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Semester 4th B.S Radiology
Paper Radiological Positioning.

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Q.NO.1:- What is dental OPG?
Describe the positioning &
Patient Positioning Technique
in detail?

Ans:- During an OPG the
patient remains in a
stationary position (seated
or standing) while both the
x-ray source and film
rotate in combination around
the patient. The x-ray
source rotates from one
side of the jaw

②
around the front of the patient, and then to the other side of the jaw.

②
During OPG x-ray, you will be asked to stand or sit in front of the x-ray machine and rest your chin on a plastic rest. you will also need to bite down gently on a mouth-piece, to ensure your head remains still during the procedure.

Part of the machine then rotates around your head as the images are being taken.

In order to obtain diagnostically useful images patient must be positioned carefully with in the image layer or focal

③

trough, which is a three dimensional curved zone. structure found with in the image layer will be reasonably well defined.

The patient must be positioned correctly so that the proper structure are aligned with in the image layer.

Example of correct patient positioning with the tongue passed against the bite block. and the indicator light for the midsagittal plane centered and perpendicular to the floor.

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Q.NO.2:- How will you scan a patient with lower back pain. write a basic view for lumbar x-ray?

Ans:- When focusing on the lower spine, an x-ray can help detect abnormalities, injuries, or disease of the bones in that specific area. According to the Mayo clinic, a lumbar spine x-ray can show whether you have arthritis or broken bones in your back, but it can't show other problems with your muscles, nerves, or disks.

It uses radiation to make detailed pictures of the bones of your spine. A technician uses a machine

that sends x-ray beams through your body. It records a black-and-white image on a special film or computer. Bones, and other parts of your body that are thick or dense, show up white in the picture.

The lumbar spine AP view images the lumbar spine which consist of five vertebrae. It is utilized in many imaging postoperatively, and for chronic conditions.

- All imaging of patient with suspected spinal injury must occur in the supine position without moving the patient.
- In the supine projection hands are placed by the patient side.

Your doctor might also use other imaging tests along with an x-ray to determine the causes of your back ~~the~~ pain. These can include.

- MRI scans
- Bone scans
- ultrasound.

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Q.NO.3) Patient of old age came in the department with a complaint of ~~swelling~~, ~~stiff~~ ~~veiw~~ of knee pain, what should be done?

Ans: Knee pain is a common complaint that affects people of all ages. Knee pain may be the result of an injury, such as a ruptured ligament or torn cartilage. Medical conditions, including arthritis, gout and infections, also can cause knee pain.

Can't bear weight on your knee or feel as if your knee is unstable -- See an obvious deformity in your leg or knee. Have a fever, in addition to redness, pain & swelling in your knee. Have severe knee pain that is associated with an injury.

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Do use "RICE" rest, ice, Compression and elevation (RICE) is good for knee pain caused by a minor injury or an arthritis flare. Give your knee some rest, apply ice to reduce swelling, wear a compressive bandage, and keep your knee elevated.

Q.NO.4:- A patient fell from the bike after being hit by a car, has now complaint of headache. what are the x-rays prescribed for the skull.

Ans:- X-ray of the skull may be done to diagnose fracture of the bones of the skull. birth defects, infections, foreign bodies, pituitary tumors, and certain metabolic and endocrine disorder that causes bone defect of the skull.

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A skull x-rays is imaging test doctor use to examine the bones of the skull - including the facial bones, the nose, and the sinuses, See a body map of the skull - It's an easy, quick, and effective method. that has been used for decades to help doctors view the area that houses your most vital organ.

- Your brain

Headache immediately following a head injury usually clears after minutes or days but sometime headaches may be persist for month or rarely year. the long-term headaches are called post-traumatic or post-concussion headaches.

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* Right after a severe TBI, people may have headaches because of the surgery on their skulls or because they have small collection of blood or fluid inside the skull. Headaches can also occur after mild to moderate injury or, in the case of severe TBI, after the initial healing ~~has~~ has taken place.

Q.NO.5: How you see the importance of KVP and MAS settings in your x-ray machine.

Ans: The more mas you are going through the higher the mA will be KVP, or Kilovoltage peak is the different in voltage between

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the Cathode and the anode
in the x-ray tube. The higher
the KVP, the more "penetrating"
will the x-rays be thicker
body parts require higher
KVP. However higher KVP
Creates more Scatter.

APR and AEC are not
related in these junctions
other than as systems
for making exposure. However,
these two different systems
are commonly combined on
radiographic units because of
their similar dependance
on integrated Computer

Circuitry. APR and AEC
often are used in
conjunction with one
another. A radiographer can
use APR to select a
projection or position for a
specific anatomic part and

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view the KVP, mA and exposure time for manual techniques.

→ KVP = Energy of x-ray = higher penetrability, it moves through tissue.

→ The energy determines the quality of x-ray produced.

1) Increase in KVP = electron gain high energy.

2) higher the energy of electrons = greater quality of x-rays.

3) Greater Quality = greater penetrability.
KVP = Quantity = increased KVP = more x-rays produced.

⇒ We must select the optimum time as low as possible so high frequency machine are important.

⇒ Contrast Controlled by the KVP used.

⇒ Density Controlled by the mAs used.

(Part B)

Write about the positioning and techniques of the pelvic x-rays.

Ans: A Pelvis x-ray is a safe and painless test that uses a small amount of radiation to take a picture of the pelvic bone, which surrounds the hip area. During the examination, an x-ray machine sends a beam of radiation through the pelvis and images is recorded on special film or a computer.

The AP pelvis view is part of a pelvic series examining the iliac crest, sacrum, proximal femur, pubis, ischium, and the great pelvic ring. It is of considerable importance in the management of severely injured patient presenting to emergency department.

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For an AP view of the pelvis and hip, the patient is supine with the feet in slight (15"-20") internal rotation, which compensates for the normal anteversion of the femoral neck, elongating its images. Correct collimation and centering is evidenced by demonstration of both ilia equidistant to the edge of the radiograph. Both greater trochanters equidistant to the edge of the radiograph and the lower vertebral column. Centered to the middle of the radiograph.

THE
END