

Date: _____

(1)

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Paper

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Date

23-06-2020

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Q1401

Ans OPG

OPG mean Orthopantomogram
 it is scan that gives panoramic views of your teeth.
 Such like wisdom teeth loss and for other infection.

⇒ no use Jewellery and ~~is~~ removed radio-opaque object.
 For the fractured or Image area.

position:

⇒ First the patient goes to the Dental x-rays machine.

⇒ and both the holds hands.

⇒ The position would be sitting.

⇒ the head is go downward

⇒ The Frankfurt plane is parallel with the floor and machine is adjust.

⇒ the upper and lower incisors with groove.

⇒ when the patient ~~the~~ chin is rest ^{Not} position

- in machine.
- ⇒ The Sagittal plane light goes down the middle face of the patient.
 - ⇒ The head closely attached with restraints.
 - ⇒ The ~~patient~~ Doctor asked to Patient when the patient tongue on the upper arch roof of the mouth.
 - and it is in short time such 20 second.
 - ⇒ ~~when~~ ~~the~~ this time the X-ray exposure taken.

Direction: .

the anterior-posterior

light should be centered to the lateral incisor

⇒ Central laser light should be midline sagittal plane

⇒ Lateral laser light of the lateral incisor,

⇒ the images receptor present against the Anterior-posterior views.

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Image Characteristics:

- ⇒ The anatomical area would include mandibles and tempo-mandibular teeth.
 - ⇒ and also included density between the enamel and dentine.
 - ⇒ No evidence of movement unsharpness.
 - ⇒ No evidence of positioning such as including rotation, errors, etc.
 - ⇒ Spin and air shadow would be minimized.
- this is the somewhat a good image characteristics

Consideration:

- ⇒ it is number of factors, and patient movement, and positioning.
- ⇒ the patient gives a co-operation job some short movements.

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Q No 2

Ans

Lumbar Spine:
AP View

position:

⇒ The patient lies in supine position in face of lumbar X-ray table top.

⇒ The patient midline sagittal plane coincident to the center of table and bucky tray.

⇒ ~~both~~ the hands are ~~are~~ slightly away from the body.

⇒ the patient knee joint are flexed and feet are plantar position, onto the table top.

⇒ the lumbar region are parallel to the image receptor.

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⇒ the ~~large~~ large size of image receptor are necessary to the patient because of the including area is lower thoracic vertebrae and also sacro-iliac joint

⇒ the center of x-rays tube become vertical to the patient and median sagittal plane of lower costal margin of patient.

⇒ The patient stop breathing during exposure.

⇒ the patient remove all the metallic objects and remove glasses.

⇒ When air enter to the ~~lungs~~ body the image would be blurred.

Direction:

⇒ the center of x-rays beam is vertical to the midline of the patient at the level of lower costal margin.

Image Characteristics:

- ⇒ The including area is lowe 4th T12 vertebrae and also Sacro-Iliac Joint
- ⇒ No rotation occurs
- ⇒ ~~stop~~ During the exposure stop breathing!

Lumbar Spine Lateral:



Position:

- ⇒ The patient lies on lateral side above the bulky tray.
- ⇒ the arm should be raised and upward pillows in front of patient head.
- ⇒ the knee are flexed.

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⇒ The coronal plane during
through the center of
the spine should be
same and also perpendicular.

⇒ The image receptor center
to the lower costal
margin.

⇒ No Breathing.

Direction!

The Direct of
centered tube ~~vertical~~ perpendicular
to the patient lower
costal margin.

Image Characteristic,

⇒ the area include lower T12
vertebra and lumbar
sacral junction.

⇒ the posterior center of
margin can be superimposed
with each other.

⇒ The image would be
clear and intervertebral
disc space.

Q No 3

Ans

Knee

=> A P View!.

Position!.

The patient lies on supine or seated in x-rays table

=> The patient both legs extend in tabletop.

=> the legs attached posteriorly with the image receptor.

=> the area must be include, patella and also femoral condyle.

Dissection!.

=> the Dissection center of x-rays beam parallel to the midline of the patient.

=> Center 2.5 cm below the apex of the patella.

~~the~~

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Image Characteristics:

⇒ the pettal must be center. of the image receptor.

⇒ The femur third part and proximal part of tibia must be included.

