

Name HAFEEZ UHIAH

ID # 14941

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SUBMITTED BY :: MAHEEN Gul

SEMESTER 4 - Fourth

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Q No. (1)

AM Ureteral Segment on IVO
and CTU which alternative
procedure will you perform?

Retrograde Pyelography is the
Study of 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 the 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

- ① Demonstration of the site, length, lower limit and, if possible, the nature of an obstructive lesion.
- ② Demonstration of the periventricular system after an unsatisfactory excretion urogram.
- ③ To aid in stent placement.
- ④ Better characterization of ureteral or periventricular abnormalities on IUV or CTU.
- ⑤ Nonvisualization of ureteral segment on IUV and CTU evaluating the collecting system after an IUV or CTU a retrograde pyelogram may be able to better image the segment of ureter.

⑥ Techniques:

⇒ After the patient has been anesthetized, the procedure begins by ensuring proper positioning of the patient in dorsal lithotomy position.

⇒ The physician then uses a SF or DF open-ended or cone-tipped catheter to cannulate the ureter that needs to be imaged.

⇒ At this point, radiographs are taken to ensure proper placement of the catheter.

⇒ Once positioning is complete, a cystoscopy is performed. The physician uses the cystoscope to identify the left and right ureteral orifices.

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Films:

→ Using the Underouch tube.
 ①. Supine PA of the Ureter.

② both 35° anterior of the Ureter.

NB. The Catheter may be left in the pelvis to drain a pelviureteric obstruction. In this case with drain Ureterogram are not possible.

Aftercare:

- ① post - anaesthetic observation.
- ② prophylactic antibiotics may be used.

Complications: (anaesthesia technique)

- ① Introduction of Infection
- ② Mucosal damage to the Ureter.
- ③ Perforation of the Ureter or pelvis by the Catheter.

Q no (24)³⁰
 Ans: Congenital anomalies and radiological whole procedure of renal system.

It is radiological procedure used to visualize abnormalities of the renal system. Including the kidneys (renal parenchyma) ureters & bladders.

Indications:

- ⇒ check for normal function 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 (uroolithiasis).
- ⇒ assess for synchronous upper tract disease in those with bladder transitional cell carcinoma (TCC).

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Contraindications

- ⇒ Contrast allergy
- ⇒ Hepato-renal Syndrome
- ⇒ Thyrotoxicosis
- ⇒ Raised Serum Creatinine.

Contrast Media

⇒ ICM or ICM 370 are

acceptable but the following 'high-risk' groups should receive ICM:

- (1) Infants and Small children and the elderly
 - (2) Those with renal and/or Cardiac failure
 - (3) Poorly hydrated patients.
 - (4) Patients with diabetes, myelomatosis or Sickle-cell anaemia.
 - (5) Patients who have had a previous severe contrast medium reaction with ICM or those with a strong allergic history.
- ⇒ Adult dose 50 ml
Paediatric dose 1ml kg⁻¹.

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Patient Preparation

- (1) No food for 5 hours prior to the examination.

Dehydration is not necessary and does not improve image quality.

- (2) - patient should, preferably, be ambulant 2 h prior to the examination to reduce bowel gas.

- (3) The routine administration of bowel preparation fails to improve the diagnostic quality of the examination and its use makes the examination more unpleasant for the patient.

Preliminary Film:

- (1) - Supine - Full-length Ap of the abdomen, in inspiration.

The lower border of the cassette of the abdomen is at the level of the symphysis pubis and the x-ray beam is centered in the mid line at the iliac crests.

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25° Supine AP of the renal areas. In expiration. The X ray beam is centred in the mid-line at the level of the lower costal margin.

35° posterior oblique view.

45° tomography of the kidneys are the level of a third of the AP diameter of the patient (approx. 8-11 cm). The optimal angle of swing is 25-40°.

IMMEDIATE FILM³⁰

AP of the renal areas. This film is exposed 10-14 after the injection (arm-to-kidney time). It aims to show the nephrogram, i.e. the renal parenchyma opacified by contrast medium in the renal tubules.

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5- min Film:

AP of the renal areas. This film is taken to determine if excretion is symmetrical and is invaluable for assessing the need to modify technique, e.g. a further injection of contrast medium if there has been poor initial opacification.

⇒ The principal value of this film is to assess bladder emptying. to demonstrate a return to normal of dilated upper tracts with relief of bladder pressure, to aid the diagnosis of bladder to confirm ureterovesical junction calculi and, uncommonly, to demonstrate a urethral diverticulum in females.

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ADDITIONAL FILMS:

- (1) 35° posterior oblique of the kidneys, ureters or bladder.
- (2) Tomography - when there are confusing overlying shadows.
- (3) 30° caudad angulation of the tube for the renal area.
- (4) prone abdomen - may provide better visualization of the ureters by making them more dependent.
- (5) Delayed films - may be necessary for up to 24 h after injection in cases of obstructive uropathy.

Techniques:

The median antecubital vein is the preferred injection site because flow is restarted in the cephalic vein as it pierces the clavicular fascia.

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⇒ A 19-G needle is advanced up the vein to reduce the risk of a perivascular injection and the injection is given rapidly as a bolus to maximize the density of the nephrogram. Upper arm or shoulder pain may be due to stasis of contrast medium in the vein. This is relieved by abduction of the arm.

Q No. (3)⁰⁰

Ans⁰ procedure is performed for investigation of extrahepatic biliary obstruction.

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

Although percutaneous transhepatic cholangiography (PTC) has a higher success of demonstrating bile ducts ERSP has three advantages.

- ① Greater therapeutic potential.
- ② The demonstration of biliary tree and pancreatic duct
- ③ The ability of visualize and biopsy lesions.

