Reading Hospital School of Health Sciences
Medical Imaging Program
MI 263 Clinical Seminar V
2022-2023

Facial Bones

Routine:	Parietoacanthial Waters, PA Axial Exaggerated Caldwell, Left Lateral & SMV
Position/Projection:	**Erect or Recumbent (Parietoacanthial Waters)**
Patient Prep:	Remove anything removable from their mouth or head.
Technique:	**85 kVp ○●○: non AEC 8 mAs (Bucky)**
SID:	40" SID
Collimation:	10 X 12 Portrait (Lengthwise)
Patient Position:	Patient is placed in the PA projection. Rest patient's head on the tip of the extended chin. Hyperextend the neck so that the OML forms a 37degree angle with the IR. The mentomeatal line will be perpendicular to the IR. Midsagittal plane is perpendicular to the IR. CR should exit the acanthion.
Central Ray:	Central ray is perpendicular. Central ray should exit the acanthion.
Marker Placement:	Place a right or left marker in the light field.
Shielding:	RH does not require gonadal shielding. If patient requests a shield, educate them on why we do not shield. If shield is still requested, place shield on posterior surface.
Breathing Instructions:	Suspended respiration.
Purpose/ Structures:	The waters method demonstrates the orbits, maxillae, and zygomatic arches.

Evaluation Criteria:

- Evidence of proper collimation & presence of side marker placed clear of anatomy of interest
- Entire orbits and facial bones
- No rotation or tilt, demonstrated by:
    - Distance between the lateral border of the skull and the orbits should be equal on both sides
    - MSP of head aligned with long axis of collimated field
- Petrous ridges should be projected immediately below the maxillary sinuses
- Soft tissue and bony trabecular detail

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Routine:	Parietoacanthial Waters, PA Axial Exaggerated Caldwell, Left Lateral & SMV
Position/Projection:	**Erect or Recumbent (PA Axial Exaggerated Caldwell)**
Patient Prep:	Remove anything removable from their mouth or head.
Technique:	**85 kVp ○●○: non AEC 7.1 mAs (Bucky)**
SID:	40" SID
Collimation:	9 X 6 Landscape (Crosswise)
Patient Position:	Patient is place in the PA projection with forehead and nose against the IR. OML perpendicular to the IR.
Central Ray:	Tube is angled 30° caudad. Central ray exits the infra-orbital rim.
Marker Placement:	Place a right or left marker in the light field.
Shielding:	RH does not require gonadal shielding. If patient requests a shield, educate them on why we do not shield. If shield is still requested, place shield on posterior surface.
Breathing Instructions:	Suspended respiration.
Purpose/ Structures:	Demonstrates the orbital floor.

Evaluation Criteria:

- Evidence of proper collimation & presence of side marker placed clear of anatomy of interest
- No rotation or tilt, demonstrated by:
    - Equal distances from the lateral border of the skull to lateral border of orbits on both sides.
    - MSP of head aligned with long axis of the collimated field
- Petrous ridges should be projected on the maxillary sinuses, below the infraorbital margin.
- Bony detail and surrounding soft tissues

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Facial Bones

Routine: Parietoacanthial Waters, PA Axial Exaggerated Caldwell, Left Lateral & SMV

Position/Projection: **Erect or Recumbent (Left Lateral)**

Patient Prep: Remove anything removable from their mouth or head.

Technique: **80 kVp ○●○: non AEC 3.2 mAs (Bucky)**

SID: 40" SID

Collimation: 8 X 10 Portrait (Lengthwise)

Patient Position: Patient is placed in an anterior oblique position. Midsagittal plane parallel to the IR and interpupillary line is perpendicular to the IR. Flex the neck so that the IOML is perpendicular to the front edge of the IR.

Central Ray: Tube is perpendicular. Central ray is at the point halfway between the outer canthus and the EAM.

Marker Placement: Place a left marker in the light field anterior to the patient.

Shielding: RH does not require gonadal shielding. If patient requests a shield, educate them on why we do not shield. If shield is still requested, place shield on posterior surface, on hip closest to tube.

Breathing Instructions: Suspended respiration.

Purpose/ Structures: The lateral projection demonstrates a lateral image of the bones of the face, with the right and left sides superimposed.

