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Q1: Which Contrast is ideal for IV administration? What are its favourable characteristics to be used as IV Contrast?

Ans: Iodinated Contrast is the main type of radiocontrast used for intravenous administration.

The ~~the~~ iodinated Contrast are differentiated in:

- ↳ Ionic Monomer
- ↳ Ionic Dimer (HOICM)
- ↳ Non-ionic Contrast agent
- ↳ Non-ionic Dimer (LOICM)
- ↳ Non-ionic Monomer (LOICM)

Ideal IV administered Contrast: →

The non-ionic dimer are the most ideal Contrast agent used for intravenous administration, as they are very less toxic and delivers more iodine with the least effect on osmolality.

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using those compounds that are iodine containing are related with low toxicity and have great radiopacity.

This contrast media is considered much better than the compounds with higher atomic number due to some characteristics which are ideal.

It is a form of intravenous contrast media which contain iodine and enhances the visibility of the vascular organs and structure during the radiographic examination.

Non-ionic contrast media have lower osmolality and tend to have fewer side-effects.

Characteristics:→

The ideal "IV" contrast media having following characteristics -
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- ↳ It highlights the blood vessels.
- ↳ It enhance the tissue structure of organs
- ↳ The Contrast agent begin to diffuse directly into the water and extravascular spaces, just immediately after the injection.
- ↳ It can be spreaded throughout the body easily.
- ↳ Once the Contrast is injected into the bloodstream through IV route, the Contrast media then circulates through the heart and passes into the arteries, then the body capillaries and then passes into the veins and back to the heart.
- ↳ There is no barrier for Contrast media if injected through IV.
- ↳ This Contrast media can maximizing the clinical benefits.

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↳ It has fewer side-effects.

↳ Adverse effects of these Contrast media are usually mild or self limiting.

Q2th How is venography performed
Explain in detail?

Ans

Venography:→

Definition:→ The radiography of a vein after injection of a radiopaque fluid.

A venogram uses an injection of a contrast dye to take pictures of the veins in

your body mostly of legs and arms. It is

Sometime used to look for blood clots called deep vein thrombosis (DVT).

Used for:→

- ↳ Find the blood clots within vein.
- ↳ assess the status of vein or system of vein.
- ↳ Guide treatment for diseased vein.
- ↳ assess varicose vein before

Surgery-

- ↳ Find a vein in good condition to use for a bypass procedure or dialysis access.

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How is venography performed?
The venographic examination is usually done on an outpatient basis, this examination is performed in a hospital x-ray department.

You'll be given a hospital gown to wear during the venography to make the testing area easy to assess.

A venogram is performed in the x-ray department or in interventional radiology Suite, sometime called Special procedures Suite.

one will be lie on the x-ray table, depending on the body part being examined (eg arm, leg) the table may be situated in standing position. If the table is repositioned during the procedure you will be secured with

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Safty Straps

The physician will insert a needle or catheter into vein to inject the contrast agent. Where that needle is placed depends upon the area of your body where the vein are being evaluated.

You might feel warm develops a slight headache or feel nauseated as the contrast dye travel through your body.

As the contrast material flows through the vein being examined, several x-rays are taken. You may be moved into different positions so

that the x-ray takes pictures of your vein at different angles.

A venogram takes b/w 30-90 minutes to perform - Fluid will be run through

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your IV to remove the contrast material from your vein.

After the catheter is removed a bandage will be placed on IV site.

Then you will be observe for any signs of the complications such as

bleeding from the injection site, infection or

an allergic reactions -

↳ All the above mentioned is the way/procedure through which the venography is performed.

Q3:→

What is Loopogram?
Explain:→?

Ans

Loopogram:→

The Loopogram is a test that has been used on the section of bowel that functions in place of the urinary bladder.

OR

It is a test loop to show the bowel that has been used as a substitute for your urinary bladder.

↳

patient which don't having bladder undergoes procedure which reroute the flow of urine through an opening in abdomen. This opening is called stoma. Urine continuously flows through it because it don't having muscle and it is not able to control the flow of urine. The loopogram is performed to primarily ascertain any issue you may be having with your stoma.

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Loopogram Procedure →

- ↳ is done with a Contrast called ray Dye. Fluoroscopic examination
- ↳ The Contrast dye will show up on the images and allow the radiologist to clearly see and check the internal organ.
- ↳ The patient will be lying supine on the examination table.
- ↳ The Stoma bag will be removed.
- ↳ The radiologist will clean the Stoma and will insert a catheter. Urostomy
- ↳ Contrast (X-ray Dye) will be injected through the catheter and several images will be taken.
- ↳ The exam will usually take about 30 minutes to 1 hour.
- ↳ Arrive promptly for your appointment to help us prevent any delay.

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Patient Preparation:→

- ↳ No preparation is necessary.
- ↳ Please bring an extra Stoma bag and any dressings you may require because your drainage bag will be removed for the procedure.
- ↳ Report 15 minutes before your scheduled appointment time.

Loopogram examination Shows:→

The examination Shows -
Kidney → Ureter
ileum, → Stoma

- ↳ It is done to ensure that the conduit and surrounding organs are functioning efficiently.
- ↳ This procedure is also known as ileal conduitogram and ileal loopography.

Benefits:→

The examination will help your physician to make a correct diagnosis or decision for your treatment.

