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Qno # 1:-
If their is non-visualization of ureteral Segment on IVU and CTU, which alternative Proceclure will you perform? what is the general protocol for performing the Proccdure?

Answer:
If their is non-visualization of ureteral Segment on IVU and CTU, we will perform the RPUG (Retrograde pyelogram) as an alternative Procedure, because in this procedure the collecting system is evaluated by directly injecting radiographic contrast through catheters rather then using excretory phase as in CTU and IVU.

Protocol for RPUG :-

- When the Patient has been anesthitized, the Procedure begins by ensuring Proper Positioning of the Patient in dorsal lithotondy Position.
- Afler Proper Positioning a cystoscopy is performed inorder to identify the right and left ureteral orifices.
- The Physician then uses a 5F or 6F open-ended catheter to cannulate the ureter that needs to be imaged.
- At this point, radiograph are taken to ensure proper placement of catheter.
- Afler Confirmation of placement the physician may inject the contrast through the catheter. Usually 5-8ml of Contrast is being injected and needed to completely opacify the ureter and renal collecting system. Afler injection of contrast several images will taken by using flouroscopy.
- If their is pelveuritric 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are examined and if satisfactory, the catheter is withdrawn, first to 10 cm below the renal pelvis and then to lie just above the uretric orifice, About 2ml of contrast medium are injected at each of these levels and films taken.

x ——— x

Q no# 2:-
Which radiological Procedure is commonly performed for assessing Congenital anomalies of renal System? Explain in detail the whole procedure?

Answer:-
The commonly radiological Procedure which is performed for assessing Congenital anomalies of renal sytem is IVP (Intervenous Pyelography) or IVU (Intervenous urography).

Intervenous Pyelography: (IVP).

1- IVP is also Known IVU (Intervenous urography). It is an x-ray examination of the Kidneys, Ureters and urinary bladder that uses iodinated contrast

material injected into veins.

Indications :-

- normal function of kidney
- Congenital anomalies
- Course of the Ureters
- Uretric obstruction
- Assess to bladder tansitional cell.

ContraIndications:-

- Contrast allergy
- Hepator-renal Syndrome
- Thyrotoxicosis
- Raised serum creatinine
- Pregnancy
- any renal disorder

Contrast media:-

- HOCM
- LOCM mostly

Those people having high risk should mostly recieved the LOCM

Dose:-

- Adult ⇒ 50 ml
- Paediatric ⇒ 1 Kg = 1 ml

Patient Preperation:-

- No food for 5 hr Prior to examination
- Bowel Preperation is important as abdomen Shold ideally be free of radio-opaque fecal matter and gas.
- Laxatives :- Dulcolax 2-4 tabs at bed time for 2 days prior to Procedure
- Fluid deprivation but don't dehydrate the patient.
  Bowel Preperation is now generally regarded as unhelpful and it is unpleasant to the Patient
- Patient should follow the low residue diet for 1-2 days prior to exam.
- Patients with multiple myeloma, high uric acids levels or diabetes should be well hydrated before IVP exam.
  → Dehydration leads to increase risk of renal feilure.

Preliminary Films:-

evaluate

* Supine full length of Abdomen AP in inspiration
* Supine AP of the renal areas in expiration
* 35° Posterior oblique view

Technique :-

* Bowel Preperation may help to visualize the entire ureters and upper collecting systems.
* Role of dehydration is Controversial
* A KUB to allow determination of adequate bowel preperation, confirms correct positioning, and expose kidney stones or bladder stones.
* Contrast is administered IV (usually in median antecubital vein)
  Contrast dose is 1 ml per pound of body weight which maximum may of 150 ml.
* A film is taken at 5 min and then additional films are taken at intervals
* Postvoiding films are obtained to

evaluate the presence of outlet obstructions, Prostate enlargement and bladder filling defects including stones and cancer.

Special IVU films:-

Oblique film:-
- ★ Better visualize the calyceal system.
- ★ filling defects that may overlap in the routine AP views

Prone film (Abdominal Compression)
- ★ better imaging the ureter (ureter in a dependent position distended)

Upright film:-
- ★ renal ptosis of contrast media in severely hydronephrotic systems.

Postvoid film:-
- ★ evaluating BOO,
- ★ diverticula
- ★ filling defects in the bladder

After micturition the x-ray of bladder at 15° caudad, this film is assess bladder emptying and regain of its original position

Complications:-

- Minor reactions:-
  - → Nausea

→ flushing
→ articaria
→ headache and vomiting
→ Pain at injection site

Major reaction..

→ Seizures
→ Lyrengeal spasm
→ Arrythmeer
→ Cardia arrest recorded in 1/1000

Q no#3.
Which Procedure is Performed for investigation of extrahepatic billiary obstruction ? Discuss the general Protocol followed for the Procedure.

