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Department Radiology (GH)

Paper CT

Date 26/6/20.

Q1:-

AB: Triphasic Liver

The Triphasic computed Tomography Scan is a good and use the first line imaging modality for differentiating the benign and malignant focal liver lesions.

Indication OR Circumstances

The rule of out follow liver of hypervascular metastasis from the following.

Primary liver tumors

Renal cell carcinoma, leiomyosarcoma, thyroid tumors, carcinoid tumors and the other neuroendocrine tumors, Malenoma and breast (may be hypovascular) pancreatic islets cell tumors, GIST (Gastro Stromal cell tumors

Patient Preparation:-

The patient must have the 4 hours of fasting.

Gives the positive oral contrast 15, 30, 45 and 60 min prior must be remember the time and heath of Patient immediatly prior the scan.

H_2O may be suitable alternative 750ml

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30 min prior. The 250 ml of contrast Immediatly given to the prior Scan. Supine the first patient Should guided properly and not working or overthinging about it. Proper monitoring the patient.

Protocol:-

The 2 Phase of liver 5mm (0.5mm)
Large two phase 5mm to 1mm.

Scan Slice thickness	0.5mm x 64 (1mm x 32)
pitch	Standard
KV	120
mA	Sure Exposure 31> Standard
Rotation time	0.5 = (0.75 sec)

Scan Range:-

	Arterial Phase	Portal venous phase
~~Start~~		
Start	Top of higher hemidiaphram	Top of higher hemidiaphram
End	iliac crest	Below ischium
Plane	Straight gantry	Straight gantry.

Contrast:-

Volume	70 - 120ml (Depending on present weight
Rate	4ml/s
Delay	Start 180Hu in abdominal aorta +10sec Portal venous 65sec fixed delayed.

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Image Reconstruction :-

S/S	Body Standard axial
Volume	Body Standard volume.

Reformation :-

Multiview	coronal	Sagittal
Start	Posterior	Left
End	Anterior	Right
Thickness	4mm	4mm
Spacing	4mm	4mm

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Q2:-

Ans:- Anosmia:-

There are the three most common causes for a smell disorder are sinonasal diesease after a URTI and also include the head or facial injury. The passage of air may affected after done any trauma the area can reduce the sense of smell.

Indications:-

~~Sinusitis~~ Sinusitis, polyps, facial bone, and anosmia.

Patient prepartion:-

First guide the patient about the whole procedure and after that you say it to the patient kindly corporate during the examination.

Remove the unnecessary items because the scan not properly done it. It may cause the artifacts.

patient should be try to no movement during the scan.

The patient supine head first

Take care for the patient and also their head while doing the position

Always ask from the patient in his previous history about surgery confirmed and also keep in record.

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Protocol:

Sinuses HCT	5mm to 0.5mm
Slice thickness	0.5mm to 64x
pitch	Detail
kv	120
mA	150
Rotation time	0.5sec

Scan range

Start	Below the maxillary sinuses.
End	Above the frontal sinuses
Plane	Parallel to hard Palate.

Image reconstruction.

5/5 mm	Bone Sharp
volume	Bone Sharp

Reformatting.

Multiview	Coronal	Sagittal
Plane	Perpendicular to hard Palate	Perpendicular to hard palate
Start	Anterior to frontals	Medial wall of left orbit.
End	Posterior to Sphenoids	Medial wall of Right orbit
Thickness	2mm	2mm
Spacing	2mm	2mm

The reforming may need to be performed manually to unsure the correct anatomical positions.

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Q3:-

Ans: Lumber spine

Indications:-

lower back pain, Sciatica, femoral neuralgia spinal canal, Stenosis,

Procedure:-

Patient should guided before the procedure and also mentally prepare to scan.
Patient remove all unnecessory things before the scan.
Take the history from patient. and also include the Surgery history.
The technician may use the pillows or straps. to ensure that you stay in the correction position in longh enough.
During the scan should tell the patient do not move during the scan.
Supine feet first.
patient lies in Supine position
Sponges placed under the knee for comfortable and non movement.
Scan in lateral decubitus. or prone position if unable to be Supine
Do upto your patient sickness.
Do the patient proper position and tell the Patient don't set it. while any one not come.

