

## Retrograde Pyeloureterography:

(a) 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 and in 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:

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

(2) Demonstration of the pelvicalyceal system after and unsatisfactory excretion urogram.

(3) Nonvisualization of ureteral segment on IVU and CTU (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).

(4) Better characterization of ureteral or pelvicalyceal abnormalities seen on IVU or CTU.

(5) To aid in stent placement.

(6) 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 reaction is low.

## Contraindication:

- Acute urinary tract infection.
- Pregnancy
- Recent instrumentation.

## Contrast Medium:

- HOCM or LOCM 150-200, i.e not too dense to obscure small lesion.

## ⇒ Technique:

- After the patient has been anesthetized, the procedure begins by ensuring proper positioning of the patient in the dorsal lithotomy position.
- Once positioning is complete, a cystoscopy is performed. The physician use the cystoscope to identify the left and right ureteral orifices.
- The physician then uses the IF or OF open-ended or cone-tipped catheter to cannulate the ureter that needs to be imaged.
- At this points radiographs are taken to ensure proper placement of the catheter.

## ⇒ Films: Using the undercouch tube.

- ① Spine PA of the ureter.
  - ② both 35° anterior obliques of the ureter.
- ③ NB: The catheter may be left in the pelvis to drain a pelviureteric obstruction. In this case withdrawal uretero-

grams are not possible.

⇒ After care:

- ① Post-anesthetic observations.
- ② Prophylactic antibiotics may be used.

Complications:

• Due to the anesthetic.

Complications of general anesthesia.

• Due to the technique.

- ① ~~and~~ introduction of injections
- ② Mucosal damage to the ureter.
- ③ Perforation of the ureter or pelvis by the catheter.

• Due to the contrast medium:

① Contrast medium can be ~~used~~ absorbed from the intact renal pelvis, giving rise to adverse reactions, however the risks are much less than with excretion urography.

② chemicle pyelitis. if  
there is statis  
of contrast medium

③ Extravasation due to  
over distension of the pelvis  
this is usually asymptomatic  
but may result in pain.

Question NO:- 3

Which procedure is performed for investigation of extrahepatic biliary obstruction? Discuss the general protocol followed for that procedure.

Ans:-

ERCP:-

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

\* INDICATIONS:-

- ① investigation of extrahepatic biliary obstruction.
- ② post-cholecystectomy syndrome
- ③ investigation of diffuse biliary disease e.g. sclerosing cholangitis
- ④ pancreatic disease.

CONTRAINDICATION:-

- ① Australia Antigen positive; HIV-positive
- ② oesophageal obstruction; varices; PPH; pyloric stenosis.

## Question Q:-3

- ③ Previous gastric surgery.
- ④ Acute pancreatitis
- ⑤ pancreatic pseudocyst
- ⑥ when glucagon or Buscopon are contraindicated.
- ⑦ severe cardiorespiration disease

## Contrast medium:-

pancreas  
Locm 240  
Bile ducts  
Locm 150: dilute contrast  
medium ensure that calculi will  
not be obscured.

## Technique:-

- The pharynx is anaesthetized with 4% xylocaine spray and the patient is given diazepam 5mg min - 1 i.v. until sedated
- The patient then lies on the left side and the endoscopic is introduced.
- The ampulla of Vater is located and the patient is turned prone.

## Question NO. 3

### Film:-

- pancreas (using fine focal spot)
- ① prone, both posterior obliques  
Bile ducts.  
1. Early filling film to show calculi
  - ② films following removal of the endoscope. which may obscure the duct.
  - ③ Delayed films to ~~easy~~ assess the gallbladder and emptying of the common bile duct.

### After care:-

- ① Nil orally until sensation has returned to pharynx (0.5-3 h).
- ② pulse, temperature and blood pressure half-hour for 6 h.
- ③ maintain antibiotics if there is ~~ability~~ biliary or pancreatic obstruction.
- ④ Serum / urinary amylase if pancreatitis is suspected.

## complication:-

Due to the contrast medium.

- ① Allergic reactions - rare
- ② 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 and distal common  
duct.

### Distant:-

Bacteraemia. Septicaemia,  
aspiration pneumonia, hyperamylasaemia (approx 70%) Acute  
pancreatitis. (0.7-7.4%)