Evaluation Criteria:

- Evidence of proper collimation & presence of side marker placed clear of anatomy of interest
- All facial bones in their entirety, with the zygomatic bone in the center
- No rotation or tilt of the facial bones, demonstrated by:
    - Almost perfectly superimposed mandibular rami
    - Superimposed orbital roofs
    - Sella turcica in profile
- Soft tissue and bony trabecular detail

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Facial Bones

Routine:	Parietoacanthial Waters, PA Axial Exaggerated Caldwell, Left Lateral & SMV
Position/Projection:	**Erect or Recumbent (SMV)**
Patient Prep:	Remove anything removable from their mouth or head.
Technique:	**80 kVp @ 8 mAs (Bucky)**
SID:	40" SID
Collimation:	12 X 10 Landscape (Crosswise)
Patient Position:	Patient is placed in an AP projection. Hyperextend the neck so that the IOML is nearly parallel with the IR. Rest the head on its vertex, and adjust the head so that the midsagittal plane is perpendicular to the IR.
Central Ray:	Tube is perpendicular to the IOML. Central ray goes through the gonion, ¾ inch superior to the EAM.
Marker Placement:	Place a right or left marker in the light field.
Shielding:	RH does not require gonadal shielding. If patient requests a shield, educate them on why we do not shield. If shield is still requested, place shield on anterior surface.
Breathing Instructions:	Suspended respiration.
Purpose/ Structures:	Bilateral symmetric SMV images of the zygomatic arches. Unless very flat or traumatically depressed, the arches, being farther from the IR, are projected beyond the prominent parietal eminences by the divergent beam.

Evaluation Criteria:

- Evidence of proper collimation & presence of side marker placed clear of anatomy of interest
- Zygomatic arches are free from overlying structures.
- No rotation or tilt, demonstrated by:
    - Zygomatic arches are symmetric and without foreshortening.
- Soft tissue and bony trabecular detail.

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Nasal Bones

Routine: Parietoacanthial Waters, Right & Left Laterals

Position/Projection: **Erect or Recumbent (Parietoacanthial Waters)**

Patient Prep: Remove anything removable from their mouth or head.

Technique: **85 kVp ○●○: non AEC 8 mAs (Bucky)**

SID: 40" SID

Collimation: 6 X 6

Patient Position: Patient is placed in the PA projection. Rest patient's head on the tip of the extended chin. Hyperextend the neck so that the OML forms a 37degree angle with the IR. The mentomeatal line will be perpendicular to the IR. Midsagittal plane is perpendicular to the IR.

Central Ray: Tube is perpendicular. Central ray should exit the acanthion.

Marker Placement: Place a right or left marker in the light field.

Shielding: RH does not require gonadal shielding. If patient requests a shield, educate them on why we do not shield. If shield is still requested, place shield on posterior surface.

Breathing Instructions: Suspended respiration.

Purpose/ Structures: The waters method demonstrates the nasal septum.

Evaluation Criteria:

- Evidence of proper collimation & presence of side marker placed clear of anatomy of interest
- Most of orbits and facial bones included: bony nasal septum is of main concern
- No rotation or tilt, demonstrated by:
    - Distance between the lateral border of the skull and the orbits should be equal on both sides
    - MSP of head aligned with long axis of collimated field
- Petrous ridges should be projected immediately below the maxillary sinuses
- Soft tissue and bony trabecular detail

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Nasal Bones

Routine:	Parietoacanthial Waters, Right & Left Laterals
Position/Projection:	**Erect or Recumbent (Right & Left Laterals)**
Patient Prep:	Remove anything removable from their mouth or head.
Technique:	**70 kVp @ 2.5 mAs (No Bucky)**
SID:	40" SID
Collimation:	4X4
Patient Position:	Patient placed in an anterior oblique position. Midsagittal plane parallel to the IR and interpupillary line is perpendicular to the IR. Flex the neck so that the IOML is perpendicular to the front edge of the IR.
Central Ray:	Tube is perpendicular to the bridge of the nose. Central ray is at a point ½ inch distal to the nasion.
Marker Placement:	Place a right or left marker in the light field anterior to the patient.
Shielding:	RH does not require gonadal shielding. If patient requests a shield, educate them on why we do not shield. If shield is still requested, place shield on posterior surface, on hip closest to tube.
Breathing Instructions:	Suspended respiration.
Purpose/ Structures:	Lateral images of the nasal bones demonstrate the side closest to the IR and soft tissue structures of the nose.

Evaluation Criteria:

- Evidence of proper collimation & presence of side marker placed clear of anatomy of interest
- Nasal bones, anterior nasal spine and frontonasal suture
- No rotation of nasal bones and soft tissue
- Soft tissue and bony trabecular detail