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Q. 1.2

Ans.3

We will perform a procedure called retrograde pyeloureterography (RPUG). This procedure uses contrast dye in urinary tract to take a better X-ray image of the urinary system.

General protocol for RPUG:

- * Do not eat or drink for 4-12 hours before the procedure.
- * Take laxative in order to ^{clean} out the digestive system.
- * Remove jewelry and some cases your cloths too.
- * Lie flat on a table with yer legs up. (dorsal lithotomy position).
- * Insert intravenous tube in a vein of patient arm for anesthesia.
- * Use the cystoscope to identify the left and right ureteral orifices.
- * Push SF or bf open-ended or cone tipped are used to cannulate the ureter that needs to be imaged.

- ★ Radiographs are taken to ensure proper placement of the catheter.
- ★ Inject contrast through catheter typically 5-8 ml are needed to completely opacity the ureter and renal collecting system. Then several images are taken using fluoroscopy.
- ★ If there is pelviureteric junction obstruction, the contrast medium in the pelvis is aspirated. The films are examined and if satisfactory, the catheter is withdrawn, first to 10 cm below the renal pelvis, and then to lie just above the ureteric orifice. About 2ml of contrast medium are injected at each of these levels and films are taken.
- ★ After the procedure, you'll stay in a recovery room until you wake up and your breathing, heart rate return to normal.
- ★ you'll be prescribed pain medication such as acetaminophen. Don't take aspirin, that can increase your risk of bleeding.

(3)

Q: 213

Ans: 13

"Intravenous pyelography" are usually used for assessing congenital anomalies of renal system.

→ An intravenous pyelogram is a test that uses an X-ray and dye to show your kidney and urinary tract. It takes images of your kidney, bladder and ureters.

INDICATIONS:

- Check for normal function of kidneys.
- check for congenital anomalies.
- check the course of the ureters.
- assess for synchronous upper tract disease in those with bladder transitional cell carcinoma (TCC).

Contraindication:

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

Contraindication:

- ★ HOCM or LOCN 370 are acceptable.
- ★ Adult dose 50 ml
- Paediatric dose 1ml/kg-I

(4)

Patient Preparation:

- Do not eat or drink after mid night or the night before the procedure.
- Ask for any history of renal disease, Allergy to drug.
- Patient should, preferably, be ambulant for 2 hour to the examination to reduce bowel gas.
- Dehydration are not necessary.
- patient should receive large-bore catheter prior to examination start time.

Preliminary Film:

- ~~Low kVp (65-75)~~
- ~~high mA (600-1000)~~
- 1) Supine full-length AP of the abdomen, in inspiration.
- 2) Supine AP of the renal areas, in expiration.
- 3) Tomography of the kidney at level of third AP diameter.

Technique:

- for injection site median antecubital vein is preferred.
- A 19-G needle is advanced up the vein to reduce the risk of perivenous injection and the injection is given rapidly as a bolus to maximize the density of nephrogram.

Films :-

- Low kVp (65-75)
- high kVp (600-1000)

1. Immediate film: AP of renal areas.

2. 5-min film: AP of the renal areas. To determine if excretion is symmetrical and is invaluable for assessing the need to modify.

3. 15-min film: AP of the renal areas. There is usually adequate distension of the pelvicalyceal system with opaque urine by this time.

(4) Release film: supine AP abdomen. If this film is satisfactory, the patient is asked to empty their bladder.

(5) After micturition film: This may be full-length abdominal film or a coned view of the bladder.

Complications :- Due to the contrast medium.

- Due to the technique.

Equipments :-

- Abdominal compression equipment
- Pads and immobilization aids.
- IV intravenous equipment.
- 50ml syringe.
- filing needle.
- skin prep.

(6)

Q.3.3

Answer

For extrahepatic biliary obstruction the procedure which is performed are "Endoscopic Retrograde Cholangio-PAN Rectography" (ERCP).

→ It is a diagnostic and interventional procedure technique using both endoscopy and fluoroscopy for examination of biliary tree and pancreatic ducts.

- It involves passing an endoscope to the descending duodenum and cannulating the ampulla of Vater, after which contrast can be injected outlining the biliary tree and various procedures can be performed.

Protocols: patient will be asked to remove dentures and a gown will be given.

- The morning of your surgery, you may take medications your doctor told you are allowed.

→ Sometimes ERCP must be done under general anesthesia.

⇒ Full physical examination might be needed in order to make sure you are healthy enough for surgery.

→ The patient will then lie on his left side.

