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NAME :- ALIZ Ullah
ID :- 14665
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INSTRUCTOR :- Ms Maheen Cui
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Q1: IF there is non-visualization of ureteral segment on ivu and CTU which alternative procedure will you perform? what is the general protocol for performing that procedure?

Ans: IF there is non-visualization of ureteral segment on ivu and CTU we have to perform the "RETROGRADE PYELOURETEROGRAPHY"

RETROGRADE

Pyeloureterography.

- In this study the collection system is evaluated by directly injecting contrast through catheters.
- Normally urine is produced in the kidney and travel down the ureter in an antegrade fashion and is then stored in the bladder.
- The term retrograde is used in reference to the direction the contrast is ~~in~~ introduced.
- Test is performed by urologist under general anaesthesia.

General Protocol For Performing This Procedure.

1. Indications:-

- i) Demonstration of the site, length, lower limit, and the nature of an obstructive lesion.
- ii) Demonstration of Pelvic/ureteral system after an unsatisfactory excretion urogram.
- iii) Non-vascularisation of ureteral segment on IVP and CTU.

- iv. Better characterization of ureteral ~~segmental~~ or polycystic renal abnormalities seen on IVP or CTU
- v. To aid in stent placement.

2. Contraindications:

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

3. Contrast media:

- HOCM or LOCM 150-200

4. Equipment:

- Fluoroscopy unit.

5. Patient Preparation:

- AS for Surgery.

6. Preliminary films:

- Full length supine AP abdomen when the examination is performed in the X-Ray department.

7. Technique

- After anesthesia the begins by ensuring proper positioning of the patient in the dorsal lithotomy position.
- Once positioning is complete a cystoscopy is performed.
- Then use a 5F or 6F open-ended or cone tipped catheter the ureter that needs to be imaged.
- At this point radiographs are taken to ensure proper placement of the catheter.

8. Films

- using uncoiled couch tube.
1. supine PA of the ureter.
 2. both 35° anterior oblique of the ureter.

9. Post After Care

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

10r Complication:

→ Due To anesthetic.

i. complication of general anesthesia.

→ Due To Technique.

i. infection introduced.

ii. mucosal damage of ureter.

iii. perforation of ureter by catheter.

→ Due To C.M.

i. adverse reaction of C.M

Due To absorption from the renal pelvis.

ii. Chemical Pyelitis.

iii. Extravasation due to overdistension of the pelvis.

Q21. Which radiological procedure commonly performed for assessing congenital anomalies of renal system? Explain the whole ~~process~~ procedure.

Ans. IntraVenous Pyelography (IUP) is commonly performed for assessing congenital anomalies of renal system.

Intravenous Pyelography:-

- IVP also called as (ivu) or (EU)
- it is a radiological procedure used to visualize abnormalities of the urinary system, and kidney, ureters, and bladder.

Whole Procedure of (IVP)-

1. INDICATIONS

- Check for normal function of kidneys.
- Check for anatomical variants or congenital anomalies.
- Check ~~and~~ the course of the ureters.
- detect the localize a ureteric obstruction.
- assess for synchronous upper tract disease in those with bladder transitional cell carcinoma.

2. Contra indications:

- Contrast allergy.
- Hepato-renal syndrome
- Thyrotoxicosis.
- Raised serum creatinine.

3: CONTRAST MEDIA:

→ HOCM or LCCM 370

1. Infant and small children and the elder.

2. Those with renal and cardiac failure.

→ adult doses

50ml Paediatric dose

4: Patient Preparations:

→ No food for 5h

→ be ambulant for 2h

→ administration for bowel preparation fails to improve quality of the examination

5: Preliminary films:

→ supine full-length (AP) of the abdomen.

→ supine (AP) of the renal area in expiration.

→ 35° posterior oblique view

→ Tomography at the level of 1/3 of the AP diameter.

6: Technique:

→ median antecubital vein for injection site.

→ A 19-G needle is advanced up the vein to reduce the risk of a Proliferous injection.
→ Upper arm and shoulder pain may be due to Stasis of contrast medium in the vein.

7. Films:

1. Immediate films:

AP of the Renal areas. This film is exposed 10-14s after the injection.

2. 5-min film:

This film is taken to determine if excretion is symmetrical and is invaluable for assessing the need to modify technique.

3. 15-min film:

There is adequate distension of the pelvicalyceal system with opacur urine by this time.

4. Release films:

Supine AP abdomen film taken to show whole urinary tract.

5. After micturition films:

Based on the clinical finding and the radiological finding on the earlier films.

8. Additional films.

- 55° Posterior oblique of the kidneys
- Tomography - when there are confusion overlying shadows.
- 30° caudal angulation of the ~~kidney~~ tube for the renal area.
- Prone abdomen.
- Delayed films.

9. Complications.

- Due to contrast medium.
- Due to techniques applied abdominal compression may produce intolerable discomfort or hypotension.

Q 31. Which procedure is performed for investigation of extrahepatic biliary obstruction? Discuss the general protocol followed for that procedure.

Ans. Endoscopic Retrograde Cholangiopancreatography is performed for investigation of extrahepatic biliary obstruction.

ERCP.

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

→ (PTC) has a higher success rate for demonstrating bile duct, ERCP has three advantages.

1. ability to visualize ampullary lesions.
2. demonstration of biliary tree and pancreatic duct.
3. Greater therapeutic potential.

General Protocols for ERCP.

