Radiographic procedures (3)
12: Paranasal sinuses

Merrill’s Chapter 22

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Outline

- Paranasal sinuses
- Technical considerations
- Radiation protection
- Projections
Paranasal sinuses

**Fig. 22-1** Anterior aspect of paranasal sinuses, showing lateral relationship to each other and to surrounding parts.

**Fig. 22-2** Schematic drawing of paranasal sinuses, showing AP relationship to each other and surrounding parts.
Effect of exposure parameters

Correctly exposed radiograph

Overexposed radiograph

Underexposed radiograph
Effect of central ray angle

Fig. 22-6 Coconut, vertical position: horizontal central ray. Air-fluid level is demonstrated (arrow).

Fig. 22-7 Coconut, vertical position: central ray angled 45 degrees upward. Note that a fluid level is not as sharp.
All groups of sinuses

Lateral projection
Lateral sinuses
Frontal and anterior ethmoidal sinuses
PA axial projection (Caldwell method)
Frontal and anterior ethmoidal sinuses
PA axial projection (Caldwell method)
PA axial sinuses

- Frontal sinus
- Ethmoidal sinus
- Petrous ridge
- Sphenoidal sinus
- Maxillary sinus
Maxillary sinuses

Parietoacanthial projection (Waters method)
Parietoacanthial projection (Waters method)

Fig. 22-14  Proper positioning. Petrous ridges are projected below maxillary sinuses.

Fig. 22-15  Improper positioning. Petrous ridges are superimposed on maxillary sinuses.
Parietoacanthial sinuses
(Waters Method)
Maxillary and ethmoidal sinuses
Parietoacanthial projection
(open-mouth Waters method)
Parietoacanthial sinuses
(open mouth Waters method)
Ethmoidal and sphenoidal sinuses

Submentovertical method
Submentovertical sinuses
Ethmoidal, sphenoidal and maxillary sinuses
PA projection
PA posterior ethmoidal sinuses

- Sphenoid plane
- Petrous ridge
- Posterior ethmoid air cells
- Inferior orbital margin
PA sphenoidal sinuses
PA maxillary sinuses
Reference