Paper — CRP & CP

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Discipline — BS. Radiology

By — Muhammad Umar

Sumitted to — Mam. Maheen Gul

ID — 15280

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Q 1
Ans

If urethral segment not visualize on IVU & CTU, a Retrograde pyelogram is an alternate Procedure to image the urethral segment in better manner.

RPUG Procedure is used if there is still concern for evaluating the collecting system after IVU or CTU.

General Protocol for performing the RPUG (Retrograde Pyelogram yetrography)

→

In this study the collecting system is evaluvatig

→ Contrast is injecting directly through catheter

→ excretory Phase is not utilize in Procedure like CTU & IVU for contrast administraton.

→ The urine is normaly produced in the kidney and move down through ureter in ante grade fashion

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

→ This procedure is performed in Radiology department in hospital by a urologist.

→ usually general anesthesia is given to the patient.

Indication :—

→ Demonstrate the site, lenght & Nature of obstructive lesion

→ Demonstrate the Pelvicalceal system

→ stent placement

→

→ Patient with IV contrast Allergy can perform RPUG with low Risk.

Contraindication :-

→ Urinary tract infection (acute)

→ Pregnancy

→ Recently Instrument implemented

Contrast Medium :-

HOCM or LOCM 10ml

Equipment :-

Floroscopy unit.

(6)

Patient Preparation :-

As for surgery

Preliminary Film :-

When the examinarm is

Permermed in radiologic department

Full length supine AP abodem

Film has taken.

Technidue :-

When the anesthesia is given

to the Patien, Procedure

is starts by positioning

the Patrent in

dorsal lithotomy positian.

→ After positioning cystoscopic Procedure is performed by doctor via cystoscope to demonstrate left & right orifice of ureteral.

→ The doctor use 5F or 6F open ended or cone tipped catheter to cannulate the ureter that need to be imaged

→ to ensure placement of

catheter radiograph are taken

→ Then 5-8 ml contrast is injected through catheter to carry the ureter & renal collecting system. After this several images are taken by fluoroscopy.

→ In case of pyeloureteric junction obstruction, contrast in the pelvis aspirated

→ examined the film and

If satisfactory, withdrow the catheter;

1st 10cm below the renal pelvis, and the above ureteric orifice, at each level 2ml contrast is injected and films taken.

Films:—

→ Supine PA of the ureter.

→ both 35 degree anterior oblique of the ureter

After care:—

→ Post-anaesthetic care

→ Prophylactic antibiotic used.

Complications :—

→ Due to anesthesia

→ Due to technique

→ Infection, mucosal damage → Perforation by catheter.

Due to contrast

→ Adverse reaction, chemical pyelitis & Extravasation.

→ Pain, Fever & risers may also associated.

QNO:2

Ans The commen radiological Procedure performed for assessing congenital anomalies of renal system is interveneous Pyelography (IVP)

INTRAVENOUS PYELOGRAPY :—

It is also known as Intevenous urography or excretory urography is radiological procedure use Diagnose abnormalities in unnary system

and kidney.

→ IVP use contrast to highlight the abnormalities in UT system.

Indication :—

→ Determine the Normal function of the kidney

→ Demonstrate the congenital anomilies of Renal system

→ check the course of ureter

→ Identify & localizes

a ureteric obstruction

→ Assess for synchronous upper tract diseases in those with bladder transicnal cell carcinoma

Contra indication :->

→ Contrast Allergy

→ Hepato-renal syndrom

→ Thyrotoxicosis

→ Raised serum creatinine.

Contrast agent :—

HOCM or LOCM 370

while high risk group

should receive "LOCM".
such as

→ Infants, small children & older age.

→ Renal & cardiac failure

→ Patient with diabetes, myelomatosis or sickle cell anaemia.

→ Previously allergic with LOCM.

Adult dose 50 ml

Paediatric dose

1 ml per 1kg

Patient Preparation :—

→ No food should given for 5 hour before the examination

→ Dehydration is not necessary & doesn't improve image quality

→ To reduce bowel gas patient should ambulant 2 h Prior examination.

→ mild laxative should give before examination

→ Patient history should taken if there are allergy

→ Asked the patient to remove the radioopaque object

→ If the patient is contrast allergic methyle prednisolon 32mg orally 12 & 2h prior inj of contrast in addition to ensure that a LOCM is used

Preliminary Film:-

1) → During Inspiration supine,

Full length AP of the abdomen is taken

→ The cosse level lower border of the symphysis pubis and beam is centered to the mid line at the level of crests

2) during expiration supine

AP of the renal areas

Ee

beam centered to the

mid line at lower costal margin level.

3) 35° posterior oblique view

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

Techniques :-

The preferred Injection site is median cubital vein because flow is retarded in cephalic vein as it

pierce thr clavipectral fossa.

→ In this procedure iodine containig contrast is injected in arm

→ Contrast agent collecting in kidney, ureter & bladder than sharply appear white (bright) on x-ray image

→ A IVG needle is used injection is given rapidly as a bolus

to minimize the density

d) nephrogram.

