

IGRA NATIONAL UNIVERSITY PESHAWAR.

~~Paper~~
Final Exam 2020

Paper CT

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Ans No 1:

CT BODY LIVER

Page No ①

Indication:-

Rule out / flow up liver for hypervascular metastases from the following.

- ⇒ Primary liver tumours.
- ⇒ Renal cell carcinoma, leiomyosarcoma, thyroid tumours, carcinoid and other neuroendocrine tumours.
- ⇒ Melanoma and breast
- ⇒ Pancreatic islet cell tumours, GIST.

atient Preparation:-

- ⇒ 4-hr fast.
- ⇒ Positive oral contrast 60 / 45 / 30 / 15 min. prior, remainder immediately. prior to scan.
- ⇒ H₂O may be suitable alternative (750 ml 30 min prior, 250 ml immediately prior to scan)
- ⇒ Supine / feet first.

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Imaging Protocol :-

Scan slice Thickness	0.5mm x 64 (1mm x 32)
Pitch	standard
KV	120
mA	Exposure 3D standard
Rotation Time	0.5s (0.76s)

Scan Range	Arterial Phase	Portal Venous Phase
Start	Top of higher hemidia-phragm	Top of higher hemidia-phragm
End	Iliac crests	Below ischium
Plane	Straight Gantry	Straight Gantry

Contrast :-

Volume	70-120 ml
Rate	4ml/s
Delay	"Start" ^{12m} 180 HV in abdominal aorta + 10s Portal Venous 65s fixed delay.

Image Reconstruction:-

S/s mm	Body	standard	Axial
Volume	Body	standard	volume

Reformatting:-

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

Ans No ②

CT of Anosmia.

④

Indication :-

Sinusitis, Polyps, Post-nasal drip,
facial bones, Anosmia.

Patient Preparation :-

supine, head first, taking care the to
position head symmetrically.

Always as if patient has had previous
surgery and when it was performed.
and document.

Imaging protocol :-

Scan slice thickness.	0.5 mm x 64.
Pitch	Detail
KV	120
mA	150
Rotation Time	0.5s.

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Scan range :-

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

Image reconstruction :-

5/8 mm Bone sharp
Volume Bone sharp

Reformatting :-

Multiview	coronal	sagittal
Plane	Perpendicular to hard plate	Perpendicular to hard plate.
Start	Anterior to Frontalis	Medial wall of left orbit.
End	Posterior to sphenoids	Medial wall of right orbit.
Thickness	2mm	2mm
Spacing	2mm	2mm.

Ans No ③ CT of Lumbar Spine

Indication :-

Low back pain, sciatica, femoral neuropgia.
spinal canal stenosis.

Patient preparation :-

supine feet first, sponge under knees, can be
scanned in lateral decubitus or prone
position if unable to lie supine.

Imaging Protocol :-

Scan slice thickness 0.5mm x 64

Pitch Default

KV 135

mAs

Eye poseure 3D High quality.

Rotation Time 1.0 sec (1.5s).

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Scan range :-

Levels specified, otherwise .

Routine L2 - S1

If patient < 30y.o. then L3 - S1 unless
specific symptoms L2-3.

Start Above pedicle of L2.

End Below S1.

Image Reconstruction :-

3/3 mm spine thoracic - lumbar

3/3 mm Bone standard.

Volume spine thoracic - lumbar.

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Ans No 41. CT of Ankle, Tarsal coalition

Indication:-
Tarsal coalition, talus or calcaneal Pathology, ankle, joint pathology loose bodies.

Patient Preparation:-
Supine/feet first, ankle of interest at center of FOV, other leg bent up.

Imaging Protocol:-

Scan slice Thickness	0.5mm x 64
Pitch	Detail
KV	120
mA	100
Rotation Time	0.5.

Scan Range :-

Start Above ankle joint.
End Below calcaneum
Plane straight planty

Image reconstruction:-

2.8mm Bone sharp
Volume Bone sharp
Volume for 3D soft tissue
Standard.

Reformatting :-

	coronal	sagittal
Plane	True coronal	True sagittal
Start	Posterior to calcaneum	Lateral to fibula
End	Anterior to navicular	Medial to tibia.
Thickness	2mm	2mm
Spacing	2mm	2mm

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Ans No 5 :- CTA Cardiac CAD.

Indication :- Investigation of CAD, assessment of coronary stenosis.

Patient position :-
supine feet first.
ECG leads placed on chest, arms above head.

Imaging protocol :-
Scan slice thickness 0.5mm x 64
pitch 120
KV 100
mA 'Cardio'
Rotation time

Scan range :-

Start	carina
End	Below apex of heart
Plane	Straight crantry.

Contrast :-

Single phase contrast injection protocol.

Phase 1 20 ml / 4.5 ml/s

Phase 2 50 ml / 4.5 ml/s

Image reconstruction :- use Image tool
to determine the optimal phase for
motion free image.

Volume cardiac CTA -

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