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Subject. Radiation positioning

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Exam final term

Q1

Ans

Dental opg

= The dental opg and cephalogram are both are the type of dental x ray

And and opg are also called orthopantomogram

The dental opg is a panoramic view of the jaw of whilst

=The opq are commonly used during a general dental check-up,

= But can also conducted to monitor and diagnosed

. Teeth(general review)

. Teeth impaction

Fracture

Dislocation

Infection

Sinuses

Position of patients and technique

=

The patient walks in the machine , holding the handle and. Adopting a,sking, position

= The exposure is taken. Observe the patient careful

=The equipment is brought to the start position and careful explanation is given to the patient

=The head is tilted downwards until the Frankfort plane is parallel with the floor and the machine height adjusted to allow the patients to bite in bite block.= It make a few seconds during which the patients must be remind completely skill

Technique

The technique create a panoramic image the should include the lower limit of mandiblei It is performing using a technique called tomography

Tomography is specifically technique for production radiography showing

only section slice of a patients

A film holder must be used to keep the film parallel with the long axis of the tooth

Direction and centring of x ray beam

= The antero posterior light should be central distally the uppers lateral incisor .the allow optimal positioning of the focalrought the zone of focus out side anatomical details become blurred

Q5

Ans B

Positioning and technique of plevic x ray

= The x ray of plevic are usually taken one are two pictures

The one is leg straight from the fron (ap)

The second are leg bent form the side(lateral view)

= The plevic x ray is safe and painless used small amount of x ray are used

Position of patients for plevic x ray and anterio posterior

= The patients lies supine with their median sigittal plane perpendicular to the table top

= The middline of. The patients must coincide with the central primary beam and Bucky mechanism

The limb are internally rotation 15.25anglefrom hip

Position of patients outlet

=Patients is supine

= Lower limb are internally rotate about 15.25 angle

Patient hand are out of way of imaging field

Position of patients x ray Pelvic flemingo

the series is compromise of the three separate projects performing an erect

Howver patients with balance issue can benefit from Pa projects

Essential image characteristics

= Iliac Crest and proximal femora, include the lesser trochanteric should be visible on the image

No rotation. The iliac bone are oturator should be same size a ND shape

Direction and centring of x ray beam

=Centre in the midline, with a vertical beam to the central the image receptor

= The center of the image receptor is placed Midway

Between the upper boardwrof the symphysis pubic and anterior Superior illiac spine for whole of the pelvic and proximal femora.

Additional considering.

=At. First visit and trauma case, gonad protective is usually omitted however loacl protocol can varyb.it used on follow.up images

Q2

Ans 2

Ans

The mRi is also called (magnetic resonance imaging was development 1980 and ha s resolution treatment for back pain patients

You scan the back pain by the help MRI is best scan of back pain

Lumber spine . Lateral

Position of patients and image receptor

= The patients lies on their side on banky table ... If there is any degree of scoliosis, then the most appropriate lateral position will be such that the concavity of the curve is towards the X-ray tube. Are the

The arms should be raised and resting on the pillow in front of the patient's head. The knees and hips are flexed for stability.is are widely

The coronal plane running through the centre of the spine should coincide with, and be perpendicular to, the midline of the Bucky.bucky

The image receptor is centred at the level of the lower costal margin.

The exposure should be made on arrested expiration.

This projection can also be undertaken erect with the patient standing or sitting.

Direction and Centring of X-ray Beam

Direct the central ray at right-angles to the line of spinous processes and towards a point 7.5 cm anterior to the third lumbar spinous process at the level of the lower costal margin.

Essential Image Characteristics

The image should include T12 downwards, to include the lumbar sacral junction.

Ideally, the projection will produce a clear view through the centre of the intervertebral disc spaces, with individual vertebral endplates superimposed. The cortices at the posterior and anterior margins of the vertebral body should also be superimposed.

The imaging factors selected must produce an image density sufficient for diagnosis from T12 to L5/S1, including the spine

Lumber spine antero posterior

Position of patients and technique

The patient lies supine on the Bucky table, with the median sagittal plane coincident with, and at right-angles to, the midline of the table and Bucky.

