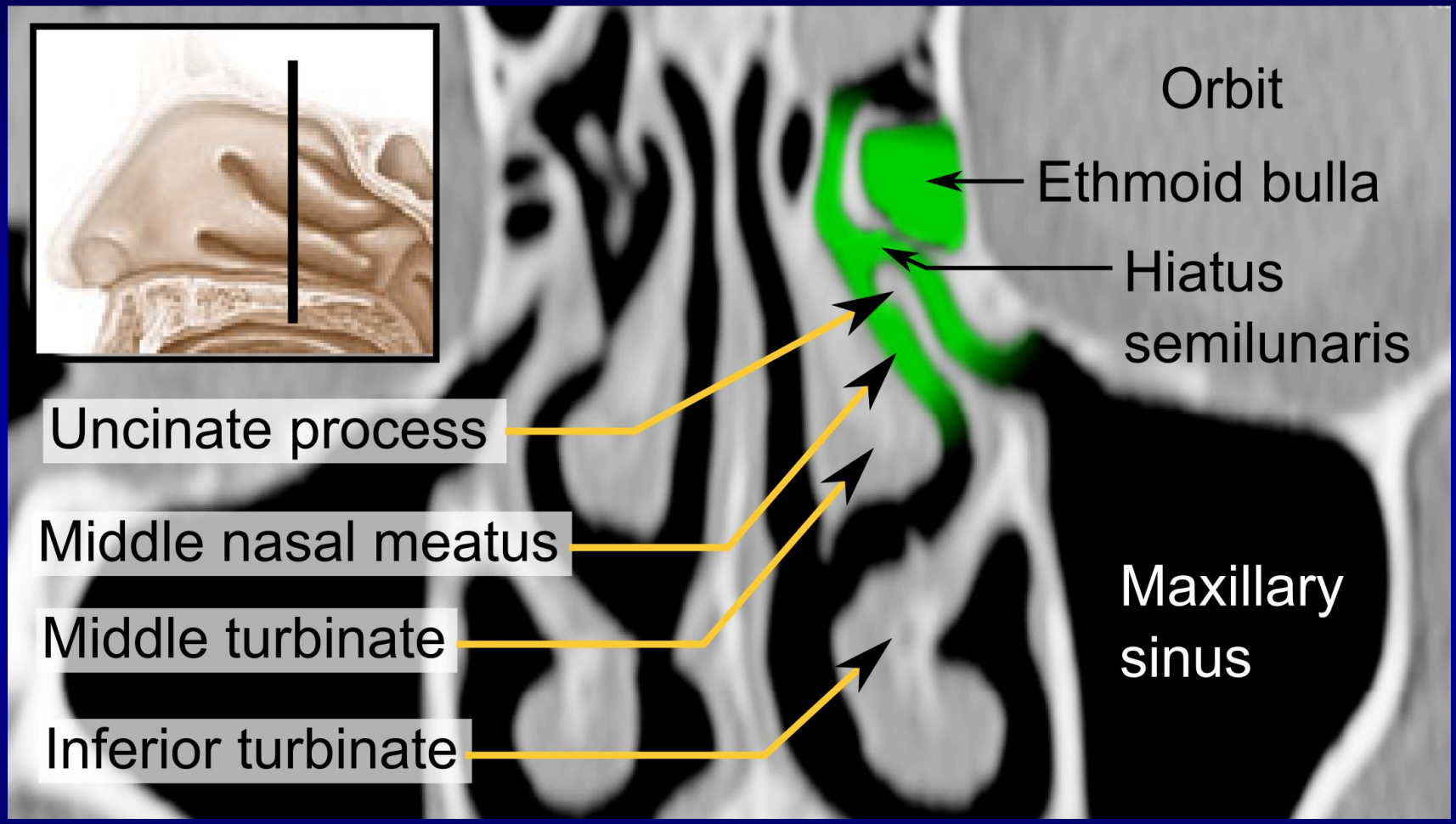
Ostiomeatal complex



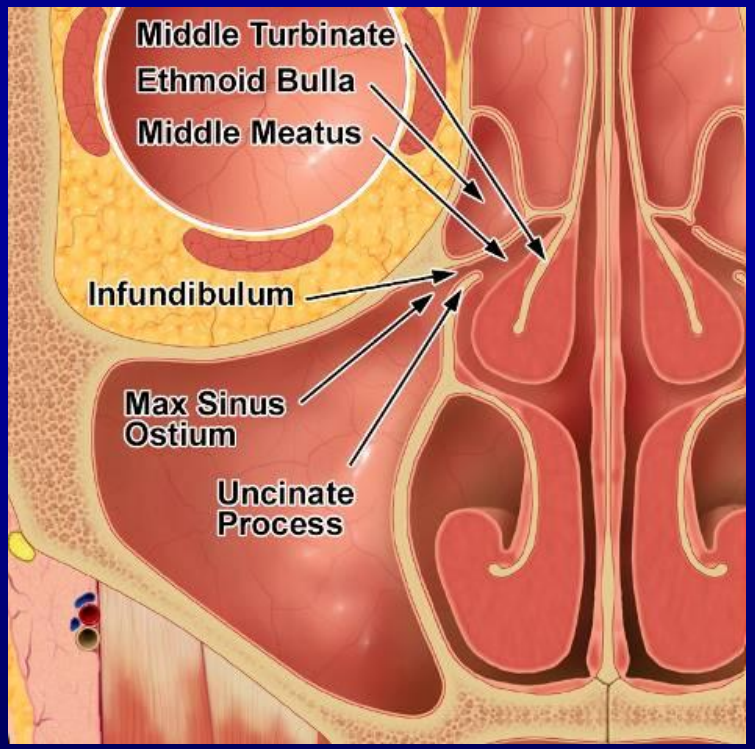
Anatomic region where drainage of frontal, anterior ethmoid, and maxillary sinuses occurs to to the middle meatus.