→ upper arm and shoulder pain occur due to contrast stasis in vein, pain can relieved by abduction.

Film :—

1) Immediate film :—

→ AP of the renal areas

→ this film is expesed 10–14s after the injection

It demenstrats Nephrogram, Renal tubuls & renal Parenchyma

2) 5-min Film :—

→ AP of the Renal areas

→ this Film is determine excretion is the symmetrical & invaluable to assess the need of modifying technique i.e further contrast is injected IV over appreciation

→ A compression band is applied

around the patient abdomen
& positioned the balloon midway
between the anterior superior
iliac spine i.e over the
ureter to cross the brim

Contraindicated Compression :-

→ abdominal Surgery

→ Renal trauma

→ large abdominal mass

→ If 5 min film show
already distended cycle.

3) 15-min Film :—

→ AP of the renal areas : this opaque urine associated with pelvicaleal → released compression of pelvicaleal :- demonstration is achived

4) Release Film :—

Supine AP abdomen

→ demonstrate visible urinary tract , & asked patient ~~the~~ to empty bladder

5) After Micturation :—

always based on radiological & clinical finding to earlier films

Additional films :—

1) 35° posterior oblique of kidney, ureter or bladder

2) Tomography of overlying shadow

3) 30° caudad to throw a focal loden transverse colon clear of the kidneys.

4) → Prone abdomen

5) Delyed film about 24hrs

Complication :-

→ complication occur due to contrast media

→ Due to technique

e.g compression.

Q NO 3

Procedure performed for Investigation of extra Hepatic billary obstruction

Ans The procedure performed for Investigation of extra-hepatic billary obstruction is ERCP (Retrograde cholangio pancreatography)

CERCP

→ ERCP is a diagnostic procedure designed to

examine disease of the liver, bille duets and Pancrease.

→ ERCP is usually best well performed under general Anesthesia, It may also performed with IV sedative

→ Via ERCP we can obtain important diagnostic information that are not possible with other proceedure e.g MRI, Ultrasound, CT scan

→ It is used to locate the papilla of valer (A small nipple like projection with opening leading to the bile ducts & pancreatic ducts.

→ It has useful therapeutic Potential

→ It has advantage over PTC because it has the Poteney to visualize ~~the~~ Σ, Biopsy the ampullary lession And also demonstrate the

biliary tree & panoreatic duct

General Protocal :-

Patient preparation :-

The stomach should be empty for best possible examination

→ The Patient should not any thing after mid night on the evening preceding the excom

→ No Liquid would taken 8 hr before the procedure

procedure performed early

morning

→ Antibiotic cover

Equipment :—

→ side view endoscope

→ Polythen catheter

→ Fluoroscopic unit with

film devices.

Preliminary film :—

→ check for opaque

gall stone & Pancreatic

calculi the prone AP,

Ee LAO of the upper abdomen should be taken

Techniaue:—

→ To decrease gag reflux local anesthesia will be give to the patient.

→ medicalzen for relaxation

Ee sedation should be given vid IV route.

→ I some case physician donot use local anesthesia if the patient is allergic

to xylocaine or connot bears taste of local anesthesia.

→ The patient is lying on the left side on the x-ray table the IV medication is given

→ And then isert the instrument gently via mouth to deudenum

→ The instrument is moved through food pipe net

through air pipe the above procedure is'nt apply if general anesthesia is given

→ When ampula of water located patient turned to prone

→ A small plastic catheter is inserted to passed through an opening channel of the endoscope into the bile duets or Pancreatic ~~bile~~ duct

Contrast material (dye) is then injected and x-ray are taken of the bile duct and pancreatic ducts.

Another open channel in the endoscope also allow other instruments to be passed through it in order to perform biopsies.

→ To insert plastic or metal stents or tubing to relieve obstruction of the

bile duets or panerestic duets,
Coused by Coneer or scoring

→ And to perform Incision
by using electrocautery
(electric heat)

→ Thier is mimal discomport
except for the Forigien
body sensation in the
throat.

→ The Procedure can last
from 15 mint to an hour
depend about the skill of
Docter

→ ERCP also performed under general light anesthesia

→ Sample of bile is send for culture if there is evidence of obstruction.

Film :-

→ Pancreas losing the fine focal spot

Prone → : both posterior oblique

→ To show the calculi early Film will taken

Bile duct :—

A) → Prone ⇒ straight &
Posterior oblique

B) → Supine ⇒ straight
both oblique

Semi erect to fill lower end of common bile duct.

After care :—

Patient should observed until effect of medicine passed on

→ home resting for some days

→ Antibiotic should given if there is biliary or pancreatic obstruction detected.

→ Temprature & BP should routinly check for each half hour for six hour.

Q NO 4 :-

Ans The radiological procedure is to evaluate the cause of female infertility is Hysterosalphingography (HSG)

Hysterosalphingography :-

→ also called uteroselpingography it is fluoroscopic examination of the uterus & Fallopian tube.

→ It demostrate the shape of uterine cavity & fallopian tube

→ Hysetro mean uterus
Salpingo = fallopian tube

Graphy mean to "draw"

"Indication"

→ Infertility
→ Recurrent miscurage
→ Following surgery
→ Assess the integrity of a caesarean utrine scar.

