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Program

Bs Radiology

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Subject

: Cpp and Cp

Exam

Final term

Q 5

Ans Arthrography⇒ Method :-

- Single contrast
- Double contrast

Indication :-

- Joint capsule torn
- Joint cavity
- synovial membrane
- Ligaments
- Tendon
- Articular cartilage
- Loose bodies within joint
- prosthesis assesment

Contraindication

- Active arthryitis
- Joint infection
- Bleeding problems
- previous sensitivity to contrast media.

Equipment :-

- Fluoroscopy with spot film devices.



:- preliminary film

- Routine radiograph plain film of the Joint and true lateral
- Axial in Shoulder and oblique view / eversion in ankle
- Radial and ulnar deviation in wrist joint

After Care

- Avoid driving for two days
- Joint pain may occur

Complication :-

- (1) Allergic Reaction
- (2) Synovitis
- (3) pain capsular rupture
- (4) Trauma to adjacent structure.

(1) Knee joint Arthrography :-

- The patient is lying supine
- Then full volume of contrast



- Medium (4ml) is injected followed by 40 ml of air for double contrast.

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

→ Using sterile technique the skin and underlying soft tissue are anaesthetised posterior to mid point of the patella.

### \* Hip Arthrography :-

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

→ The skin is clean using aseptic technique

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

→ Any asphre

→ The and

→ Test w Co

\* Show

→ The supi side un clos e T

→ The

remo e

→ the us eye



→ Any aspirated fluid in joint are for examination

→ The needle is then removed and joint is exercised for equal distribution of contrast within

→ Test injection of contrast with demonstrate correct positioning of the needle

### \* Shoulder Arthrography

→ The patients is lying supine with arm of side under examination close to the body external rotation. so

The ~~hand~~ head of the biceps is out of the path of needle

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

→ using sterile technique the skin and soft tissue are anaesthetised to prevent infection



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lateral to the full  
injection 15 ml for  
single contrast  
of air distend the  
synovial ~~150~~ sac.

CO4

## Ang Hysterosalpingography

HSG also known  
as uterosalpingography  
is a fluoroscopic  
examination of the uterus  
and the fallopian  
tubes.

- Hystero mean uterus
- salphingo mean fallopian tubes
- Graphy mean to draw

It is perform to investigate

the shape of the  
uterine cavity and the  
and shape of patency  
of the fallopian tubes.



⑥ ⑧  
\* Indications :-

- ① Infertility
- ② Recurrent miscarriages following tubal surgery
- ③ Assessment to the integrity of a care-year uterine sar.

Contraindication :-

- ① Pregnancy
- a) A purulent discharge on inspiration of the vulva or cervix, or diagnosed PID in the preceding 6 months.
- 3) Contrast sensitivity.
- 4) Recent dilation and curettage or abortion, or immediately post menstruation. This applies only to the risk of contrast medium. Intrauterine.

\* Contrast medium

→ oily contrast medium is no longer recommended.



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→ HOCM or LOCM 300-  
volume 10-20ml.

→ LOCM have no advantage, with  
regard to image  
quality or side effect  
but the nonionic  
dimer. severity of  
delayed pain.

### EQUIPMENT :-

- ① Fluoroscopy unit with spot film device
- 2) vaginal speculum
- 3) No vulsellum forceps
- 4) uterine canula Leech  
wikinson cannula,  
8F paediatric foley  
catheter.

### \* PRELIMINARY FILM

→ Coned PA view of pelvic  
cavity

### \* PATIENT PREPARATION

- (1) Apprehensive patients  
may need  
premedication.



300-  
stage, with  
effect  
of

with spot  
device

eps  
ch

foley

elvic

ents

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(2) The patient should abstain from intercourse between booking and the appointment time unless an examination method of contraception or the use of reliable method of examination

can be booked between the fourth and tenth day in a regular 28 day cycle.

Technique

\* Technique :-

(1) The patient lies supine on the table with knee flexed leg abducted and heel together.

