

(1)

Q1 Circumstances for Tri-phasic CT or Indication:-

- > Adenoma
- > Hepatocellular Carcinoma (HCC)
- > Focal Nodular Hyperplasia (FNH)
- > Hemangioma
- > All type of Hepatic Cancer
- > Cyst
- > Abscess

Little about its phases
Balus phase:-

- > start after injection
- > Hec difference 30 Btw IVC & aorta
- > Here arterials are filled
- > Also know arterial phase
- > Not yet fill vein

Non Equilibrium phase:-

- > difference 10-30 HU AVID
- > Arteries are bright than parenchyma
- > Veins are white here
- > start after one minute after injection

Q 1 page

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Last phase:-

- ⇒ Equilibrium phase.
- start after 20 min of c-injection
- arteries are emptied
- veins & pharynx are seen
- HU difference 10

Protocol for Liver Scan:

1st of all take consent form patient for Triple-phase MDCT. Then take 2 different scan on same slice (16-slice MDCT Scanner and with 16x15 detector Configuration for cine phase & 2005 Equilibrium phase & 16x0.75 for arterial phase. The all gantry rotation time is 0.5 & with table speed 12 mm - 1st slice is about 5 mm than in reconstruct is 2 mm. The patient can receive 1.5 ml/kg of 300 mg/ml non-ionic iodinated contrast media with the rate of 3.0 ml/s with injection pressure is 2.0 G catheter. Mean the phasing system is start now.

Q 1 (3)

First of all taken scan of region of interest & triggers was set on low HU. The pt were divide into two regions 1st group 8+25 (3rd) and 25 (4th) in the 2nd group for the 1st 2nd & 3rd. The taking time is 5, 9, 9 & 16 for unenhanced, arterial, portal & hepatic venous phase. The hepatic venous phase involve whole abdomen from diaphragm to pelvic.

(4)

Q3

Ans:- CT-scan of the
lumber spine.

protocol for CT Lumber:

It provides detail of bone (vertebrae). It takes a single slice of multidetector helical protocol. Take continuous axial slice & slice thickness is depend on your region of interest. & Some centres include series of multiplanar Reformation sagittal & coronal etc. image should be reviewed in window & window setting for to demonstrate soft tissue & bony abnormalities if the reconstruction is too important.

→ position - Head 1st

→ Topogram direction - CC (Cranio-caudal)

→ Scan type - Helical

→ pitch 32.0 mm

→ KV = 120

→ Rotation time = 1.0 sec

→ DFOV = 18cm

→ Scan delay = 65 sec

Qu (5)

CT for tarsal coalition:

Positioning:

patient lie on supine position on CT table feet first & Head is backward and placed pillow to Head and some additional supports to knee & the ankle joint elevate with the radio lucent material final ask them to feel comfort. Remember the one foot is prevented.

Protocol:

- ⇒ Scan type is helical
- ⇒ Scanning direction is CC
- ⇒ Pitch is 8:1 & rotation is 320mm
- ⇒ KV is 120 & mA is 100 & Rotation time is 1 sec
- ⇒ Scan start from distal mid of the metatarsal to proximal part (near to ankle joint) of Tibia & Fibula
- ⇒ DFOV = 18cm

Q5

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CTA procedure & protocol:

Ask from patient to complete Questionnaire. The insert the catheter into vein. When the radiologist start position on CT table & give some additional support to feel comfort. The automatic injected pump required for contrast. The table is position at the start point of the image. When move through the of the machine. Time taken approximately one to 2 minutes. In the CTA for heart the ECG will placed on chest to synchronize CT scan with Heart beats. if the Heart rate is very speedy the slow down by medication.

Q 5

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protocol:

Position:- depend. of Region
which one we diagnose (tumors)
etc.

Topogram direction is Cranio caudal

Scan type is helical

KVp = 120

MA = 180

Time = 0.5 sec

Pitch = 1.2:1

Speed = 15.00 mm

Detector width x Rows = 12.5 cm (Beam is
collimated)

→ Scan starting time & ending

Location it depend upon a gain

Region of interest

FOV: 38 cm

Contrast volume = 12 ml = 1.0 ml/sec

Rate of contrast is 1 ml / second

Q 2

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CT-Scan for Insomnia patients: (Brain CT)

Insomnia: This is a common sleep disorder. The patient wake up too early & not go back to sleep. Some people get for short time insomnia disorder for days or weeks. It occur in the result of stress & traumatic event. Some people have chronic insomnia and it symptoms may include high chance of error, irritability, not focusing.
CT Brain is very helpful for the diagnosis of insomnia patients.

Technique:

The CT Head is performed by two way
(i) Step & shoot
(ii) Volumetric acquisition
1: step & shoot:

→ Complete revolution around the stationary pt
→ take single axial image
→ delay time after slice taking

(9)

- 15mm through the cranium
- 5mm slice through the base of skull → posterior fossa
- Start at bitemporal line

(i) Volumetric acquisition:-

- Continuously moving
- helical scanning
- 3D image of Volume of the data
- 3D reformat is 0.6mm
- CT-Brain Resulting in 3 plan
4mm → 3 plan in 1mm.

Protocol:

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protocol:

Position: Supine Head first
Topogram direction: CC (Cranio-caudal)

Scan type = Helical

KV = 120

MA: 50 - 210 (150)

Rotation time: 0.7 sec

Detector width \times Rows = Beam collimation

= $0.625\text{mm} \times 32 = 20\text{mm}$

Start scan from 1cm inferior
to the skull base

Ending location is 1cm superior
to skull vertex

DFOV = 25cm

~~if not~~

Scan delay = minimum 2 minutes

Slice thickness = $0.5\text{mm} \times 64$

Bone sharp = $5/5\text{mm}$

\Rightarrow plane is parallel to heart plane

The End