Knee Lateral:

Position:

⇒ the patient lies on lateral side.

⇒ The affected legs flexed 45° to 90 degrees.

⇒ the other legs move forward, to the front side.

⇒ the sandbag is placed under the ankle of the affected side to bring the ~~the~~ tibia parallel to the image receptor.

⇒ the limbs must be adjusted that the femoral condyle superimposed vertically.

⇒ The medial Tibial Condyle must be centered of the Image receptor.

Dissection:

⇒ The center of x-rays tube must be coincided to medial tibial Condyle. ~~the~~ with the 90° degree.

Image Characteristic:

⇒ the Petal must be centered to the Image receptor

⇒ the femoral Condyle ~~must~~ should be superimposed with each other.

⇒ The Proximal Tibio-fibular joint not clearly visible.

Q No 4

Ans.

- ⇒ When ^{person} ~~patient~~ hit the car very dangerous.
- ⇒ Headaches somewhat acute in patient it felt very badly.
- ⇒ the doctor checked the patient and prescribed first two type of x-rays such as horizontally and Anterior posterior of a skull.
- ⇒ When these two x-rays are performed and check the doctor films of x-rays.
- ⇒ When patient skull are very badly feels and the doctor prescribed for CT and MRI.
- ⇒ CT ~~is~~ ^{only} procedure ~~is~~ ^{to} perform in short time and no gives more informative detail as compared ~~to~~ ^{with} MRI.

To MRI

⇒ and all after that
the doctor checks
the patient condition
and then decided to
which procedure
perform to the
patient such like
MRI perform or
CT perform.

⇒ the MRI is
magnetic resonance imaging.

⇒ It is more informative
and time 30 to 60 minutes
it should performed,

⇒ the brain bleeding and
other smaller bone fracture
or blood vessels blockage.

⇒ this type of condition
occur in patient but
the doctor decide to
MRI procedure.

Q No 5 (A)

Ans

KVP:

Kilovoltage Peak

⇒ high voltage in x-rays tube.

⇒ when thermionic emission occurs in tube because

the accelerated electron is toward anode target material.

⇒ ~~that~~ so KVP control energy of x-rays.

⇒ when highest kinetic etc energy electron strike to the anode target and

then produce maximum energy x-ray emission.

⇒ KVP change the kinetic energy.

⇒ KVP is inversely proportional to contrast.

⇒ high KVP → low absorption

low patient dose ← high transmission

⇒ KVP control & Quality of x-rays

Notes

mAs

product of exposure time and tube current is called as mAs.

⇒ mAs is milliamperes second

⇒ mAs is control optical density, when all other factors are constant.

⇒ mAs control number of electrons product inside the x-rays tubes.

⇒ mAs control quantity of x-rays

⇒ more radiation

will cause more photon of x-rays.

⇒ mAs control patient dose.

⇒ mAs does not effect on kinetic energy of electron and it is changing the number of electron.

⇒ For example

$mA \times S$

$mA = 160, S = 2$

$160 \times 2 = 320 \text{ mAs}$

Q1405 (B)

Ans

Pelvis:

Anterior posterior:

⇒ the patient lies supine position.

⇒ it is plane is midline ~~sagittal~~. Sagittal plane perpendicular of 90° degree to the tabletop.

⇒ the centered beam of X-rays tube must be coincident with the midline of the patient and below the centered of the bulky tray.

⇒ No rotation.

⇒ Stop breathing during exposure time.

⇒ the anterior-superior iliac spine must be equal distance with the table.

⇒ the both legs are abducted position are internally rotated.

⇒ the femoral neck of legs is centered of the image receptor.

Notes

⇒ remove jewellery and other metallic objects.

Dissection:

the X-rays tube is vertical position in centered of the image receptor

⇒ the area of interest is between the ~~the~~ upper border of Symphysis pubis and anterior-superior iliac spine and also full pelvis and.

proximal femoral:

⇒ the image receptor face 5cm above the upper border of iliac crest, and also pelvis include.

Image Characteristic:

⇒ the proximal femoral and lesser trochanter, and also iliac crest are included, and show

⇒ visible image No rotation during exposure.

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Consideration!:

Trauma Cases, other
pelvic Problem, gonorrhea

Problem:

⇒ it is very large
protocol.

Thank you