(2) using aseptic technique to operator inserts and speculum and clean the vagina and cervix with chlorhexidine -

(3) Spasm of the uterine cornu may be relieved by 10 µg glucagon.



⑨ Aspharals

NB opiates increase pain  
by stimulating smooth  
muscle contraction

5- case must be taken  
to expel all air bubbles  
from the syring and  
cannula, as these would  
otherwise cause confusion  
interpretation.

contrast medium injected  
slowly under  
intermittent fluoroscopic  
control.

Films :-

using the undercouch  
tube

① As the tube begin  
to fill

2) when peritoneal spill has  
occurred and with  
all the instruments  
Removed.

AFTERcase :-

(1) The patient must be  
advised that she may have  
bleeding per vagine  
1-2 days and pain



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persist for up to 2 weeks.

2) It must be ensured that the patient is in no serious discomfort nor has significant bleeding before she leaves.

### Complication

→ Absorption. The operator must ensure that the patient is not pregnant.

→ Infection which may be delayed. occurs in up to 2% of patients and more likely when there is previous history of pelvic infection.

Due to the contrast medium

① Allergic phenomena

→ Transient nausea, vomiting and headache

→ Bleeding from trauma to the uterus or cervix.



②

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\* Detectable pathology

- tubal polyps
- hydrosalpinx
- tubal malignancy
- tubal spasm
- salpingectomy
- salpingitis isthmica nodosa (SIN)

→ obliteration of fallopian tubes

Uterine pathologies

- uterine congenital anomalies
- submucosal uterine fibroids
- uterine malignancy
- uterine -

Q3

Ans ERCP :-

\* Endoscopic retrograde cholangiopancreatography is a technique that combines that use of endoscopy and fluoroscopy to diagnose and treat certain problems



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of the biliary or pancreatic ductal system.  
Although percutaneous transhepatic cholangiography (PTC) has a higher success of demonstrating bile ducts, ERCP has three advantages

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

### Indication :-

- ① Investigation of extrahepatic biliary obstruction
- (2) Post cholecystectomy syndrome
- 3) pancreatic diseases.
- 4) Investigation of diffuse biliary disease.

### Contraindication

- ① Australia antigen positive  
HIV positive.

- 2) Acute pancreatitis
- 3) Severe cardiorespiratory disease
- 4) When glucagon
- 5) previous gastric surgery.
- 6) Pancreatic pseudocyst

### Contrast medium

Pancreas

100cm 240

Bile duct

100cm 150

contrast medium ensures that calculi will not be obscured.

### Equipment :-

- 1) Side-viewing endoscope.
- 2) polythene catheters

### Patient preparation

- 1) Nil orally for 4h prior of procedure
- 2) premedication
- 3) Antibiotic cover.

Preliminary film

→ Opaque



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Gallstones and pancreatic calcification.

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film

(1) Pancreas

- ① prone, both posterior obliques ~~late ducts~~
- ②

(2) Bile ducts

- Early filling film
- prone
- supine
- 

(3) film following removal of the endoscope

4) Delayed film to assess the gallbladder common bile duct.

Complication :-

Medium Due to contrast

① Allergic reaction

② Acute pancreatitis  
Due to technique

local :- damage by the endoscope

Q1  
Ans :-

## RETROGRADE PYELOURETEROGRAM

-1) 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 system injection as with CI urogram (CTU) or intravenous urogram (IUU).

→ Normally urine is produced in the kidney and travel down the ureter in an antegrade fashion and is then stored in the bladder. Term Retrograde is used in reference to the direction the contrast is introduced.



## RETROGRADE

## \* PYELOURETERO- GRAPHY

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

### Contraindication

- 1) Acute urinary tract infection.
- 2) Pregnancy
- 3) Recent instrumentation.

### 1) Contrast Medium

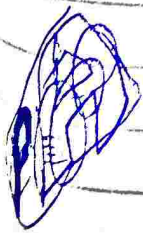
HOCM or LOCM  
150 - 200 - ie not too dense obscure small lesions.  
10ml.

