury causing pneumothorax and hemothorax, rare
7. Bile leakage causing skin irritation, peritonitis, or pleuritis
8. Electrolyte depletion
9. Catheter dislodgement
10. Stent occlusion, rare
11. Stent migration or kinking, rare
12. Side effects of contrast
 - Hives, itchy, flu-like symptoms, and other anaphylactic reactions.
 - Steroid cover may be necessary for the patients who have allergic history
 - The overall adverse reaction related to iodine-base non-ionic medium is below 0.7%. The mortality due to the reaction to non-ionic contrast medium is below 1 in 250,000.
13. Routine catheter and stent exchange every 2-3 months is important to prevent catheter occlusion and cholangitis.

** The risks listed above are in general terms and the possibility of complications is not exhaustive. Please understand that even though all procedures are carried out with utmost professionalism and care this does not rule out the possibility of complications arising.

Pre-procedure Preparations

1. The procedure and possible complications will be explained by the doctor and a consent form must be signed prior to the procedure.
2. Please inform the doctor and nurse all your past medical history, previous surgical operations, current medication and any complication with drug or anaesthesia.

3. Several drugs, herbs and supplements which influence coagulation ability should be withheld few days before the procedure.
4. Please inform the doctor and nurse if you are or might be pregnant, or you breastfeed your baby.
5. Blood tests are performed to assess the liver and renal function, complete blood count and coagulation profile. Correction with transfusion of blood products may be needed before the procedure.
6. Steroid may be prescribed for patients with allergic history.
7. No food or drink six hours before the procedure.
8. Good hygiene can prevent wound infection. Please clean up yourself on the day of procedure.
9. Intravenous access is established.
10. Prophylactic antibiotic is administered before the procedure.
11. Please change into a surgical gown after removing all clothing including undergarments, dentures, jewellery and contact lenses.
12. Please empty your bladder before the procedure.

Post-procedure Instructions

1. You are checked often for possible bleeding or leakage from the puncture site, pain and any other abnormality.
2. Please inform the nurses of wound pain. Proper pain relief treatment will be provided.
3. Keep the drainage bag in a position below your waist to prevent bile reflux.
4. Avoid pulling, kinking or bending the drainage tube.
5. Please inform the nursing staff immediately if
 - the connection of the drainage catheter is loosened;
 - the drainage catheter is coming out;
 - bleeding or leakage from the puncture site, abdominal pain or any other concerns.
6. Keep the wound dressing clean and dry.
7. Intravenous infusion is continued. You are encouraged to drink fluid at least 1.5 liters per day if not contraindicated (such as having cardiac or renal condition requires limitation of fluid intake).
8. Bed rest for at least 8 hours.
9. Avoid strenuous activity for 2 weeks after removal of the drainage catheter.
10. Length of hospital stay and length of the drain stay vary. If you are going to be discharged home with the drainage bag, your nurse will tell you how to take care the wound and the drainage system at home.

Should there be any enquiries or concerns, please consult the attending doctor.

Under the professional care of the doctor, you will gradually recover. We wish you all the best during your treatment and recovery.

If you have any questions after reading the entire leaflet, please write them down in the spaces provided in order for the doctor to further follow-up.

Compiled by Union Hospital Operating Theatre (OT) Governance Committee

The above information is for reference only, please enquire your physician for details
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