

Date: 23-06-2020

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Final term:

Course title:
Radiological
positioning.



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Q.1 what is Dental OPG
Describe the positioning
Technical in detail?

Ans: An OPG (Orthopan-
-tomogram) is a panoramic
dental x-rays of the upper
and lower jaw. It is also some
times called by the proprietary
of panorex.

It show a flattened
two dimensional view of
half circle from ear to
ear.

An OPG also demonstrate
the numbers position and
growth of all teeth.

This can particularly used
to check hard to see
areas like wisdom
teeth. It can often
used to check your jaw
joint

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⇒ position of PI and IRs

Any bulky clothing and radio - opaque objects such as jewellery, dentures or hearing aids should be removed from imaged area.

The equipment is brought to the start position and careful explanation is given to the PT.

A 15 x 30 cm Image Receptor is used.

Direct Radiography (DR) technology may be utilized.

PT will walk into the machine holding the handles and adopting sitting position.

The head is tilted down towards the front port plane.

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⇒ The Chin should be placed on rest. 20 seconds keep still air shadows.

Then exposure is taken.

⇒ Direction and Centering of X-ray Beam

AP light should be centred distally to upper lateral incisor.

This allows optimal positioning of focal through the zone of focus of which anatomical details becomes blurred.

⇒ Essential Image Characteristic *

⇒ Correct anatomical coverage which should include the entire mandible and temporomandibular joints.

⇒ Edge to Edge incisors.

⇒ No removable metallic

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foreign bodies.

⇒ The Spinal Shadows
= should be minimized.

Additional Considerations

problems can occur with
producing an optimal image
with this technique.

It is essential that PT
is able to co-operate
and stay still for up to
20 seconds for successful
examination to take place.

Q.2 ⇒ How would you
scan lower back pain?

⇒ Basic views of Lumbar x-rays?

⇒ Lumbar supine
Anterior posterior:

⇒ Position of PT and
IR:

The PT lies supine
on Bucky table, with
median sagittal plane—

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Coincident with, and right angles to middle of table and Bucky.

The AP Anterior Superior iliac Supine should be equidistant from table top.

The Hips and knee are flexed and feet are placed with their planter aspect on table top.

The IR should be large enough to include to lower thoracic vertebra and sacro-iliac joints is centred at the level lower costal margin.

The IR should be enough to include the lower thoracic.

The exposure should be made on arrested expiration allowing the diaphragm to move superiorly. The air within the lungs would otherwise

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a large difference in density and poor contrast b/w the lower ^{upper} lumbar vertebrae.

=> **Direction and Centring X-ray Beam**

=> Direct the Central ray towards middle at the level of lower costal margin.

=> **Essential Image Characteristics**

The IR should include from T₁₂ down to bottom of sacro-iliac joints.

=> Rotation can be assessed by ensuring that the sacro-iliac joints are equidistant from spine.

=> The exposure used should produce density such that bony detail can be discerned through out the region of interest.



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→ How would you scan PT with lower back pain?

⇒ An x-ray is useful test for any conditions. It helps your doctor understand the cause of chronic pain or view the effect or injuries, disease or infection.

Your doctor may order a lumbar supine x-ray to diagnose. ^{defect} Birth defect Spine

Injury or fracture to lower spine:

low back pain that persists or last four to eight weeks.

Osteoarthritis which arthritis affecting joints

osteoporosis, abnormal curvature.

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Q.3 PT of old age came to department with a complain of knee pain what view should be done?

Ans: If a PT of old should come in to department complain of knee pain than we do knee Anterior - posterior.

Knee - Anterior posterior:

=> Position of PT and IR:

for Computed Radiography (CR) an 18 x 24 cm image receptor is generally used.

=> The PT is either supine or seated on X-ray table with both long extended.

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The affected limb is rotated to centralized the patella b/w the femoral condyles and sandbags are placed against ankle to help maintain this position.

The IR should be close contact with posterior aspect of knee joint.

→ Direction and Centring of X-ray beam?

Centre 2.5cm below the apex of patella through the joint space, with central X-ray at 90 degree to long axis of the tibia.

→ Essential Image Characteristics

The patella must be centralized over the femur. The distal third of femur and proximal third of tibia are included.

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→ Additional Consideration:

This projection are also be undertaken in the erect position (weight bearing)

Q.4 ⇒ A PT fell down from bike being after hits from Car (Complained of Headache, what are the x-rays prescribe for skull?)

Ans:

When a PT fell down from bike being hits by car then come to doctor.

The doctor tell the patient to perform skull x-ray prescribe first.

Then PT do skull x-ray prescribe first skull AP and .

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and Skull horizontal
ray lateral.

✓ After the x-ray result
the doctor should be decide
for pt to perform
MRI and CT Scan
are needed or not.

There may to reason
of your healthcare provider
to recommend on a
-ray of Skull.

A Skull x-ray is an imaging
test doctor use to examine
the bones of Skull. See a
body map of Skull.

It very easy method to decades
to help doctor view the area
houses your most vital organ
your brain.

* ⇒ The Top view angled is
AP Radiograph of Skull used
to evaluated of fracture
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of Skull and neoplastic changes.

Q.5 How you see the importance of kVp and MAS setting in your machine?

Ans: The MAS (milliamperes second) determines the number of x-rays produced per unit time and the number of x-rays reaching them determines the degree of blackening of the film.

The type of Screen System being used,

⇒ * Increasing kVp increases the penetrating power of x-ray beam.

⇒ MAS rate is fast PT is high and thick PT is low, due to ~~auto~~ PT.



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= Imp KVP Setting in machines

KVP Control the property called radiographic contrast of x-ray image.

The ratio of transmitted radiation through region of different thickness of density.

Each body parts contains a certain type of cellular composition which requires an x-ray beam within a certain penetrate it.

=> KVP and MAS Effect on Image Quality

The first experiment show that when the film density is kept constant the higher kVP lower resolution image contrast. The higher MAS resolution and image contrast percentage.

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Q.5 B Write about the position and technique of x-ray pelvic x-ray?

Ans: => pelvic Anterior posterior.

=> Position of PT and Image Receptor:

The patient lies supine with the middle sagittal plane perpendicular to the table top.

=> The middle of the PT must be coincide with centred primary beam and table bucky mechanism.

=> To avoid pelvic rotation the anterior superior iliac spine must be

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Equidistant from table top.
⇒ The limbs are slightly abducted internally rotated to bring the femoral neck parallel to the IR.

⇒ Direction and Centering X-ray Beam:

Centre in the middle with vertical central beam to the centre of IR.

⇒ The centre of IR is placed midway b/w the upper border of symphysis and anterior superior iliac spine for the whole of pelvis and proximal femora.

The upper edge of IR should be 5 cm above the upper border of iliac crest to

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Compensate for the divergent beam and to ensure that whole bony pelvis is included.

→ Essential Image Characteristic *

Iliac Crest and proximal femora including lesser trochanters should be visible the image.

No rotation.

The iliac crest bones and obturator foramina should be same size and shape.

→ Additional Consideration

AT first visit and trauma cases gonad protection is usually control/omitted however local protocol can vary. It used on follow image.

End *

