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Semester 4th Semester

Question (1)

Ans **OPG** :-

An OPG (orthopantomagram) is a panoramic scanning dental x-ray of the upper and lower jaw. It is also some time called by the proprietary name OPG or panorex. It shown a flattened two dimensional view of a half circle from ear to ear. where the maxila (upper jaw) and mandible (lower jaw) are in the viewed area.

position of patient and Image receptor:-

=> Any bulky clothing and radio-opaque object such as jewellery, are the dentures or hearing aids should

Should be removed from the image area.

=> The equipment is brought to the shoot of position and careful the explaination is given to the patient.

=> The patient walks into the machine however, holding the handle and adopting a sitting position.

=> Ensure the patient is not rotated by ensuring the Sagittal plane light run down the middle of the face close the head restraints.

The exposure is taken. observe the patient carefully.

Direction and centring of X-ray beam.

The Anterior - posterior should be centered distally to the upper. This allow optimal positioning of the focal throught; zone of focus out side of which the anatomical detail becomes blurred.

Essential Image characteristic :-

=) correct anatomical coverage, which should include the entire mandible and tempro-mandibular joints.
=) Edge-to-edge incisors.
=) No removable metallic foreign bodies.
=) No evidence of movement unsharpness.
=) The spinal shadow should be minimized.

Question (2)

Lumbar Spine X-ray :-

An x-ray is a useful test for many condition it can help your doctor understand the cause of chronic back pain or view the effect of injury, disease or infection.
=) Both defects that effect the Spine.
=) Injury or feature to the lower Spine.

Lumbar Spine Antero-posterior :-

position of patient and Image Receptor :-

=) The patient lies Supine on the Bucky table, with the median Sagittal plane concident with.

and at right angle to the midline of the table and Bucky.

⇒ The anterior superior iliac spines should be equidistant from the table top.

⇒ The hip and knee are flexed and the feet are placed with their plantar aspect on the top to reduce the lumbar arch and bring the lumbar region of the vertebral column parallel with the image receptor.

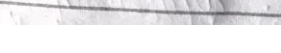
Direction and centring of x-ray beam.

⇒ Direct the central ray toward the midline at the level of the lower costal margin.

Essential image characteristic :-

⇒ The image should include from T12 down to the bottom of the Sacro-iliac joints.

⇒ Rotation can be assessed by ensuring that the Sacro-iliac joints are equidistant from the spine.



Question ③

Knee. Antero-posterior:

position of patient and Imag Receptor

=> For Computed Radiograph (CR), an 18 x 24 cm Image receptor is a generally used.

=> The patient is either Supine or Seated on the x-ray table, with both legs extended.

=> The effected limb is rotated to centeralized the patella blw femoral condyles, and Sand-bags are placed against the ankle to help maintain this position

Direction and centring of x-ray Beam:

centre 2.5 cm below the ~~appear~~ apex of patella thought the joint space, with the centeral ray at 90 degree to the long axis of the tibia.

Essential Image characteristic:

=> The patella must be centeralliged over the Joint.

=> The distal of third femur and proximal third of tibia are included.

Question No ④

Answer:-

Doctor ask Say you go and skull x-ray will do. patient ask skull Two x-ray will do. In this x-ray name is

① Skull - AP
② Skull - Horizental Ray lateral.
③ Skull - Townes ④ Skull - Submentovertex.

The doctor has x-ray result show then the doctor ask x-ray base decided the patient ask skull CT scan and brain MRI will do or not and doctor ask decide will but in which one do it.

Questions:

Part 'A'

Ans

MAS :-

The mAs (milliampere Second) diameter the number of x-rays product per unit time and the number of x-rays reaching the film diameter the degree of blackening of the film. The type of film or screen system being used. Increasing KVP increasing the penetrating power of the x-ray beam.

KVP :-

KVP control the property called "radiographic contrast" of an x-ray image (the ratio of transmitted radiation through region of different thickness or density). Each body part contain a certain type of cellular composition which require an x-ray beam with a certain KVP to penetrate it.

KVP and mAs effect Image quality :-

The first experiment show that, when the higher KVP, The lower the resolution and Image contrast percentage; also the higher the mAs, The higher the resolution and Image contrast percentage.

part (B)

Pelvic (AP view) :-

The AP pelvic view is a part of pelvic series examing the iliac, crest, sacrum, proximal femur, pubis, and the great pelvic ring. It is of considerable Importance is the managment of Severly injured patient presenting to emergency department.

patient position :-

=> patient is Supine
=> lower limbs are internally Rotation 15-25° from the hip (do not attempt this if a fracture is Suspected).

Technical Factors :-

- AP projection
- centring point
  The midpoint of the anterior superior iliac spine and the pubic symphysis
- Collimation
- lateral to the skin margin
- Superior to above the iliac chest.
- Detector Size
  35 cm x 43 cm
- Exposure
  70- 80 KVP
  20- 30 mAs
- SID
  100 cm

Technique :-

Entirely of the bony pelvis is imaged from the superior of the iliac crest to the proximal shaft of the femurs
- obturator foramina appear equal.
- iliac wings have an equal concavity.
- Greater trochanter of the proximal femurs are in profile.

Essential Image characteristic

=> Iliac crests and proximal femoral, including the lesser trochanters. should be visible on the image.

=> No rotation. The iliac bone and obturator foramina should be the same size and shape.

Additional Consideration :-

At first visit and trauma cases gonad protection is usually omitted, however local protocols can vary. It is used on follow-up image.