Radiographic Techniques 2

lecture 4

Nasal bone, paranasal sinuses, waters view & lateral view

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Nasal bone – lateral

Position of patient and image receptor

• The patient sits facing an **18 × 24 cm CR cassette** supported in the cassette stand of a vertical Bucky.

• The head turned so the median sagittal plane is parallel with the image receptor and the interpupillary line is perpendicular to the image receptor.

• The nose should be coincident with the centre of the image receptor.

Direction and location of the X-ray beam

• A horizontal central ray is directed through the centre of the nasal bones and collimated to include the nose.

Figure (1): Nasal bone – lateral projection.

Paranasal sinuses, waters view & lateral view

1. **Occipito-mental (waters view)**

This projection is designed to project the petrous part of the temporal bone below the floor of the maxillary sinuses so that fluid levels or pathological changes in the lower part of the sinuses can be clearly visualised.

Position of patient and image receptor

• The projection is best performed with the patient seated facing the vertical Bucky/receptor.

• The patient's nose and chin are placed in contact with the midline of the receptor and then the head is adjusted to bring the orbito-meatal baseline to a 45° angle to the Bucky/receptor.

• The median sagittal plane is at right-angles to the Bucky/receptor by checking the outer canthi of the eyes and the EAMs are equidistant.

• The patient should open their mouth as wide as possible prior to exposure. This will allow the posterior part of the sphenoid sinuses to be projected through the mouth.

Direction and location of the X-ray beam

• The collimated horizontal beam should be centered to the Bucky/receptor before positioning is undertaken.

• The horizontal central line of the Bucky/receptor should be at the level of the lower orbital margins.

• Collimate to include all of the sinuses.

Essential image characteristics

• **The petrous ridges** must appear below the floors of the maxillary sinuses.

• There should be no rotation. This can be checked by ensuring the distance from the lateral orbital wall to the outer skull margins is equidistant on both sides.

Common faults and solutions

• Petrous ridges appearing over the inferior part of the maxillary sinuses. In this case several things may have occurred: the orbito-meatal baseline was not positioned at 45° to the film; a 5–10° caudal angulation may be applied to the tube to compensate. As this is an uncomfortable position to maintain, patients often let the angle of the baseline reduce between positioning and exposure.

• Always check the baseline angle immediately before exposure.