①

Q④ What is HSG? Ans ④

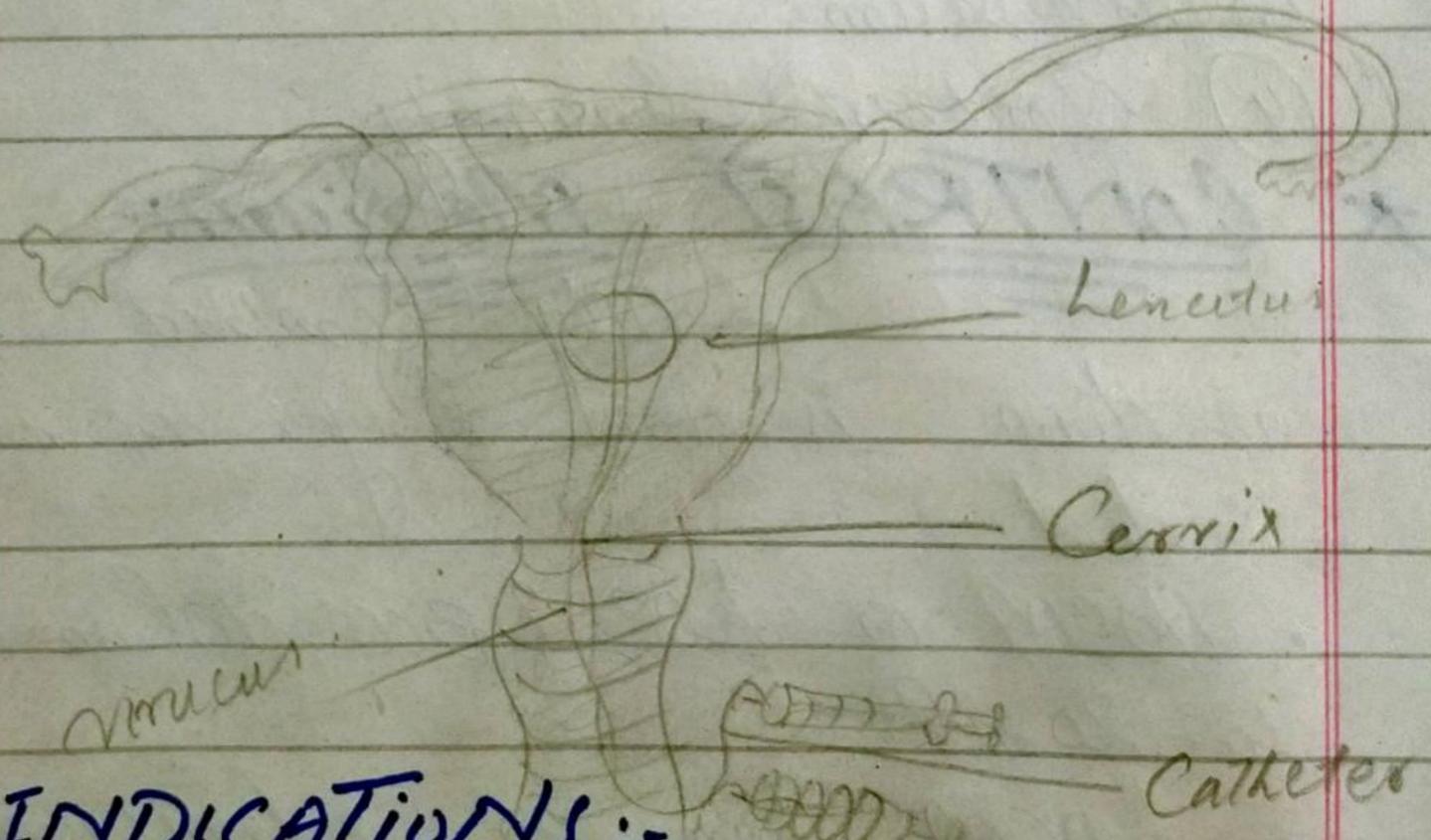
Ans ④

• Hysterosalpingography (HSG) also known as uterosalpingography, is a fluoroscopic examination of the uterus and the fallopian tubes.

• It is performed to investigate the shape of the uterine cavity and the shape and patency of the fallopian tubes.

- Hystero means uterus.
- Salpingo means fallopian tubes
- Graphy means to draw.

Diagram:-



INDICATIONS:-

- ① Infertility
- ② Recurrent miscarriage
- ③ Following tubal surgery
- ④ Assessment of the

Ans → 4  
integrity of a Caesarean uterine  
Scar.

## \* CONTRAININDICATION:-

- ① pregnancy.
- ② A purulent discharge on inspection of the Vagina or Cervix or diagnosed PID in the preceding 6 months.
- ③ Recent Dilation & Curettage or Abortion or immediately post-menstruation This applies only to oily access medium because of the risk of intravasation.

④ Contrast Sensitivity.

## \* CONTRAST Medium:-

Oily Contrast medium is no longer recommended.

• HOCM or hOCM 300 volume 10-20 ml.

• hOCM have no advantage with regard to image quality or side effects nonionic dimer Iotramin is associated with a

(3)

Ans 4 incidence & decreased a  
Severity of delayed pain.

### \* EQUIPMENT:-

- ① fluoroscopy unit which spot film device.
- ② vaginal Specium.
- ③ Allisellum forceps
- ④ Uterine Camula heech, milk-inson olive or S-F paediatric foiety Catheter.

### \* PATIENT PREPARATION:-

The patient should  
obtain from intercourse b/w  
booking the appointment &  
the time of the examina-  
tion unless set reliable method  
of Contraception or the  
Examination can be booked  
b/w the fourth & tenth  
days in a patient with a  
regular 28-days cycle.

