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QUESTION No 1

what is dental opg? and patient positioning technique in detail?

ANSWER

→ About Examination OPG (orthopantomogram) are the types of x-rays → dental x-rays

→ OPG produce a panoramic view of the jaw.

POSITION OF THE PATIENT AND IMAGE RECEPTOR

→ An bulky clothing and radiopaque objects such as jewellery hearing etc must be removed.

→ The equipment is brought to the start position and

careful explanation given to patient.

(3) → A 15 x 30 cm image receptor is used.

(4) → The patient walk on machine, holding the handles at a skiing position

→ The head is titled downwards

→ The machine height is adjusted and allow the patient to bite into the bite block with upper and low incisors within the grooves

→ The chin should be at rest

→ Ensure the Patient is not rotated.

→ The patient place their tongue on the roof of their mouth to reduce air shadow

→ The exposure is taken carefully.

DIRECTION AND CENTERING OF X-RAY BEAM

→ The antero-posterior light should be centered distally to the upper lateral incisor.

→ This allow optimal positioning of the focal trough the zone of focus outside of which the anatomical details become blurred.

ESSENTIAL IMAGE CHARACTERISTICS

→ Edge to Edge incisors.

→ No removable metallic foreign bodies

→ No evidence of movement unsharpness

→ Correct anatomical covelage include entire mandible and temporo-mandibular joint.

→ The air shadow should be minimized.

→ The tongue place correctly

→ No positioning eller etc.

ADDITIONAL CONSIDE-RATION

→ Problems occur ~~when~~ due to patient move-ments and positioning eror

→ patient should stay still 2.0 seconds.

QUESTION NO2

ANSWER

→ An xrays is a useful test for many conditions.

→ This can help the doctor to understand the cause of chronic back pain or view / also MRI and CT scan Performed.

the effects of injuries, disease or infection doctor will suggest / order a lumbar spine x-ray to diagnose

DEFECTS & COMPLICATION

→ birth defects effect spine
→ injury or fractures to the lower spine
→ lower back pain
→ osteoarthritis → which effects the joints.
→ osteoporosis
→ abnormal curvature.

LUMBER SPINE ANTERO-POSTERIOR

Position of patient and image receptor

→ The patient lies supine on bucky table

→ The anterior posterior superior illiac spine should be equidistant from the tabletop.

→ The hips an knees are flexed.

→ The lumbar region of the vertebral column parallel with the image receptor

→ The image receptor should be large.

→ The exposure should be made on allested expiration

DIRECTION & CENTERI NG

⇒ Direct the central ray towards the midline at the level of the lower costal margin (L3)

ESSENTIAL IMAGE CHARACTERISTIC

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

⇒ Rotation can be assessed by ensuring that Sacroiliac joint are equidistant from the spine

⇒ The exposure use should produce a density such as bony detail discerned throught the region of intelest.

BASIC VIEW FOR LUMBAR SPINE

⇒ usually most Physicians will order anteropastelior called (AP view)

→ and or lateral view x-ray for lower back pain

AP View

front to back image taken when you are facing x-ray machine

LATERAL VIEW

are side to side image taken when you are standing sideways from x-ray camera

QUESTION No 3

Patient of old age came in the department with a complaint of knee pain what view should be done? 6

ANSWER

when a patient come with a complain of knee joint we will perform AP view x-ray an lateral.

KNEE- ANTERO-POSTERIOR

Position of the patient and image receptor

⇒ for computed radio-graphy CR, an 18x24cm image receptor is used

⇒ The patient either supine or seated on x-ray table

→ The effected limb is rotated to centralized the patella.

→ Femoral condyles and Sandbags are placed against the ankle

→ Image receptor should be close in contact with posterior aspect of knee.

DIRECTION AND CENTRING OF X-RAY BEAM

→ centre 2.5cm below the apex of the patella through the joint space with central ray 90 degrees to the long axis of the tibia

ESSENTIAL IMAGE CHARACTERISTIC

→ The patella must be centralized over the femur
→ The distal third of femur and proximal third of tibia include

ADDITIONAL CONSIDERATION

This projection taken under.
in erect position

KNEE LATERAL

Position of the patient and Image receptor !

→ The patient lies on the side to be examined

→ knee flexed at 45 ~~to~~ or 90 degree

→ The other limb is brought forward
→ Sandbags are placed under the ankle

→ Femoral condyles are superimposed vertically
→ position of limb as adjusted.
→ Image receptor placed at the level of medial tibial condyle.

DIRECTION & CENTERING

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

ESSENTIAL IMAGE CHARACTERISTIC

→ The patella should be closed to femur
→ Femoral condyles superimposed. etc.

QUESTION NO 4

ANSWER

→ A patient fell from bike and complain headache headache is a medical condition that pain in the head sometimes neck or upper back pain.

→ It ranks amongst the common local pain complaints

X-RAYS PRESCRIBED BY DOCTOR

→ doctor will always prescribed MRI and CT SCan for diagnosis

→ In most cases you will have a CT-scan of the brain.

→ This test is like an x-ray but shows more detail in

all three dimensions

→ MRI scan is being use because MRI has a higher sensitivity for detecting the presence of tumor

→ but MRI refer on severe cases when doctor think their is a tumor

QUESTION NO 5-

ANSWER B PART

PELVIS - ANTERO-POSTERIOR

→ The patient lie supine with their median sagittal plane perpendicular to the tabletop

→ The midline of the patient must coincide with the centred primary beam and table bucky mechanism

→ The patient lies supine
→ To avoid pelvic rotation
→ The limbs are slightly abducted and internally rotated to bring the femoral necks parallel to the image receptor.

DIRECTION AND CENTERING OF X-RAY BEAM

→ Centre in midline with a vertical central beam to the centre of the image receptor
→ The center of the image receptor is placed midway between the upper border of the symphysis pubis and anterior superior iliac spine while of pelvis and proximal femora.

ESSENTIAL IMAGE CHARACTERISTIC

→ No rotation
→ Iliac crest and proximal femora including the lesser trochanters, should be visible on image

Position of Pelvic x-ray

If pelvis is deep, palpate for iliac crest and adjust position of IR so that its upper border will project 1 to 1.2 inches (2.5 to 3.8cm) above crest.

central ray perpendicular at the midline of the patient about 2 inches 5cm inferior to Anterior superior iliac spine 2 inches 5 cm superior to pubis symphysis

TECHNIQUE of PELVIC X-RAY

- AP projection
- Centering point
  The mid point of the anterior superior illiac spine and the pubic symphsis
- Collimation
  - laterally to the skin margins
  - Superior to above the illiac crests
  - Inferior to the Proximal third of femur
- ORIENTATION
  landscape
  - DETECTOR SIZE
    35cmX43Cm
  - EXPOSURE
    - 70-80 kvp
    - 20~~30~~-30 MAs
  - SID
  - 100cm

(5)
(PART A)

→ MAs

MILLIAMPERE SECONDS

→ determines the number of x-rays produce per time and the number of x-rays reaching the film determines the degree of blackening of the film

→ The type of film or screen system being used

Kvp → kilovolt

→ Controls the property called radiographic contrast of an x-ray image

→ Each body part contains a certain type of cellular composition which requires an x-ray beam with a certain Kvp to penetrate it

IMPORTANCE OF KVP & MAS ON X-RAY MACHINE

→ Tube voltage in turn determines the quantity and quality of the photons generated along with MAs (tube current and exposure time product) and filtration.

→ kvp (tube voltage) is one of the primary setting than can adjusted on x-ray machines to control the image quality and patient dose

THE END