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- Then insert the endoscope through the mouth of patient.
- The endoscope will travel to the small intestine by passing the esophagus and stomach.
- The catheter is now inserted into ampule of Vater, after confirming it that all the air bubbles are gone.
- Now to confirm the position of cannula, small amount of contrast is injected with fluoroscopic control.
- Now the pancreatic duct and biliary tree are filled with the contrast.
- Images are taken.
- Bile sample can be sent for culturing if there is suspected biliary obstruction!
- Film that are taken is:
 - * Posterior oblique
 - * Straight oblique.
 - * Posterior oblique in prone position
- Stay in the procedure area for one to two hours after ERCP.
- You may eat normally and take regular medicines after the procedure.

Q:4:3

Ans:3 Hysterosalpingography is the recommended procedure for evaluating the cause of female infertility.

⇒ A HCG or uterosalpingography is an X-ray procedure used to see with the Fallopian tubes are open and if the inside of the uterus is normal.

- HCG usually take less than 5 minutes to perform.

Procedure:3

(1) Indications:3

- ★ Infertility.
- ★ Assessment of the integrity of a Caesarean uterine scar.
- ★ Repeated miscarriages.
- ★ Following tubal surgery.

Contraindication:

- ★ HCG should never performed on pregnant women.
- ★ Complication of the procedure include allergic reaction to the material used, intravasation of the material and if oil based material used embolisation.
- ★ A purulent discharge on inspection.

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of the vulva or Cervix, for * abortion
or immediately post-menstruation. This *
applies only * hI or diagnosed
PID in the preceding 6 months.

Contrast medium:

- * HOCM or LOCM 300. Volume 10-120 ml
- * LOCM have no advantage with regard to image quality or side effects but the nonionic dimer, iotrolan, is associated with a lower incidence and decreased severity delayed pain.
- * oily contrast medium are not recommended.

EQUIPMENT:

- * open-sided speculum
- * Tenaculum.
- * sponge stick.
- * Fluoroscopy unit with spot film device.
- * Antiseptic.
- * uterine cannula.

Patient preparation:

Obtain patient from intercourse between booking the appointment.
The enamination can be booked between the fourth and tenth day in a patient with regular 28 day cycle.

- (2) Apprehensive patient may need premedication.

Preliminary film:

Coned PA view of the pelvic cavity.

Technique:

- The patient lies supine with knee flexed, legs abducted for pelvic exam.
- (2) A device called a speculum is inserted into the vagina. It holds the walls of the vagina apart to allow the cervix to be viewed. The cervix is cleaned.
- (3) One of two methods may be used to insert dye. In one method, the cervix is grasped with a device to hold it steady. An instrument called a cannula is then inserted into the cervix. In the other hand, a thin plastic tube is passed into the cervical opening.
- (4) The spe Expell all air bubbles from the cannula and syringe, as these would cause confusion in interpretation. Contrast medium is injected

Slowly under intermittent fluoroscopic control.

5) Spasm of the uterine cornu may be relieved by i.v. glucagon.

Films using the undercouch tube:

- 1) As the tubes begin to fill.
- 2) When peritoneal spill has occurred and with all the instrument removed.

Complication

- Infection - which may be delayed. Occurs in up to 2% of patients and more likely when there is a previous history of pelvic infection.
- Abortion: The operator must ensure that the patient is not pregnant.
- Due to the contrast medium

Allergic phenomena - especially if contrast medium is forced into the circulation.

Aftercare → Advice the patient that she will bleed per vagina 1-2 days and have pain upto 2 weeks.

Q:5:3 "Arthrography" are used for diagnosis the disorder of joint, ligaments and tendons.

⇒ Arthrography is a type of imaging test used to look at a joint, such as the shoulder, knee, or hip.

- It may be done if standard X-ray do not show the needed details of the joint structure and function.

Procedure:

Method:

- Single contrast
- Double contrast (air)

Indications:

- Ligaments
- Tendons.
- joint cavity
- synovial membrane
- prosthesis assessment
- joint capsule torn.

Contraindication:

- Bleeding problems
- Active arthritis.
- previous sensitivity to contrast media.

Equipment:

* Fluoroscopy with spot films device

Preliminary film:

- 1) Plain Radiography.
- 2) AP and lateral view of the interested joint.
- 3) Radial and ulnar deviation in wrist joint.

Steps :-

- (i) The patient should be positioned on table top for the procedure.
- (ii) An x-ray of the interested joint may be taken, for
- (3) By use of a small needle, the anesthetic then injected into the required area.
- (4) After anesthesia, a long needle is used and is injected in joint.
- (5) The CM is injected in joint space and also sometimes air. At the same time doctor monitors it using Fluoroscopy.
- (6) After the needle is removed the patient is asked to move the joint for CM mixing.

(7) The examination usually takes 30 minutes.

Aftercare:

→ (i) Patient should avoid driving for two days.

→ (2) Joint pain may occur to the patient.

Complications:

(2) Synovitis.

(2) Allergic Reaction.

(3) Traumatic injury to adjacent structures.

(4) Pain capsular rupture.