1 INDICATIONS:

- (i) investigation of extrahepatic biliary ~~duct~~ obstruction.
- (ii) Post-cholecystectomy syndrome
- (iii) investigation of diffuse biliary disease.
- (iv) Pancreatic disease.

2. CONTRA INDICATIONS:

1. HIV Positive
2. oesophageal obstruction
3. Previous gastric surgery.
4. Acute Pancreatitis.

- 5. Pancreatic Pseudocyst.
- 6. Severe Cardio Respiratory disease.
- 3. Contrast Medium.

i) Pancreas.
Locm 240

ii) Bile ducts.
Locm 150

4. Equipments.

- i) side viewing endoscope.
- ii) Polythene catheters.
- iii) fluoroscopic unit.

5. Patient Preparations.

- i) Nothing orally for 4 h.
- ii) Pre medication
- iii) Antibiotic cover.

6. Preliminary films.

- Rone AP and LAO of the upper abdomen.
- gall stones and Pancreatic Calcification.

7. Technique.

- The Pharynx is anesthetized with 4%
- Patient lies on left side
- the ampulla of Vater is located and the pt is Ternal Prone.

- A Polythene Catheter Prefilled with Contrast medium. Is inserted into the ampula.
- A Small test injection of Contrast for the Position of the Cannula under Fluoroscopic Control is made.
- It is important to avoid over-filling of Pancreas.

8. Films.

↳ Pancreas.

1. Prox both Posterior obliques.

↳ Bile ducts.

1. Early filling films to show Calculi

- a) prone.
- b) supine.

2. films following removal of the endoscope

3. Delayed films to assess the Gallbladder and emptying of Common bile duct.

9. after Case.

→ Nil orally sensation has returned to the Pharynx.

→ Pulse, temperature and B.P half for 6 h.

→ Maintain antibiotic if there is biliary or Pancreatic obstruction.

10. Complication:

1. Due to C.MI:

- i. Allergic reaction.
- ii. Acute Pancreatitis.

2. Due To Technique:

- i. Local :- Damage by endoscope.
- ii. Distal :- Bacteremia, Septicemia.

Q41. Which radiological procedure is recommended for evaluating the cause of female infertility? Explain the procedure in detail.

Ans: ~~Hysterosalpingography~~

Hystero Salpingo graphy (HSG) is recommended for evaluation the cause of female infertility.

HSG or

HSG also known as utero salpingo graphy. Fluoroscopic examination of uterus and fallopian tubes.

→ Perform To investigate the shape of uterine tube cavity and patency of the fallopian tubes.

Procedure of "HSG".

1. Indications:

→ infertility.

→ Recurrent miscarriages

→ ~~Following Tube Surgery~~

→ Fallopian Tube Surgery.

→

2. Contraindications:

→ Pregnancy.

→ A Purulent discharge on inspection of the vulva or cervix.

→ immediately Post menstruation.

→ Contrast Sensitivity.

3. Contrast Medium:

→ Hocrn or Loem 300. Volume 10-20 ml.

4. Equipment:

→ Fluoroscopy unit with spot film device.

→ Vaginal Speculum.

→ Vulsellum forceps.

→ Uterine cannula.

5. Patient Preparations:

→ Can be booked b/w the fourth and tenth days in patient with a regular 28-day cycle.

→ Apprehensive Patient may need Premedication.

6. Preliminary films:

→ Coned PA view of the Pelvic Cavity.

7. Technique

- P.T lies supine on the Table with knees flexed. Legs abducted and heels together.
- insert a speculum and clean the vagina and cervix with chlorhexidine.
- the anterior lip of the cervix is steadied with the vulsellum forceps and the cannula is inserted into the cervical canal.
- Contrast medium is injected slowly under intermittent fluoroscopic control.
- Spasm of the uterine cornu may be relieved by iv glycerin.

8. Films:

1. As the tubes begin to fill

2. when peritoneal spill has occurred and with all the instrument removed.

9: AFTERCARE:

- Patient has significant bleeding before she leaves.
- The patient must be advised that she may have bleeding per vagina for 1-2 days and pain for up to 2 weeks.

10: Complications:

1. Pain at following time.
2. Bleeding from uterus or cervix
3. Transient nausea, vomiting and headache.
4. A fine lace-like pattern with the uterine wall.
5. Infection.
6. Abortion in pregnant P.T.
7. Allergy due to contrast media.

Q5: Explain in detail the conventional radiological procedure used for diagnosing the disorders of joints ligament and tendons.

Ans: For the diagnosis of disorders in joints ligaments and tendons we can perform 'Arthrography'.

Arthrography:

Type of imaging test used to look at a joint such as the shoulder, knee, it may be done if standard x-ray do not show the needed details of the joint structure and function.

→ Conventional Radiological Procedure for Arthrography.

1: Method:

- 1: Single Contrast
- 2: Double Contrast.

2: indications:-

- Joint capsule torn
- joint cavity
- Synovial membrane
- Articular cartilage
- Ligaments
- Tendons
- Loose of bodies with in joint

3: Contra indications:

- Active arthritis.
- Joint infection.
- Bleeding problems.
- Previous sensitivity To C.M.

4: Equipment:

- Fluoroscopy with spot film devices.

5: Preliminary film:

- Routine Plain Film radiography.
- AP and TB lateral of the joint of interest.
- Axial in shoulder and oblique view / inversion / eversion in ankle.
- Radial and ulnar deviation in wrist joint.

6: After cases

- avoid driving for two days
- Joint Pain may occur.

7: Complications:

- Allergic reaction
- Synovitis
- Pain capsular rupture

END OF PAPER