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- ↳ After procedure:→
you may feel minor discomfort.
- ↳ Pressure in the abdomen when the contrast is being injected through your Stoma.
- ↳ After the exam a new Stoma bag is put on.
- ↳ Small amount of blood in urine for few days.

Risk Factors:→

The contrast dye that is used contain iodine which some people are allergic to - if you had an allergic reaction to x-ray contrast in the past or if you have a known allergy to iodine, you must tell your doctor/physician.

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Q4:→ What is the role of radiologic technologists in performing fluoroscopic procedures?

Ans The Radiographer may perform noninterpretive fluoroscopic procedures to assist licensed practitioners with fluoroscopic and specialized interventional imaging procedures, when appropriate and in accordance with state Statutes.

The technologist receive formal training in radiation management and complete a formal Credentialing process administered by the facility for assisting with interventional procedures.

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Role of technologist in performing fluoroscopic procedures: →

- ↳ Reviewing the patient clinical history to ensure the proper imaging procedure has been ordered.
- ↳ Explaining the procedure to patient and answering questions.
- ↳ Preparing the patient for the procedure.
- ↳ Prepare the equipment need for.
- ↳ positioning the patient to best demonstrate the anatomy of interest.
- ↳ Monitoring patient during examination.
- ↳ Documenting information with Computer.
- ↳ Immobilizing patient as necessary.
- ↳ Administering targeted doses of radiation to the patient.

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- ↳ preparing medications and administering such as contrast agents prescribed by a licensed practitioner.
- ↳ Determining the radiographic exposure technique while applying principles of radiation protection to the patient and staff.
- ↳ Images should demonstrate proper patient positioning, appropriate anatomy and overall satisfactory image quality and the technologist should determine if additional image might improve the overall diagnostic value of procedure.
- ↳ The radiographer also should develop and maintain a technique chart for imaging equipment to minimize repeats caused by exposure error.

Qs:→ What are catheters and guidewires? Why and how are they used? What are their types?

Ans
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① **Guidewire:→**

The Guidewire are the stainless steel metallic structure that guides the catheter through the blood vessel for placement. Guidewire are used for both cardiology and radiology angiographic procedures.

↳ Guidewire are relatively simple spring type wires that provide necessary firmness and the control to the site where angiogram will be taken.

↳ As the name suggest "Guide" it guides the catheter.

Types of Guidewire:→ Two types

① Solid Guidewire -

② wrapped Guidewire -

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① Wrapped Guide wire:

This type of the guide wire has one end that is rigid, with the opposite end flexible.

↳ The wrapped guide wire can be constructed so that it has a movable core making it more versatile than the solid Stainless Steel guidewire.

↳ Disadvantages:

- ↳ Possibility of catheter tip flaring
- ↳ Blood clotting on the guidewire.
- ↳ Abrasion of vessel.

(A) Solid Guide wires:→

This type of guidewire has one end rigid, with the opposite end flexible. The flexible tip is introduced into the blood vessel first.

↳ The advantages of solid guide wires are that it reduces the possibility of catheter tip flaring, blood clotting on the guide wire, abrasion of the vessel and the danger of unravelling.

↳ The lack of versatility are the one disadvantages of the solid guide wire.

B Why guide wire is used?

The guidewire is used to guide the catheter into place during CVC insertions.

The guidewire is use to gain ~~access~~ access to the blood vessels using a minimally invasive technique.

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B How guid wire is used:->

The guid wire has two end, the flexible tip is introduced into the blood vessel first, so that if the guid wire strikes a vessel wall, it will bend thereby preventing damage to the vessel.

(2) "Catheter:->

From Greek ~~Katheter~~ "Katheter" came from Kathienai, Kathe "to send down".

↳ The catheter is a hollow flexible tube that can be inserted into a body cavity, duct or vessel. Catheter thereby allow drainage or injection of fluids. The process of inserting a catheter is catheterization.

↳ Catheter are medical devices that can be inserted in the body to treat disease -

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Types of Catheter:→

There are three main types of Catheter.

- ↳ Indwelling Catheter.
- ↳ External Catheter.
- ↳ Short-term Catheter.

① Indwelling Catheter:→

The type of Catheter that stays inside the body for a long period. It resides in the bladder. A nurse inserts an indwelling catheter into the bladder through the urethra. This type of indwelling catheter is known as Suprapubic Catheter.

② External Catheter:→

The external catheter placed outside the body. A device that look like condom covers the penis head. A tube lead from the condom device to drainage bag.

These catheter are generally more comfortable and

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Carry a lower risk of infection than Indwelling Catheter.

③ Short-term Catheters →

A person may only need a catheter for a short period of time after surgery until the bladder empties. After the bladder empties it is necessary to remove the catheter.

It can be done through the urethra or through a hole created in the lower abdomen for catheterization.

B Why we use Catheters →

The catheter is a tube that is inserted into your bladder, allowing your urine to drain freely. → To rest the bladder after surgery.

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- ↳ To rest the bladder following an episode of urinary retention.
- ↳ To drain urine from kidney.

B

How to use Catheter:→

The one end of the catheter is either left open ended, to allow drainage into a toilet, or attached to a bag to collect the urine. The other end is guided through your urethra until it enters your bladder and urine starts to flow, when the flow of urine stops, the catheter is removed then.