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Question No = 1

Answer

Procedure.

retrograde Pyelography.

retrograde Pyelography is also referred to as retrograde pyelourethrography. in this study the collecting system is evaluated by directly injecting radiographic contrast.

Though Catheter, rather than utilizing the excretory phase of contrast excretion after intravenous injection, as with a CT urogram (CTU) or intravenous urogram.

Normally, urine is produced in the kidney and travel down the ureter in an integrade fashion and is then stored in the bladder.

The term retrograde (moving backward) is used in reference to the direction the contrast is introduced.

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

indication

- 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.
- Better characteristics 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 indication for evolution of retrograde urogram.

Contra indication

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

Contrast Medium.

HOCM or LOCM 150-200 i-e not to dense to obscure small lesion. 10ml

equipment.

Fluroscophy

Patient Preparation.

As for Surgery

Complication

- Due to anaesthetic
Complication of general
anaesthesia.

- Due to the technique.

1) introduction of injection
2) muocosal damage to
the ureter.
3) Perforation of ureter
or pelvis by the
catheter.

Due to Contrast media.

1) Contrast medium can be
absorbed from the intact
renal pelvis, giving rise
to adverse reaction.
2) Chemical Pyelitis:-
if there is stasis of contrast
medium.
3) Extravasation due to overdistention of pelvis.

Films

- Supine KUB of the ureter
- Both 35° anterior oblique of the ureter.

NB. The catheter may be left in the pelvis to drain a pelvic ureteric obstruction. In this case with drawal ureterograms are not possible.

After Care

- post anaesthetic Observation.
- Prophylactic antibiotics may be used.

Complication

- Due to anaesthetic complication of general anaesthesia.

- Due to the technique.

1) introduction of infection
2) mucosal damage to the ureter.
3) Perforation of ureter or pelvis by the catheter.

Due to Contrast media.

1) Contrast medium can be absorbed from the intact renal pelvis, giving rise to adverse reaction.
2) Chemical pyelitis:-
   if there is stasis of contrast medium.
3) Extravasation due to overdistention of pelvis.

Question No = 2

Answer

Procedure

intravenous Pyelography. (IVP)

an intravenous Pyelography is also called an intravenous urography or excretory urography is a radiological Procedure used to visualized abnormalities of the urinary system, including the kidney, ureter and bladder.

Indication

Check for normal function of kidney

check for course of the ureter.

- Check for anatomical variants or congenital anomalies.
- detect and localize a ureteric obstruction.
- asses for synchronous upper tract disease in those with bladder transitional cell carcinom (TCC)

Contra indication.

- Contrast allergy
- Hepato renal syndrome
- Thyrotoxicosis.
- raised serum Creatinine.

Contrast media.

HOCM or LOCM 370 are acceptable but the following high risk group should review.

LOCM.

infant and Small Children in the elderly.

Poorly drated Patient.

those with renal or Cardiac failure.

Patient with diabetes, myelomatosis or Sickle cell anaemia.

Adult dose
50ml

Paediatric dose
1ml (5g-1

Patient preparation

- No food for 5 hour prior to the examination.
Dehydration is not necessery and does not improve image quality
- patient should preparable be ambulant for 2 h prior to the examination to reduce bowl gas.
- the routine administration of bowl preparation fails to improve the diagnostic quality of the examination and it use makes the examination more unpleasent for the patient.

Preliminary film

Supine full length AP of the abdomen, in inspiration the lower boarder of the cassete is at the level of the symphosis pubis and the xray beam is centred in the midline at the level of the iliac crest.

The Supin AP of the renal areas in expiration. The xray beam is centred in the midline at the level of the lower costal margin.

35° posterior Oblique view

Supin AP of the renal areas.

Control film.

Technique.

The median antecubital vein is the preffered injection site because flow is retarded in the cephalic vein as it pierces the clavipectoral fascia.