The anterior superior iliac spines should be equidistant from the tabletop. The hips and knees are flexed and the feet are placed with their plantar aspect on the tabletop to reduce the lumbar arch and bring the lumbar region of the vertebral column parallel with the image receptor.

The image receptor should be large enough to include the lower thoracic vertebrae and the sacro-iliac joints and is centred at the iliac joint level of the lower costal margin.

The exposure should be made on arrested expiration allowing the diaphragm to move superiorly. The air within the lungs would otherwise cause a large difference in density and poor contrast between the upper and lower lumbar vertebrae.

Direction and Centring of X-ray Beam

= the central ray towards the midline at the level of the lower costal margin (L3).

Essential Image Characteristics

=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.

=The exposure used should produce a density such that bony detail

Lumber spine oblique

Position of the patients and image receptor

the patient is positioned supine on the Bucky table and is rotated 45 degrees to the right and left sides in turn. The hips and knees are flexed and the patient is supported with a 45-degree foam pad placed under the trunk on the raised side. The image receptor is centred at the lower costal margin.

Direction and Centring of X-ray Beam

Direct the vertical central ray towards the midclavicular line on the raised side at the level of the lower costal margin.

Essential Image Characteristics

The degree of obliquity should be such that the posterior elements of the vertebrae are aligned in such a way as to show the classic 'Scottie dog' appearance.

Notes

These projections demonstrate the pars interarticularis and the apophyseal joints on the side nearest the image receptor. Both sides are taken for comparison.

Q3

Ans patients old age come to the department will complain of knee pain which view should be done

The old person are come into department with complaint of knee pain the following. Are should be

1 knee Ap

2 knee lateral

Knee lateral

Position of the patients and image. Receptor

The patient lies on the side to be examined, with the knee flexed to 45 or 90 degrees. The other limb brought forward in front of the one being the

and supported on a sandbag. A sandbag is placed under the ankle of the affected side to bring long axis of the tibia parallel to the image receptor. The position of the limb is now adjusted to ensure that femoral condyles are superimposed vertically. Centre of the image receptor is placed level with the medial tibial condyle.

Direction and Centring of X-ray Beam

Centre to the middle of the superior border of medial tibial condyle, with the central ray at 90 degrees to the long axis of the tibia.

the center

Essential Image Characteristics

- =The patella should be projected clear of the femur.
- = The femoral condyles should be superimposed.
- =The proximal tibio-fibular joint is not clearly visible.

Additional Considerations

3- to 5-degree cranial tube angulation can sometimes help superimpose the femoral condyles. Over-rotation fibula is projected too posteriorly. Under-rotation fibula head is hidden behind tibia. Identification of the adductor tubercle indicates the

medial femoral condyle and can assist the radiographer to correct positioning faults

Knee joint antero posterior

Position of Patient and Image Receptor

For computed radiography (CR), an 18 × 24-cm image receptor is generally used.

The patient is either supine or seated on the X-ray table, with both legs extended.

The affected limb is rotated to centralize the patella between the femoral condyles, and sandbags are placed against the ankle to help

maintain this position. The image receptor should be in close contact with the posterior

aspect of the knee joint, with its centre level with the upper borders of the tibial condyles.

Direction and Centring of X-ray Beam

Centre 2.5 cm below the apex of the patella through the joint space, with the central ray at 90 degrees to the 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.

Additional Considerations

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

Q5

Ans

Kvp

The kvp is kilovolt peak is responsible for the quality and quantity of x ray change is kvp change

= The kvp change the contrast of radiograph when we increase the kvp from the specific level the contrast will increase if decrease the kvp from promise level the contrast will decrease so

change in contact change the quality image

= Kvp also affect the spatial resolution of image

MAs

The milli ampere second is responsible for quantity of x ray

= If mAs change from the setting will change the optical densities contrast are some extent and spatial resolution of radiograph

= The adjustment of kvp and MAs for each procedure is specific

= The proper adjustment of MAs and level depends upon the patient's body part and machine quality

= Standard technique requires specific values of kvp and MAs which can change according

Q4

The following x ray may suggest...

= Skull occipital_ frontal (20 degree)
(decrease)

= Skull occipital- frontal (30 degree)
(increase)

= Skull frontal- occipital 20degree
(increase)

=Skull lateral

The End

