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Exam Final term.

Q3

Ans Disadvantage of DR :-

1) Hight patient throughput

2) Compact profile

3) Poorer spatial Resolution

4) Non availability of post processing function.

5) Reduced radiation

6) Reduced space requirement.

Reduced cost due to the elimination of chemical processors.

7) Equipment cost

8) Training and learning Curve

9) Increase sensitivity to Scattered radiation.

Ans (1)

Digital Subtraction angiography

Digital Subtraction angiography is a Fluoroscopy technique used in interventional radiology to clearly visualize blood vessel in bony or dense soft tissue environment.

Image are produced using contrast medium by subtraction a pre contrast image or mask form subsequent images

Angiography first described in 1935 and subtraction of in English sources in 1962 as manual technique.

Indication :-

There are numerous Indication for angiography and their number has been on the rise ever since Interventional radiology has been

* endovascular aneurysm repair
* arterial balloon angioplasty
* arterial stenting
* thrombectomy

Technique :-

Digital Subtraction Angiography is used produce image of blood vessel with out Interfering shadows form overlapping tissue

3)

This provides a clear veins of vessel and Allow for a lower dose of contrast medium.

1) The Non contrast image of the region is taken before injecting contrast materid and therefore shows only anatomy as well as radiopaque foreign bodies regular x ray image.

2) Contrast image are taken in succession while contrast material is being injected

3) recording can continue to provide a sequence of subtraction image based on the initial mask.

4) The mask image is then subtracted from the contrast image pixel by pixel

5) The subtraction image can be viewed in real time. Even if the patient lies still.

Procedural technique

For every purpose There is at least on technique but common to them all is the Application of DSA for visculization.

1) The patient lies on the angiography table.

2) local anesthesia is administered at the Intended pucture Site

3) the Seldinger technique is used to gain access to a blood vessel.

4) On procedure completion hemostasis is applied to the puncture site.

Complication

complication can be categorized into local and systemic complication.

local complication

1) thrombus formation
2) local tissue damage
3) from the puncture site
4) pseudoaneurysm
5) aterio venouk fistula

systemic complication

1) Thromboembolism
2) air embolism
3) vessel embolism
4) contrast mediated nephrotoxity

Future

DSA is done less and less routinely in imaging departments. It is being replaced by computer tomography.

Which is produce 3D image through test which is less invasive and stressful the patient. magnetic resonance angiography which avoids xray and nephrotoxic contrast agents

* digital subtraction angiography used for

DSA provides an image of the blood vessel in the brain to detect to the problem with blood flow.

The procedure involves Inserting a catheter into any artery in the leg and passing it up to the blood vessel in the brain.

Q

Ans:- Common Artifacts in DR

There are three main Artifact in Digital Radiography which are the following

1) Image Receptor Artifacts
2) Soft ware Artifacts
3) object Artifacts

(6)

Common Artifacts in DR

The following are common artifacts are in DR which will define it

1) motion artifact ⇒ dueto patient movement resulting in disorted image.
2) image compositing
3) gruid off
4) radiopaque object on external to the patient
5) debris in housing

* debris in the housing caused by the collimator tube can cause small trapezoidal regions, lead Indicative of shaving.

(7)

Ans

Convential Radiography

Radiography is the use of x ray to visualize the internal structure of patient. CR is

The x ray are passed through the patient are captured behind the patient by a detector. film sensitive to x ray or a digital detector.

Convential Radiography

Magnetic Resonance imaging

mammography

Ultrasonography

PET

Radionuclide scanning.

Limitiation of conventional Radiography process

1) film has Limited exposure Latitude
2) time consuming and cumbersome
3) Repeat xray
4) Film wastage

(8)

1) Image produced through the use of ionizing radiation are called convential Radiography

2) They required source to produce a They method to record the image

3) The major disadvantage of conventional radiography are limited range of densities it can demonstrate and that it uses ionizing radiation

Conventional Radiography	DR
1) Method is film based	two type of digital radiography
2) Method uses intensifying screens	1) In direct DR
3) film is processed chemically	2) direct DR
4) processed film is viewed on Light box	DR include computed radiography are direct or indirect recorded on electron allaly readable device
6) film is placed between two screens	image are viewed in computer
5=) produce analong image	using x ray tube with film and cassetes.

Digital Radiography

digital Radiography is the All conventional because it provides several significant advantages over screen film radiography.

Digital radiography is more efficient in the time space and personal than screen film radiography.

Direct Digital Radiography which is cassette less
1) charge coupled devices
2) ID Direct conversion
3) Direct conversion

Direct Digital Radiography

Intraoral sensor is exposed to x ray to capture an image viewed immediately on computer
- Wired sensor can be bulky

ID Direct Digital Radiography

Intraoral wireless plate is used to capture image then scanned and convert to digital from wireless sensor are similar in size to traditional film slightly larger

Digital Radiography

1) Invention of Digital imaging
2) Fundamental of digital image equipment
3) Radiation exposure
4) legal Issues
5) Infection control
6) No film or processing chemistry is used
7) Numerous companies are producing digital radiography systems

Q4)

Ans

screen film radiography	Digital Radiography
1) screen film radiography are present dirkroom system	Digital Radiography are not present dirkroom system.
The screen film radiography image receptor are very sensistive in to Light	The Digital Radiography are not sensistive with Light
screen film radiography the patient radiation Dose are high	DR Radiography are not patient dose.

Digital Radiography are very superior than screen film radiography.

The Digital Radiography will store for the image the feature. The screen film radiography image are data are not Store for feature.

It the end of Screen Radiography not image chaning will be occure but Digital Radiography image will be any time.

DR contrast are then screen film Radiography. The spectral Resolution are/ best than screen film Radiography.

The Digital Radiography are very superior than screen film Radiography.

The End