Contra Indication :—

→ Pregnancy
→ Discharge on inspection of cervix or diagnesed PID from 6 menth
→ Recent dillation, currelage, abortion & menstruation (This applies to oily control due to Intervasation.

→ contrast sensitivity.

Contrast Medium :—

→ Oily contrast is more recommended

→ HOCM or LOCM 10-20ml

→ LOCM has no advantage associated with image quality or side effect.

Equipment :—

→ Fluoroscopy with spot device
→ Vaginal Speculum
→ Vulsellum forcep
→ uterine canula, Leech canula

Olive or 8F Catheter

Patient Preparation :—

→ Patient should not intercourse between booking the appointment & the time of examination with out contraceptive

→ Examination should be at 4-8 days of regular 28 day cycle of menstruation.

→ Fearful patient should need pre-medication

Preliminary Film :—

Coned PA view of the pelvic cavity.

Technique :—

→ The patient positioned supine on table with flexed knees, abducted legs & heels together.

→ With aseptic technique cervix & vagina clean by chlorohixidine

→ Vulsellum forceps steadied anterior lip of cervix & cannula is inserted.

→ Remove all air bubbles from syringes & cannula as these cause confusion in interpretation, slowly contrast injected under fluoroscopy

→ For uterine spasm i.v glucagon

Films :— using under couch tube :—

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

Aftercare :—

→ ensure that no serious discomfort to bleeding
→ Patient must advised for she may bleeding for 1/2 days with pain upto 2 week

Complication :—

Due to techniques :—

1) Pain may occur during instrument insertion & placement
2) Bleeding from cervix & uterus to vagina
3) Nauses, vomeing & headach
4) Intravasation of contrast into veneus during menstruation, curretage, tubal occulusion, cancer & TB of uterine.
5) Chances of infection
6) Abortion

Due to contrast medium:-

→ Allergy

Detectable Pathology by HSG:-

→ Uterine Congenital anomalies

→ uterine Fibroid

→ Metaplasia

→ adenomyosis

→ Polyps

→ Intra uterine & adhesions -

Tubal Paltaleşy :—

Polyp, melaşnaney, Nodesa

Spasm, Salphingiectomy

Ee hydrosalpinix.

QNO:5 :-

Ans Convential Radiological Procedure is used to diagnose the disorder of Joints, ligaments & Tendons is Arthrography.

Arthrography :-

This procedure is used to diagnese the abnormalities of Joints, Ligaments & Tendons

Method :-

→ single contrast
→ Double contrast

Indication :-

→ joint capsule torn

→ joint cavity

→ Synovial membran

→ Ligamente

→ tendens

→ Articular cartilage Labrum

→ Loose bodies with joint

Contra indication :-

if joint infection,

→ active artheritis

→ Bleeding problem

Equipment :— Flaoroscopig

with spot film devices

→ Radiographic table

→ one or two x-ray tubes.

& monitor.

Preliminary Films —

→ Routine plain with film

radiograph

→ AP and lateral of joint

of interest

→ In rest joint ulnar &

Radial deviation.

Axial in shoulder & elbow view & eversion in ankle.

After care :-

→ Patient should be rested for 12 hrs.

→ Instruction of care & changing of bandage

→ avid driving for two days.

→ Joint pain may occur Pain killer should given

Complecation :—

→ Allergic reaction

→ Synovial membrane inflammation

→ Seizures

→ Laryngeal edema

→ Sterile chemical synovitis

→ Sever pain after procedure

→ Trauma to adjacent structure i.e Nerves & vessels.

A) Knee joint Arthrography

→ the position of Patient is supine using sterile technique

the skin and underlying soft tissue are anesthetised posterior to mid of patella

→ Prepare the buffered lidocaine anesthetic solution

→ Insert the needle (22 or 25g) into patella femoral compartment with slightly sublaxing the patella

→ If there is suspected joint effusion consider syringe aspiration of fluid, avoid over dilution of contrast.

Full volume of contrast is injected follow by 40 ml of air for double contrast

→ Needle is removed and limb is excersised for equal distribution of contrast.

Hip Arthrography :—

The patient lyms on supine position

→ leg internally rotated to visible femoral neele,

→ To avoid puncture

Position of femoral vessels located

→ Marker should be parallel to inter tronchanter line plase at the site of entry.

→ local anesthesia will given in 20 or 22g Needle to insert in femoral Neele

→ inject 8ml of contrast under fluoroscopic control

→ Needle is removed & join excersised for equal distribution of contrast

Shoulder Arthrography :—

→ Patien lying supine with arm of side

→ Examinstion closed to body external rotation

→ Biceps head should out of needle insertion.

→ using sterile technique

→ Skin and soft tissue is anesthetized of 1cm inferior to 1cm lateral of coracoid process

~~Spinal~~ Spinal needle is inserted vertcaly

→ 15 ml contrast for single melted with 12 ml air to distened the synovial sac

→ Remove Needle & excersise joint for uniform distribution of contrast medium

The End