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FINAL TERM

SUBJECT: Conventional Radiological
Procedure and Clinical Practice

Q:1

Explain in detail the conventional radiological procedure used for diagnosing the disorders of joints, ligaments and tendons?

ANSWER:

ARTHROGRAPHY :

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 detail.

of the joint structure and function.

Arthrography is a medical imaging procedure which is performed to demonstrate and assess the joint and associated soft-tissue structures for pathologic processes.

These structures are visualized through the introduction of a contrast agent into the joint capsule.

ARTHROGRAPHY MATERIALS :

- 22G 3 1/2 needle
- 25G 1 1/2 needle
- 6cc syringe with lidocaine for skin anesthesia
- 20cc syringe with combination of 1% lidocaine
- Omnipaque 300
- Gadolinium contrast (if MRI perform)

ARTHROGRAPHY Risks :

- Infection
- Pain
- Hematoma

ADVANTAGE :

It is advantageous over MRI in identifying any perforations between the superior and inferior joint compartments.

DISADVANTAGE :

- Expensive
- Patient may develop allergy to contrast medium
- Invasive

MAIN INDICATIONS :

- Longstanding TMJ pain dysfunction unresponsive to simple treatment

- Persistent history of locking
- Limited opening of Unknown etiology

MAIN CONTRAINDICATIONS

- Acute joint infection
- Allergy to iodine or contrast medium.

Q: 2

If there is non-visualization of ureteral segment on IVC and CTU which alternative procedure will you perform?

ANSWER :

If there is non-visualization of ureteral segment on IVC and CTU, ~~which~~ ~~alternative~~ so retrograde pyeloureterography will perform.

RETROGRADE PYELOURETERO- GRAPHY

- Retrograde pyelography is also referred to as retrograde pyeloureterography. The collecting system is evaluated by directly injecting radiographic contrast through catheters, rather than utilizing the excretory phase of contrast excretion after intravenous injection, as with CT urogram (CTU) or intravenous urogram (IVU).
- Urine produced in the kidney and travels down the ureter in an antegrade fashion and ~~is~~ is then stored in the bladder. The term retrograde (moving backwards) is used in reference to the direction the contrast is introduced.

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

PROTOCOLS :

- Doctor will explain the procedure to you and offer you the opportunity to ask any questions that you might have about the procedure.
- You will be asked to sign a consent form that gives permission to do the procedure. Read the form carefully and ask questions, if something is not clear.
- You'll need to fast for a certain period of time prior to the procedure.
- If you're pregnant or suspect that you may be pregnant, you should notify your doctor.

- Notify your doctor, if you've ever had a reaction to any contrast dye, or if you're allergic to iodine
 - Notify your doctor if you are sensitive or are allergic to any medications, latex, tape and anesthetic agent.
 - Notify your doctor of all medications and herbal supplements that you are taking
 - Notify your doctor if you have a history of bleeding disorders or if you're taking any anticoagulant.
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Q: 3

Which radiological procedure is recommended for evaluating the cause of female infertility?

ANSWER

Hysterosalpingography is a radiological procedure which is recommended for evaluating the cause of female infertility.

HSG :
(Hysterosalpingography)

HSG is also known as uterosalpingography, is a fluoroscopic examination of the uterus and the Fallopian tubes

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

- Hystero means uterus
- Salpingo means fallopian tube
- Graphy means to draw

hysterosalpingography or HSG, is an X-ray test to outline the internal shape of the uterus and show whether the fallopian tubes are blocked. In HSG, a thin tube is threaded through the vagina and cervix. A substance known as contrast material is injected into the uterus.

PROCEDURE OF HSG:

The procedure is performed as follows:

- You will be asked to lie on your back with your feet placed as for a pelvic exam. 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.
- The end of the cervix may be injected with local anesthesia.
- One of two methods may be used to insert the 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.

- The speculum is removed, and you are placed beneath an x-ray machine.

- The fluid is passed through the cannula.

- The fluid may be cause cramping if the tubes are blocked.

- X-ray images are made as the contrast medium fills the uterus and tubes.

You may be asked to change position.

- After it spills out, the fluid is absorbed by the body.

- After the image are made, the cannula or tube is removed.

Q: 4

Which radiological procedure is commonly performed for assessing congenital anomalies of renal system?

ANSWER:

INTRAVENOUS PYELOGRAPHY: (IVP)

An intravenous pyelography, IVP, also called an 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.

INDICATIONS:

Check the normal function of kidneys
Check for anatomical variants or congenital anomalies

Check the course of the ~~ureters~~ ureters.

Detect and localize a ureteric obstruction.

Assess for synchronous upper tract disease in those with bladder transitional cell carcinoma (TCC)

CONTRAINDICATIONS

Contrast allergy

Hepato-renal syndrome

Thyrotoxicosis

Raised serum creatinine

CONTRAST MEDIA

HOCM or LOCM 370 are acceptable but following ~~patients~~ high risk groups should receive LOCM:

- Infant
- Those with renal / cardiac failure
- Poorly hydrated patients
- Patients with diabetes

- Patients who have had a previous severe contrast medium reaction with LCM
- Adult dose 50 ml.
- Paediatric dose 1 ml kg⁻¹.

PATIENT PREPARATION :

- No food for 5 hours prior to the examined
- Patients should, be ambulant for 2 hours prior to the examined to reduce bowel gas
- The routine administration of bowel preparation fails to improve the diagnostic quality of the examined
- If the examined is to be performed on a patient who has previously had a severe contrast medium reaction, methyl prednisolone 32 mg orally 12 and 2 hour prior to injection of contrast medium.

FILMS:

- ① Immediate film
- ② 5-min film

IMMEDIATE FILM:

AP of the renal areas
This film is exposed 10-14s
after the injection. It aims
to show the nephrogram

5 min FILM:

AP of the renal areas
This film is taken to
determine if excretion is
symmetrical and is invaluable
for assessing the need to
modify technique.

Q: 5

Which procedure is performed for investigation of extrahepatic biliary obstruction?

ANSWER:

Endoscopic retrograde cholangiopancreatography (ERCP) is performed for investigation of extrahepatic biliary obstruction.

ERCP:

Endoscopic retrograde cholangiopancreatography is a technique that combines the use of endoscopy and fluoroscopy to diagnose and treat certain problems of the biliary or pancreatic ductal system.

Although percutaneous transhepatic cholangiography (PTC) has a higher success rate for

demonstrating bile ducts,
ERCP has - three advantages
over PTC:

- The ability to visualize and biopsy ampullary lesions
- The demonstration of biliary tree and pancreatic duct
- Greater therapeutic potential

PROTOCOLS FOR ERCP:

- You are not asleep during the procedure, but you take medicines called sedatives.
- Sedatives make you relaxed and sleepy.
- Sometimes ERCP, must be done under general anesthesia, with you completely asleep.
- If you need general anesthesia, your doctor will discuss it with you.

The endoscope does not ~~not~~ interfere with breathing. Taking slow and deep breaths during the procedure may help you to relax.

The length of the examination varies between 30 and 90 minutes.

After ERCP, you will be monitored while the sedative medications wear off.

For the best possible examination, the stomach must be empty. The patient should not eat anything after midnight on the evening preceding the exam, the procedure is performed early in the morning, no liquid should be taken.