- ② Apprehensive (fearful) patient  
may need premedication

(4)

## \* PRELIMINARY FILM:-

• Coned PA  
View of the pelvic  
Cavity.

## TECHNIQUE:-

- ① The patient lies supine on the table with knees flexed legs abducted and heels together
- ② Using aseptic techniques the operator inserts Specium & Cleans the Vagina & Cervix with Chlorhexidine.
- ③ The anterior lip of the Cervix is Stealed with the Musellium forceps and the Canula inserted into the Cervical Canal. If Foley Catheter is used there is usually no need to grasp the Cervix with the Musellium forceps.

(5)

## \* FILMS:-

Using the under Couch tube

① As the tube began to fill.

② When the personal spill has cleared & with all the instrument removed.

## \* AFTERCARE:-

It must be ensured that the patient is in no serious discomfort not has significant bleeding before she leaves.

② The patient must be advised that she may be bleeding vagina for 1-2 days and pain may persist for up to 2 weeks.

## \* Complications:-

Due to the techniques:-

① pain may occur at the following time

(6)

- (2) using the vulsellum forceps.
- (3) to during menstruation of the Canulla.
- (4) with tubal personal to a block
- (5) with distension of the uterus if there is tubal spasm.
- (6) Bleeding form trauma of the following up to 2 weeks.
- (7) Transmit mucus vomiting & headache.

## \* Complications:-

Intervasation of Contrast medium into Venous System of uterus result in a fine ica-like pattern with the uterine wall when more Extensive out line larger veins.

- (2) direct trauma to the endometrium.
- (3) Time of the procedure near to menstruation.

(7)

(3) Time of the procedure with a few days after Curettage.

(4) Uterine abnormalities e.g. tuberculosis, carcinoma, fibroids.

## \* DETECTABLE PATHOLOGY:-

• Conditions which may be detected with HSG include.

## Uterine pathologies:-

- Uterine Congenital anomalies.
- Submucosal Uterine fibroids.
- Uterine malignancy.
- adenomyosis.
- uterine (endometrial) polyps.

## \* DETECTABLE pathology:-

### Tubal pathologies:-

of Fallopian ~~obliteration~~ usually secondary to previous pelvic inflammation.

⑧

It must be differentiated from incomplete tubal opacification due to spasm under filling of the uterine contrast.

- ② tubal polyps
- ③ Tubal malignancy.
- ④ hydrosalpinx
- ⑤ Tubal Spasm can be physiology.
- ⑥ Salpingectomy.

Question No:- 5

Explain in detail the conventional radiological procedures used for diagnosing the disorders of Joints, Ligaments and tendons.

Ans:- Arthrograph:-

Method:-

- single contrast (contrast)
- Double contrast (air)

Indication:-

- Joint capsule torn
- Joint cavity
- Synovial membrane
- Articular cartilage, labrum
- Ligament
- Tendons
- Loose bodies within joint
- prosthesis assessment (loosening, infection)

Contraindication:-

- Active arthritis
- Joint infection
- Bleeding problem
- previous sensitivity to contrast media.

Equipment:-

- Fluoroscopy with spot film devices.

Question No:- 5

## preliminary Film:-

- Routine plain film radiograph
- AP and true ~~level~~ <sup>trans</sup> lateral of the joint of interest
- Axial in shoulder and oblique view / inversion / eversion in ankle
- Radial and ulnar deviation in wrist joint.

## After care:-

- Avoid driving for two days.
- Joint pain may occur.

## Complication:-

- Allergic reaction
- synovitis (inflammation of synovial membrane)
- Pain capsule rupture
- Trauma to adjacent structure e.g. nerves and vessels.

## 2:- Intravenous phel pyelography:-

- An intravenous phelography Ivp also called an intravenous urography Ivu or ~~IV~~ excretory urography (EU) is a radiological procedure used to visualize abnormalities of the urinary system including the kidneys renal pelvicalyceal system ureters and bladders.

### INDICATIONS

- Check for normal junction of kidneys.
- Check for anatomical variants or congenital anomalies e.g. horse shoe kidney.

- Check the course of the ureters.
- Detect and localize a ureteric obstruction (urokiniasis) access for synchronous upper tract disease in those with bladder transitions cell carcinoma. (TCC)

## CONTRA INDICATIONS:-

- Contrast allergy.
- Hepato Renal Syndrome.
- Thyrotoxicosis.
- Raised serum creatinean.

## CONTRAST MEDIA.

- HOCM or LOCM 370 are acceptable but the following high risk groups should receive LOCM.
  - ① Infants and small children and the elderly.
  - ② Those with renal and/or cardiac failure.
  - ③ Poorly hydrated patients
  - ④ Patients with diabetes.
  - ⑤ myelomatosis or sickle cell

anaemia.

⑤ Patients who had a previous severe contrast medium reactions with IOCM or those with a strong allergy history.

## CONTRAST MEDIA.

- Adult dose = 50 ml
- Paediatric dose = 1 ml/kg