A 19-Gr needle is advanced up the vein to reduce the risk of a perivenous injection and the injection is given rapidly as a bolus to maximize the densities of the nephrogram.

upper arm or shoulder pain maybe due to stasis of contrast medium in the vein.

Films

immediate film

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

5-min film

AP of the renal areas. the film is taken to reduce if excretion is symmetrical and is inavailable for assessing the need to mudify technique.

15-min film

AP of the renal areas. this is usually adequat distension of the petvicalyceal system with opaque urine by this time.

Release film.

Supin Ap abdomen ine film is taken to show the whole urinary tract.

After micturation film

Based of the clinical finding and the radiological finding ond the earlen time.

the principle value of the film is to asses bladder emptying, to demonstrate a return to normal of dilated upper tract with relief of bladder pressure.

Additional film

1) 35 posterior Obliques of the Kidney, Ureter, or bladder.

2) Tomography - where there are Confusing overlying Shadow.

3) Delayed film: may be necessary for upto 24h after injection in cases of obstructive uropathy

Complication

- Due to Contrast medium.
- Due to technique.
- Dilation of left Renal pelvis and calyces above the Obstructing Calculus.

Question No =3

Answer

Procedure

Endoscopic Retrograde cholano pancreatography. (ERCP)

- Endoscopic retrograde

Cholano pancreatography is a technique that combine the use of endoscopy and fluoroscopy to diagnose and treate certain problem of the billiary system.

Indication

- investigation of extrahepatic billiary obstruction
- post-Cholycystectomy Syndrome
- pancreatic disease

Contraindication

1) Australia antigen positive
   HIV positive.

2) Osteopageal obstruction, varices
   pyloric stenosis

3) Previous gastric surgery
4) acute pancreatitis
5) Pancreatic pseudocyst

Contrast medium.

Pancreas
Locm 240

Bile duct
LocM, 150 dilute contrast medium ensures that calculi will not be obscured

equipment

1) Side-viewing endoscopy
2) Polythene catheter
3) fluoroscopy unit with spot film facilities.

Patient Preparation

1) Nill orally for 4h prior to procedure.
2) premedication
3) Antibiotic Cover.

Preliminary film

prone AP and LAO of the upper abdomen, to check for opaque gall stones and pancreatic calcification

Technique

- The Pharynx is anaesthesized with 4% xylocaine spray and the patient is given diazepam 5mg min until sedated.

- The patient the lies on the left side and the endoscope is introduce

- the ampula of vater is located and the patient is turned prone.

- A small test injection of contrast under fluoroscopic control is made to determine the position of the cannula.

Films.

Pancreas

1) Prone, both posterior oblique

2) Bile duct

a) Early filling films to show calculi.

a) Prone - Straight and posterior oblique

b) Supine - Straight both oblique.

(2) films following removal of the endoscopy, which may obscure the duct.

(3) delayed films to assess the gallbladder and emptying of the common bile duct.

After Care

1. Nill orally until sensation has returned to the pharynx (0.5-3 h)
2. pulse, temperature and blood pressure half hourly for 6 h.
3. maintain antiblotic if there is billiary or pancreatic Obstruction
4. Serum/ uninary amylase if pancreatitis is suspected.

Complication

Due to Contrast medium

1. Allerg reaction
2. Acute pancreatitis.
more likely with large Volume, high pressure injection

Due to technique.

Local

Damage by the endoscope e.g rupture of the Oesophagus, damage to the ampula, proximal pancreatic duct and distal common duct.

Distant

Bacteraemia, Septicaemia, aspiration pneumonitis.

Question No=5

Answer

Conventional Radiological Procedure

Method

- Single Contrast (contraft)
- double contrast (air)

Indication

- C joint Capsule
- joint Cavity
- Synovial membrane
- Articuler Cartilage
  fabrium
- ligament
- Tendons
- Loose bodies within joint
- Prothesis assessment

Contraindication

* Active arthritis
* joint infection
* Bleeding problem
* previous sensitivity to contrast media

Equipment

* fluroscopy with spot film devices

Preliminary film

* Routine plain film radiograph
* AP and true lateral of the joint of interest
* Radial and ulnar deviation in wrist joint

After Care

* Avoid driving for two days
* joint pain may occur.