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Protocol:-

lumber spine 3mm (0.5mm)

Scan slice thickness	0.5mm & 64
Pitch	Detail
kv	135
mA	)sure) Exposure 3D High quality.
Rotation time	1.0sec (1.5sec.

Scan range:-

levels specified otherwise routinely L2-S1
If Patient <30 y.o then L3-S1 unless

Specific	Symtoms L2 to L3
Start	Above the pedicle of L2
End	Below the S1 increasing the Scan range to obtain the sufficient data for MPRs for L5-S1 Disc.

Image Reconstruction:-

3/3	Spine thoracic lumber
3/3	Bone Standard
Volume	Spine thoracic lumber.

Reformatting:-

Use the spine program in multiple plane reformations. The multiple plane reformation may gives us to deep information about the lumber vertebra with the help of that option we can seen the lumber in different angle and easily detect the abnormality and problems.

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Q4:

Ans: TARSal Coalition:-

A tarsal coalition is an abnormality of connection the back foot tarsal bone. This abnormal connection which can composed of the bone cartilage or fibrosis in tissue. It may lead to limited motion and also cause the pain.

Indication:-

Tarsal coalition, talar and calcaneal pathology ankle joint pathology, lose bodies

Patient Preparation:-

Patient Place the supine position.
Patient should Guide about their examination.
Tell the patient don't movement while scan is started.
Remove the unnecessory things.
Take the history of patient and also previous surgery and health history also may take its.
Placed the patient propey position ankle of interest at center of FOV or field of view.

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Bent the leg up to may comfort and less chances of movements.
Try to ankle and foot Immobilize because while during Scan it may cause the artifacts.

Protocol:-

Ankle foot	2mm to 0.5mm
Scan Slice thickness	0.5 mm x64
pitch	Detail
kv	120
mA	100
Rotation time	0.5 sec

Scan range:-

Start	Above the ankle joints
End	Below the calcaneum
Plane	Straight Sanfry.

Reformatting:-

	coronal	Sagittal
Plane	True coronal	True Sagittal
Start	posterior to calcanium	Lateral to fibula
End	Anterior to navicular	Medial to tibia
Thickness	2mm	2mm
Spacing	2mm	2mm

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Q5:-

Ans:- Investigation of coronary artery Disease (CTA)

Indication:-

The investigation of coronary artery diesease the assessment of coronary stents we recommend to 10 step guide the coronary (CTA) for detailed proper instruction and performing the following studies.

Patient Positioning:-

The patient place the supine and if may any problem you can change the position to feel first. Patient fluid the properly about their examination.

Take the proper and deep history before the exam start. o.s pregnancy, Past Surgery etc. Tell the patient do not move during the examination also corporate the patient proper monitoring the patient and their ecg rading during the exam. The ECG dots placed at the chest arm and aboye the heads. Tell the patient don't takes a deep breading during Scan.

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Protocol:

Cardiac CTA	0.5mm
Scan Slice thickness	0.5mm x 64
pitch	Determined by Somatom cardio™
kv	120
mA	400
Rotation time	Determined by Somatom cardio.

Scan range:-

Start	carina
End	Below apex of heart
Plane	Straight Gantry

Contrast:-

Single Phase contrast is injected to the protocols

Phase I	XX mL	4-5 mL/s
Phase II (Saline)		4-5 mL/s

XX = Scan time + 10 x injection rate

Somatom Starts on decending aorta at level at the level of pulmonary trunk trigger at 180 HU.

Image Reconstruction:-

Use the image xact to determine the optimal phase for motion-free images

Volume cardiac CTA.