### ii) Equipment

fluoroscopy unit

### iii) Patient preparation

As for surgery



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Distant

- Bacteraemia
- septicæmia
- aspiration pneumonia
- hyperamylasaemia



Hydro nephroticosispreliminary film

Full length supine AP  
abdomen when examination  
perform in the  
x ray department.

⇒ INDICATIONS :-

- 1) Demonstration of the site, length, lower limit and, if possible the nature of an obstructive lesion
- 2) To aid in stent placement
- 3) Better characterization of ureteral or pelvicalyceal abnormalities seen on IUV or CTU
- 4) Demonstration of the pelvicalyceal system after an unsatisfactory excretion urogram



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Film

Using the undercouch tube

1) Supine:-

2) both 35° PA of ureter  
NB of the anterior obliques  
of the ureter.

After care :-

1) Post anaesthetic observation

2) prophylactic antibiotics  
may be used.

complication

\* Due to anaesthetic  
complication of general  
anaesthesia

\* Due to technique

1) introduction of infection

2) mucosal damage to  
the ureter

3) perforation of the ureter

\* Due to contrast medium

① → chemical pyelitis :- If there is  
stasis of contrast medium.



→ Extravasation due to over distension of the pelvis. This is usually asymptomatic but may Result in pain fever and rigors

Technique:-

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

⇒ The physician that uses a BF or bF open ended or cone tipped that ureter that need to be image-

→ If there is pelviureteric junction obstruction the contrast medium in the pelvis is as pirted. first to 10 cm below

Renal pelvis and then to just above the ureteric orifice. About 2ml of contrast medium are injected to each of these level and film taken.



INTRAVENOUS PYELOGRAPHY :-

\* An intravenous pyelography also called intravenous urography (IVU) or excretory urography (EU) is a radiological procedure used to visualize abnormalities of the urinary system including the kidney ureters and bladder (renal parenchyma)

INDICATIONS

=> check for normal function of kidney

=> check the cause of the ureters

=> assess for synchronous upper tract disease in those with bladder transitional cell carcinoma (TCC)

=> check for ~~for~~ Anatomy variants or congenital anomalies

Contraindication

- ① Contrast allergy
- ② Hepato renal syndrome



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→ Raised serum creatinine

Contrast Media

HOcm or LOCM 3-70 are acceptable but for the following high risk should receive LOCM.

⇒ Poorly hydrated patients

⇒ Patient with diabetes, myelomatosis or sickle cell anaemia

⇒ Those with Renal or cardiac failure

Adult Dose :-

50ml

paediatric dose :-

1ml kg 1

### Patient PREPARATION

1) No food for 5h prior to the examination. Dehydration is not necessary and does not improve image quality.

2) patient should preferably be ambulant



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for 2h prior to the examination  
to Reduce bowel gas

3) The Routine administration of bowel preparation improves the diagnostic quality of the examination and its use makes the examination more unpleasant for the patient.

## PRELIMINARY FIM

① Supine full length  
Ap of the Abdomen

position of overlying may  
be further determined  
by.

2) supine Ap of renal areas

3) 35° posterior oblique views.

4) Tomography of kidney  
at the level of third  
of AP diameter of the  
patient.



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## Technique

⇒ The median antecubital vein is the preferred injection site because its flow is retarded in the cephalic vein as it pierces that calvepectoral fascia.

⇒ Upper arm or shoulder pain may be due to stasis of contrast medium in the vein. This is relieved by abduction of the arm.

## FILMS

- (1) Immediate film  
the renal Area Exposed about 10-14 Ap of
- 2) 5 min Film  
Ap of the renal area

\* The ~~aim~~ aim is to produce better pelvicalyceal distension. Compression is contraindicated

- ① After renal trauma
- 2) After recent abdominal surgery.



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## ADDITIONAL FILMS

- oblique of kidney. ① 35° posterior
- 2) Tomography
  - 3) prone Abdomen
  - 4) Delayed film - may be necessary for 24 h After injection in cases of obstructive uropathy.

## Complication :-

— ⇒ Due to contrast medium

⇒ Due to technique incorrectly applied abdominal compression may produce intolerable discomfort or hypotension.

The End