Complication

* Allergic reaction
* Synovitis
* Pain & capsular rupture
* Traum to adjacent structure e.g. nerves and vessel.

Knee joint Arthography

- The patient is lying supine.
- Using sterile technique the skin and underlying soft tissue are anesthetized posterior to the midpoint of the patela.
- The needle is then removed and the limb is exercised

for uniform distribution of contrast.

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

Hip Arthography

- the patient is lying supine with legs internally rotated so that the entire length of femoral neck is visualized.
- the position of the femoral vessels are visualized to avoid puncture.
- the skin is clean using aseptic technique
- any fluid in joint as aspired and sent for examination.

Shoulder Arthography

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

* Using sterile technique the skin and soft tissue are anaesthetized 1cm inferior and 1cm lateral to the coracoid process a spinal needle 21g inserted vertically to the joint space.

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

Question NO=4

Answer

Radiological procedure

Hysterosalpingography.

is also known as uteroSalpingography, is a fluroscopic examination of the uterus and the fallopian tube

it is performed to investigate the shape of the uterine cavity and the shape and patency of the fallopian tube.

- Hystero means uterus
- Salphingo means fallopian tube
- Graphy means to Draw.

Indication

1) infertility
2) Recurrent miscarriage
3) following tubal surgery
4) assesment of the integrity of a Caesarean Uterine Scar.

Contra indication.

1) Pregnancy

2) A pubrulent on inspection of the vulva or cervix, or diagnose PID in the preceding 6 months.

3) Recent dilation and Curettage or immediately post menstruation.

4) Contrast Sensitivity.

Contrast medium.

- oily contrast medium is no longer recommended
- HOCM or LOCM 300. volum 10-20 ml.
- LOCM have no advantage with regard to image quality or side effect but the nonionic diamer, iotrolan, is associated with a lower incidence and decreased severity of delayed pain.

Equipment

1. fluroscopy unit with spot film device.
2. vaginal speculum
3. Vulsellulm for cervix.

Patient preparation.

1) The patient should abstain from intercourse between booking the appointment and the time of the examination unless she uses a reliable method of contraception, or the examination.

2) Apprehensive patient may need premedication.

Preliminary film.

- Coned PA view of the pelvic cavity.

Technique

1) The patient lies Supine on the table with knee flexed, legs abducted and heels together.

2) Using aseptic technique the operator insert a speculum and cleans the vagina and cervix Chlorhexidine.

3) The anterior lip of the cervix is steadied with the vulsellum forceps and the cannula is inserted into the cervical canal.

4) Spasm of the uterine cornu may be relieved by I.V glucagon

5) NB: Opiates increase pain stimulating smooth muscle contraction.

Films

- using the under couch tube

1. As the tube begin to fill
2. When peritoneal spill has occured and with all the instrument removed.

After Care

1. it must be ensured that the patient is in no serious discompart nor has significant bleeding before she leaves.
2. the patient must be advised that she may have bleeding per vagina for 1-2 days and pain may persist for up to 2 weeks.

Complication

Due to the technique.

1. Pain may occur at the following times.

2. bleeding from trauma to the uterus or cervix.

3. Transient nausea, vomiting and headache.

4. infection:- wich may be delayed occur in up to 2% of patient.

5. Abortion:- the operator must be ensure that the patient is not pregnant.

- Due to Contrast medium.

(1) Allergic phnomena- especially if contrast medium is forced into the circulation.

Detectable pathology

Uterine pathology
- Uterine congenital anomalies
- Uterine malignancy
- Adenomyosis
- intra uterine adhesion
- Uterin polyps.

Tubal pathology

- tubal polyps
- tubal malignancy
- tubal spasm- can be physiological
- Salpingectomy.
- hydrosalpinx