

The Biliary System

Oral Cholecystography (OC)

Indications:

1. To demonstrate suspected pathology in the gall-bladder.
2. The cystic duct and common bile duct may also be seen.

Contraindications:

1. Severe hepatorenal disease
2. Acute cholecystitis
3. Dehydration
4. An IV choledochogram within the previous week
5. Previous cholecystectomy

Contrast medium:

- ✓ Biloptin
- ✓ Telepaque
- ✓ Cholebrin
- ✓ Solu-Biloptin

Patient preparation:

- Prone 20° LAO preliminary film is taken when appointment is made.
- A laxative 2 days prior to the examination.
- A fat-containing evening meal on the evening prior to the examination.
- The CM is taken with water 14 hours prior to the patient's appointment.
- Food is forbidden until the examination is completed.

Films

1. Prone 20° LAO
2. Supine 20° RPO
3. Erect 20° LAO
4. Fatty meal provided.
Prone 20° LAO 30 minutes after a fatty meal

Additional films:

- Tomography
- If the gall bladder is poorly seen in the first film, the patient is given a second dose of CM and the whole procedure is repeated once again.

After care:

None

Complications:

- Mild gastrointestinal disturbances
- Skin reactions
- Uricosuric action 尿酸排泄
- Impaired renal function
- Pseudoalbuminuria 假蛋白尿
- Abnormal thyroid function tests
- Increased effect of protein-bound drugs because of shared binding with albumen 蛋白素

Pre-operative Cholangiography (IVC)

Indications:

1. When the gall-bladder and ducts have not been visualised by OC
2. Suspected choledocholithiasis
3. In patients who have had a cholecystectomy but who present with symptoms of biliary tract disease

Contraindications:

1. Severe hepatorenal disease
2. OC within previous week

CM:

Biligram; Biligram for infusion

Patient preparation:

- The patient should be well hydrated
- Consent obtained prior to the examination

Preliminary film:

Supine 20° RPO

Technique:

- The patient lies supine
- A bolus injection of 30ml Biligram over at least 5 minutes
- A slow infusion of 100ml Biligram for infusion over 45-60 minutes

Films:

20° RPO or LAO

1. At the end of the infusion
2. Every 15 minutes thereafter until CM reaches the duodenum
3. Erect

After care:

None

Complications:

- Impaired liver function
- Uricosuric action
- Precipitation 凝固 of Bence Jones protein and IgM macroglobulin
- Renal impairment

Operative Cholangiography

Indication:

During cholecystectomy or bile duct surgery, to avoid surgical exploration of the common bile duct

Contraindication:

None

Patient preparation:

As for surgery

CM:

Non-ionic water soluble e.g. Omnipaque

Films:

AXR

1. After 5ml of CM have been injected
2. After 20ml of CM have been injected

Post-operative Cholangiography (T-tube) (RC)

Indications:

To exclude biliary tract calculi where operative cholangiography was not performed, or the results of operative cholangiography are not satisfactory or are suspect.

Contraindication:

None

CM:

Non-ionic water soluble e.g. Omnipaque

Patient preparation:

Consent obtained prior to the examination

Preliminary film:

20° RPO

Technique:

1. The examination is performed on or about the 10th postoperative day, prior to the pulling out the T-tube
2. The patient lies supine on the couch
3. A 23G needle is inserted into the tubing between the patient and the clamp.
4. The injection is made

Films:

1. PA
2. RPO
3. LPO
4. Erect

Aftercare:

None

Endoscopic Retrograde Cholangio Pancreatography (ERCP)

Indications:

1. Investigation of extrahepatic biliary obstruction
2. Post-cholecystectomy syndrome
3. Investigation of diffuse biliary disease
4. Pancreatic disease

Contraindications:

1. AIDS-positive

2. Esophageal obstruction
3. Previous gastric surgery
4. Acute pancreatitis
5. Pancreatic pseudocyst
6. When glucagon or Buscopan are contraindicated
7. Severe cardio/respiratory disease

CM:

Ionic water soluble e.g. Urografin, Conray

Patient preparation:

- NPO 4 hours prior to the examination
- Antibiotic cover
- Consent obtained prior to the examination
- Premedication: Pethidine

Technique:

- The pharynx is anaesthetized
- The patient lies in a LAO position and the endoscope is introduced
- The ampulla of Vater is located
- A catheter is inserted into the ampulla and CM is then injected

Films (spot films):

1. LAO
2. LAO (after removal of the endoscope)
3. Supine (after removal of the endoscope)
4. RAO (after removal of the endoscope)

Aftercare:

- NPO until sensation has returned
- Pulse, temperature, and BP half-hourly for 6 hours

Complications:

- Allergic reactions
- Acute pancreatitis