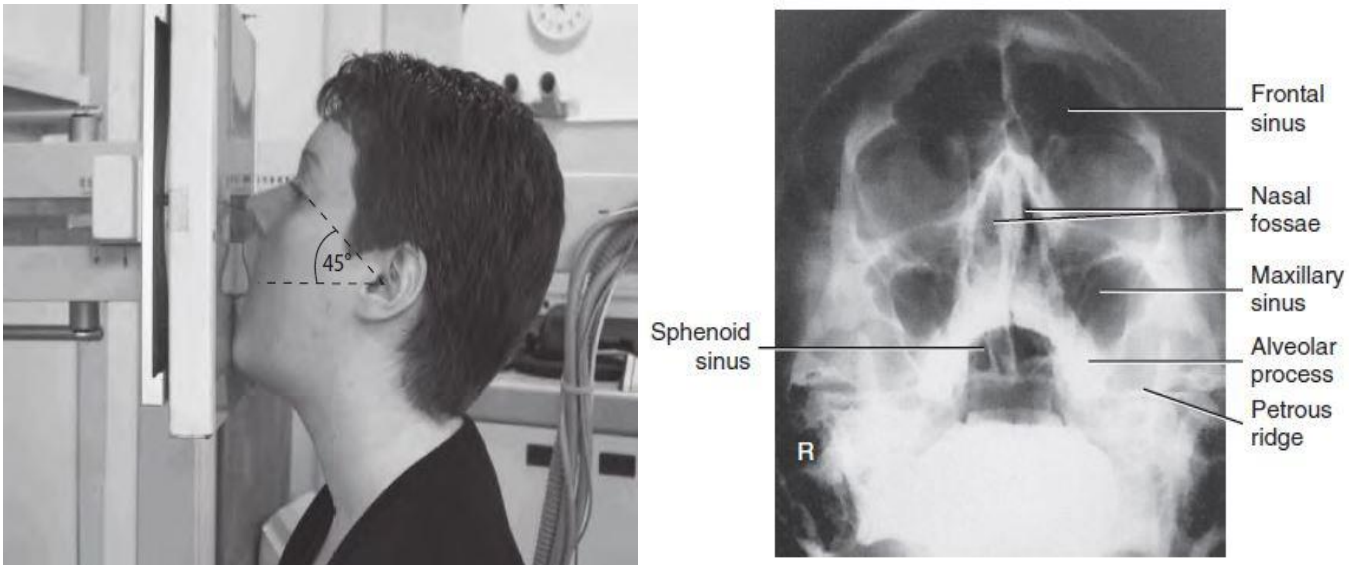

Figure (2): Occipito-mental (waters view) projection.

2. Lateral

Position of patient and image receptor

• The patient sits facing the vertical Bucky/receptor and the head is then rotated such that the median sagittal plane is parallel to the Bucky/receptor and the interpupillary line is perpendicular to it.

• The shoulders may be rotated slightly to allow the correct position.

• If used, **an 18 × 24 cm CR cassette** is positioned longitudinally in the erect Bucky such that its lower border is 2.5 cm below the level of the upper teeth.

Direction and location of the X-ray beam

• A collimated horizontal central ray should be employed to demonstrate fluid levels.

• The collimated horizontal beam is centred to a point 2.5 cm inferior to the outer canthus of the eye.

Essential image characteristics

• A true lateral will have been achieved if the lateral portions of the floors of the anterior cranial fossa are superimposed.

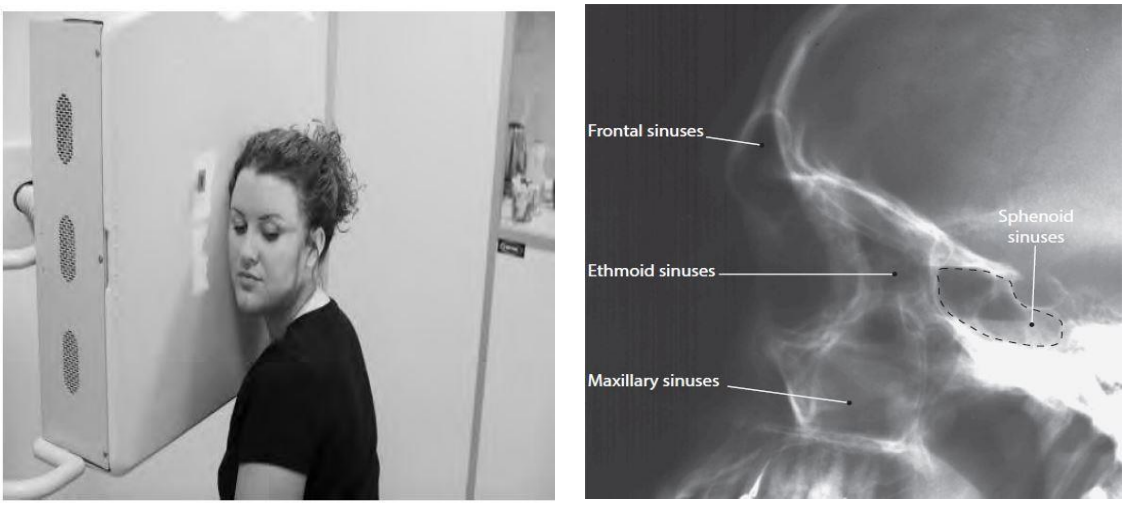

Figure (3): lateral projection of Paranasal sinuses.