Answer:
Inorder to investigate the extra hepatic billiary obstruction we should Perform the ERCP (Endoscopic retrograde cholangio pancreatogra phy). Procedure.

Protocol for ERCP Procedure:.

Techniques used in ERCP include endoscopic: papillectomy, Sphincter of

oddi manometry, sphincterotomy, endoscopic papillary balloon dialation, stone removal, tissue sampling, placement of biliary & pancreatic stunt. cholangiopancreatoscopy and biliary and Paincreatic drainage.

* The Procedure starts with passing the duodenoscope through a mouthguard. Duodenoscope is then advanced through stomach Pylorus into the duodenal bulb. The scope should be advanced to the second Part of the duodenum to visualize the major duodinal papillae, a Protuberance at the junction of the horizontal & vertical duodenal folds. cannulation of the major duodenal papilla is done.
* The recommended wire guided technique is done through a guide wire that Passes under flouroscopy into the common bile duct or pancreatic duct before contrast injection.
* On the other hand, the standard contrast-assisted method involves contrast material injection after introducing the cannulation device tip into the major duodenal papilla orifice to assure Proper Positioning

* when the contrast pass through it when their is any kind of obstruction in the hepatic ducts it will gets stuck and identify it by taking radiographs.

* After confirmation of obstruction then the placement of temporary stent occur inorder to ejaculation of substance.

Question no# 4:-

Answer:-

we will recommend the Hysterio Salphingography (HSG) procedure for evaluating the cause of female infertility.

Hysterosalphingography (HSG)

It is a flouroscopic examination of the uterus and the fallopian tubes

* It is most commonly used in the investigation of infertility or recurrent abortions.

Contrainclication:-

* Pregnancy

- Active pelvic injection
- recent uterus surgery

Contrast medium:.

- NOCM or LOCM

10–20 ml

isotrolan is used just to relived the long lasting pain of the examined part.

Equipments:.

- flouroscopic unit with spot film
- vaginal speculum
- vulsellum forceps
- Uterine cannula

Patient Preperation & techniqus.

The patient will prepared for examination by removing all its radiop aque objects eg jewellery or metals. Medication will be given just to stabalize his normal condition.

The coned PA radiograph will be taken before examination.

The examination begins by lying patient back on the table with knees bent, feet will be held up with stirrups. The doctor will insert a speculum in the vagina, clean the cervis and insert

a catheter.
After that the doctor will adjust the patient under the floxuroscope and starts to injecting the contrast in uterus through catheter. The images will be taken spontaneously and the contrast more across the uterus to gallopia tube, when their is any obstruction the radiograph will clarify its position and contrast remain stuck.

Complications:-

- abdominal cramping
- Pervaginal spotting
- pelvic infection
- contrast reaction

Detectable pathalogies:-

- Uterine congenited anamolies
- adenomyosis
- uterine polyp
- uterine malignancy
- hydrosalpinx
- tubal spasm
- tubal polyps

Etc

Q no # 5:

Explain in detail the conventional radiological procedure used for diagonosing the disorder of joints, ligaments and tendons.

Answer:

Arthography is the procedure which is used to diagonox the various disorders of joints, ligaments etc.

Arthography:-

It is a commonly performed procedure in musko-skeletal radiology, which can refer to both an injection into a joint and cross sectional imaging after a joint is injected.

Indications:-

Arthograms are used for variety of indications which includes:-

* Laberal tear after shoulder dislocation
* hip laberal tears
* partial - thickness ligamant and tendon tears
* pain relief
* retair of repaired tendon

In it flouroscopy with Spot film is used.

Contrainclications:-

- Active Arthritis
- joint injection
- Bleeding Problem
- Sensitivity

Method:-

- Single contrast (contrast)
- Double Contrast (Air)

Following Priliminage image will taken

- AP & Lateral of interest joint.
- Axial in Shoulder and oblique in ankle

Complications:-

- Allergic reaction
- Synovitis
- pain Capsular rupture
- Trauma to adjacent Structure.

Technique.

* The patient will asked to remove clothes and given a gown to wear.
* He will be examined in the procedure room.
* x-rays must be taken before the injection of contrast dye for compare the picture taken after dye is injected.
* The skin around the joint will sterile drapes & cleaned with antiseptic.
* The interest area will be numbed by using local anesthetic.
* If their is fluid in joint it will be removed by aid of long syringe.
* The contrast will injected using a needle into joint and asked for moments so that contrast spread eg incase of ankle we asked to walk in few seconds, Multiple x-rays will taken and tries to find the disorders.