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**Dep AHS**

**Q1.Write a detail note on the procedure of upper limb Venograph.**

**ANS: Indication:**

To demonstrate the site of venous obstruction or stenosis.

Congenital abnormality of venous system

Oedema

Superior vena cava obstruction.

**Contraindication:**

Local sepsis

Allergic to iodinated contrast agents

Previous severe contrast medium reaction

Impaired renal function test (creatinine >1.5

**Contrast medium and Equipment:**

Low osmolar contrast medium

High osmolar contrast medium

Fluoroscopy with spot films devices

**Patient preparation:** **none**

**Technique:**

 The patient is lying supine

A 18 G butterfly needle is inserted in to the median cubidalS vein at the elbow. The cephalic vein is not used as it bypass the axillaries vein

Spot films of the region of interest are taken during hand injection of 330 ml of contrast medium

**Complication:**

Allergic reaction, hypersensitivity of iodine.

Thrombophlebitis

Extravasations of contrast medium

Haematoma Pulmonary embolus (blood clot or excessive air

**Q2.What are the advantages and disadvantages of Small bowel enema procedure?**

**ANS: Advantages and disadvantages of Small bowel enema procedure:**

**Advantage:**This procedure gives better visualization of the small bowel than
that achieved by a barium follow-through because rapid infusion
of a large, continuous column of contrast medium directly into the
jejunum avoids segmentation of the barium column and does not
allow time for flocculation( "to form small clumps“) to occur.

**Disadvantages:**

Intubation may be unpleasant for the patient, and may
occasionally prove difficult.
 It is more time-consuming for the radiologist.
 There is a higher radiation dose to the patient (screening the
tube into position).

**Q3.Write about the technique and complications of ERCP procedure?**

**ANS: ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY:**

Endoscopic retrograde cholangiopancreatography is a technique that combines the use of endoscopy and fluoroscopy to diagnose and treat certain problems of the biliary or pancreatic ductal systems.

Although percutaneous transhepatic cholangiography (PTC) has a
higher success rate for demonstrating bile ducts, ERCP has three
advantages over PTC:
The ability to visualize and biopsy ampullary lesions.
The demonstration of biliary tree and pancreatic duct.
 Greater therapeutic potential.
ERCP is usually performed by physicians or surgeons rather than
radiologists

**Indications:**

Investigation of extrahepatic biliary obstruction
Post-cholecystectomy syndrome
Investigation of diffuse biliary disease, e.g. sclerosing cholangitis
pancreatic disease.

 **Contraindications:**

Australia antigen-positive; HIV-positive
Oesophageal obstruction; varices; pyloric stenosis
previous gastric surgery
acute pancreatitis
Pancreatic pseudocyst
When glucagon or Buscopan are contraindicated
Severe cardiorespiratory disease.

**Contrast medium:**

*Pancreas*LOCM 240.
*Bile ducts*LOCM 150; dilute contrast medium ensures that calculi will not
be obscured.

**Equipment**1. Side-viewing endoscope
2. Polythene catheters
3. Fluoroscopic unit with spot film facilities.

**Patient preparation**1. Nil orally for 4 h prior to procedure
2. Antibiotic cover.

**Preliminary film**Prone AP and LAO of the upper abdomen, to check for opaque
gallstones and pancreatic calcification/calculi.

**Technique:**

The pharynx is anaesthetized with 4% Xylocaine spray and the patient is given diazepam 5 mg min - 1 i.v. until sedated.

The patient then lies on the left side and the endoscope is introduced.

The ampulla of Vater is located and the patient is turned prone.

A polythene catheter prefilled with contrast medium is inserted into the ampulla, having ensured that all air bubbles are excluded.

It is important to avoid over-filling of the pancreas. If it is desirable to opacify both the biliary tree and pancreatic duct, then the latter should be cannulated first. A sample of bile should be sent for culture and sensitivity if there is evidence of biliary obstruction.

**Aftercare:**

Nil orally until sensation has returned to the pharynx (0.5-3 h).
Pulse, temperature and blood pressure half-hourly for 6 h.
Maintain antibiotics if there is biliary or pancreatic

**Complications:**

*Due to the contrast medium*'Allergic reactions' - rare
acute pancreatitis - more likely with large volumes, high pressure injections.

*Due to the technique*

**Local**Damage by the endoscope, e.g. rupture of the oesophagus, damage
to the ampulla, proximal pancreatic duct and distal common duct.
**Distant**Bacteraemia, septicaemia, aspiration pneumonitis, hyperamylasaemia
(approx. 70%). Acute pancreatitis (0.7-7.4%).

**Q4.Define RPUG and write its indications and contraindications.**

 **ANS: Retrograde pyeloureterography:**

Retrograde pyelography is also referred to as retrograde pyeloureterography. In this study, the collecting system is evaluated by directly injecting radiographic contrast through catheters, rather than utilizing the excretory phase of contrast excretion after intravenous injection, as with a CT urogram (CTU) or intravenous urogram (IVU).

Normally, urine is produced in the kidney and travels down the ureter in an antegrade fashion and is then stored in the bladder. The term retrograde ("moving backwards") is used in reference to the direction the contrast is introduced.

This test is performed in the hospital radiology department by a urologist and is typically carried out under general anesthesia.

**Indications:**

Demonstration of the site, length, lower limit and, if possible, the nature of an obstructive lesion.

Demonstration of the pelvicalyceal system after an unsatisfactory excretion urogram.

Nonvisualization of ureteral segment on [IVU](https://radiopaedia.org/articles/intravenous-urography?lang=us) and [CTU](https://radiopaedia.org/articles/ct-urography?lang=us) (if there is still clinical concern for evaluating the collecting system after an IVU or CTU, a retrograde pyelogram may be able to better image the segment of ureter)

Better characterization of ureteral or pelvicalyceal abnormalities seen on IVU or CTU

To aid in stent placement.

Patient who has allergy on iodinated contrast media and have renal insufficiency is indicated for evaluation of retrograde urogram. But because the contrast media is not introduced intravenously, the possible reactions is low.

**Contraindications:**

Acute urinary tract infection

Pregnancy

Recent instrumentataions

**Q5.What do you know about Knee joint and Shoulder Arthography?**

**ANS: Indication:**

Joint capsule torn

Joint cavity

Synovial membrane

Articular cartilage, labrium

Ligaments

Tendons

**Contraindication:**

Active arthritis

Joint infection

Bleeding problems

**Knee Joint Arthography:**

The patient is lying supine

Using sterile technique the skin and underlying soft tissue are anesthetised posterior to midpoint of the patella

21g needle is inserted in to the joint space and then slightly angle anteriorly so that the tip of the needle comes to lie against the posterior surface of patella

An effusion is aspired and small dose of contrast is injected to ensure the correct positioning of the needle.

Then full volume of contrast medium (4ml) is injected followed by 40 ml of air for double contrast.

**Shoulder Arthography:**

The patients is lying supine with arm of side under examination close to the body external rotation .so that the head of biceps is out of the path of needle.

Using sterile technique the skin and soft tissues are anaesthetised 1cm inferior and 1cm lateral to the coracoids process a spinal needle 21g is inserted vertically in to the joint space under fluoroscopy guidance and test dose of contrast is injected followed by full injection 15ml for single contrast or air (12 ml) to distend the synovial sac (double contrast).

The needle is then removed and joint is exercised for uniform distribution of contrast medium.