Indications:

- ① Investigation of extrahepatic biliary obstruction.
- ② post cholecystectomy Syndrome pancreat diseases.
- ③ Investigation of diffuse biliary disease.

Contraindications:

- ① Acute renal failure possible
HIV positive
- ② Pancreatic pseudocyst
- ③ Acute pancreatitis
- ④ previous gastric Surgery.
- ⑤ Acute renal failure antigen positive HIV -
Positive.
- ⑥ Severe Cardiorespiratory disease.

Contrast Mediums:

=> pancreas
100m 240
Bile duct
100m 150

Contrast medium ensures
that ~~the~~ calculi will not
be obscured.

Indications:

- ① Investigation of extrahepatic biliary obstruction.
- ② Post cholecystectomy syndrome pancreat diseases.
- ③ Investigation of diffuse biliary disease.

Contraindications:

- ① Australasia antigen positive H₁v positive
- ② Pancreatic pseudocyst
- ③ Acute pancreatitis
- ④ previous gastric surgery.
- ⑤ Australasia antigen positive HIV - Positive.
- ⑥ Severe cardiorespiratory disease.

Contrast Mediums:

=> pancreas
100m 240
Bile duct
100m 150

Contrast medium ensures that ~~the~~ ^{the} ~~celluli~~ ^{celluli} will not be obscured.

Equipment:

① Side-viewing endoscope.

② Polythene catheters.
Patient Preparation:

① Nil orally for 4h

② premedication

③ Antibiotic cover.

④ preliminary film:

→ opaque gallbladder and pancreatic calcification.

Film:

① Pancreas:

① prone, both posterior oblique

② Bile ducts:

① → Early filling

Film

② → Prone

③ → Supine

④ Film following removal of the endoscope.

Delayed film to assess the gallbladder common bile duct

Complication :-

Due to Contrast
Medium:

- Allergic reaction
- Acute pancreatitis

Due to technique

local damage by the
Endoscope:

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Q No 4^{or}
Radiological Procedure of
female infertility
Explain the procedure:

Uteroscoping examination
Fluoroscopic 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.

INDICATIONS:

- ① Infertility
- ② Recurrent miscarriages
- ③ Following tubal Surgery
- ④ Assessment of the Integrity of a Caesarean Uterine Scar.

Contraindications:

- ① pregnancy.
- ② A purulent discharge on inspection of the vagina or cervix or diagnosed PID in the preceding 6 months.
- ③ Recent dilation or abortion or immediately post-menstruation
This applies only to oily contrast medium because of the risk of intravagation.
- ④ Contrast Sensitivity:

Contrast Mediums

only contrast medium is
no longer recommended.
ItoCM or LoCM 300.

Volume (10 - 20 ml).

LoCM have to advantage
with regard to image
quality or side effects
but the nonionic dimer,
Iotrolan, is associated with
a lower incidence and
decreased severity of delayed
pain.

Equipment.

- ① Fluoroscopy unit with Spot
Film device
- ② vaginal Speculum.
- ③ volsellum forceps
- ④ Uterine Cannula, Leech,
Wilkinson Cannula, Olive
8 - F Paediatric Foley
Catheter.

Patient Preparations:

① The patient should abstain from intercourse between booking time examination and booked between the fourth and tenth days in patient with a regular 28-day cycle.

② Apprehensive (Fearful) patients may need premedication.

Technique:

① The patient lies supine on the table with knees flexed legs abducted and heels together.

② Using a cryptic technique the operator inserts a speculum and cleans the vagina and cervix with chlorhexidine.

⑤ The anterior lip of the cervix is steadied with the Valsellum forceps and the cannula is inserted into the cervical canal. If Foley catheter is used usually grasps the cervix with the Valsellum forceps.

Film:

Using the Undercouch tube.

① As the tube begins to fill.

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

After CARE.

It must be ensured that the patient is in no serious discomfort nor any significant bleeding before she leaves. The patient have bleeding vagina for 1-2 days and pain may persist for up to week.

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Complications:

① Pain may occur at the following times.

Using the Vesallum Forceps.
during insertion of the cannula
with tubal distension proximal
to the block.

with distension of the uterus
if there is tubal spasm.

Bleeding from trauma to the
uterus or cervix.

Transient nausea. Vomiting and
headache.

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vsp

Q

NO

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Ans Conventional radiological procedure use for Diagnosing of joints, ligaments and tendons.

It is medical imaging procedure which is performed to demonstrate and assess the joint, these structure visualized through the introduction of a contrast agent into the joint capsule.

Method:

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=> Single contrast (contrast)

=> double contrast (AIR)

INDICATIONS:

=> joint capsule

=> joint cavity

=> ligaments

=> tendons

Contraindications:

=> Active arthritis

=> joint infection

=> Bleeding problems

=> previous Sensitivity to Contrast media.

Equipments:

=> Fluoroscopy with Spot
Films devices.

Knee joint: ~~A~~

=> patient is laying Supine.

=> Using Sterile technique the

Skin and underlying Soft

tissue are anesthised posterior

to mid point of the patella.

=> An effusion is aspirated and

Small doses of contrast

ensure the correct positioning

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

Hip Arthrography:

⇒ The patient is lying supine with legs internally rotated so that entire length of femoral neck is visualised.

The position of the femoral vessels are visualised to avoid puncture.

⇒ The skin is clean using aseptic technique.

Any fluid in joint is aspirated and sent for examination.

⇒ Inject 6 to 8ml of contrast under fluoroscopic control.

⇒ The needles is then removed and joints is exercised for equal distribution of contrast within joint.

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Shoulder Arthrography:

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

Complication:

- ⇒ Allergic reaction.
- ⇒ Synovitis (inflammation of synovial membrane)
- ⇒ pain capsular rupture.
- ⇒ Trauma to adjacent e.g. nerves and vessels.