Ostiomeatal Complex

- Maxillary ostium:
  - drainage channel of the maxillary sinus
- Infundibulum:
  - Common channel that drains the ostia of the maxillary antra and anterior ethmoid air cells to the hiatus semilunaris
- Ethmoid bulla:
  - Usually a single air cell that projects over the hiatus semilunaris
- Uncinate process:
  - hook-like process that arises from the posteromedial aspect of the nasolacrimal duct and forms the anterior boundary of the hiatus semilunaris
- Hiatus semilunaris:
  - final drainage passage; a region between the ethmoid bulla superiorly and free-edge of the uncinate process

Ostiomeatal Complex

- Includes
  1. Superomedial maxillary sinus
  2. Maxillary infundibulum
  3. Uncinate process
  4. Ethmoid bulla
  5. Hiatus semilunaris
  6. Middle meatus



Drainage Pathways

- Anterior → Middle Meatus
  - Frontal sinus
  - Maxillary sinus
  - Anterior ethmoid air cells
- Posterior → Superior Meatus
  - Sphenoid sinus
  - Posterior ethmoid air cells

Normal aeration variants in vicinity of OMU

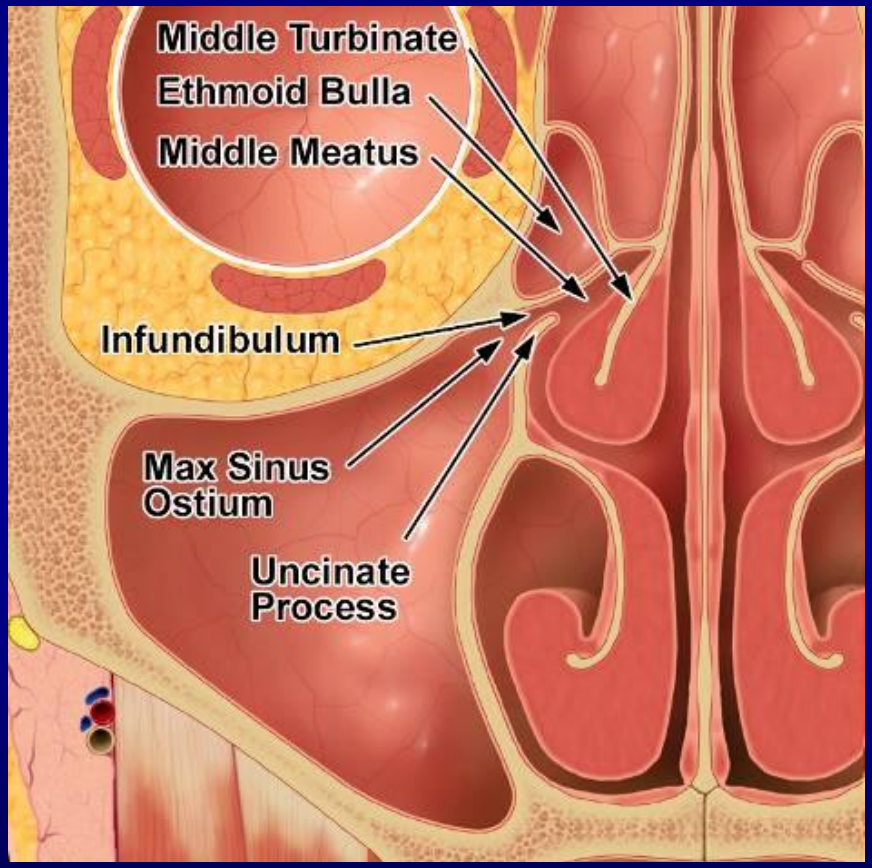
- **Concha bullosa**: Aeration of nasal turbinate, most commonly **middle turbinate**
  - When inflamed, concha bullosa may obstruct OMU at middle meatus
  - Complete obstructive OMU pattern with frontal, maxillary, and anterior ethmoid opacification
- **Haller cell** (infraorbital ethmoid air cell): Air cell located inferolateral to orbit and lateral to maxillary infundibulum
  - When inflamed, may obstruct maxillary infundibulum creating isolated maxillary infundibular pattern of sinus disease
  - Infundibular pattern: Only maxillary sinus is diseased with sparing of ethmoid sinues
- **Agger nasi** air cells: Most anterior ethmoid air cells
  - Found lateral to lamina papyracea, adjacent to frontal recess
  - When inflamed, agger nasi air cells may obstruct frontal recess, causing isolated opacification of frontal sinus without involving anterior ethmoid or maxillary sinuses

Ostiomeatal Complex

Middle meatus

Space lateral to middle turbinate

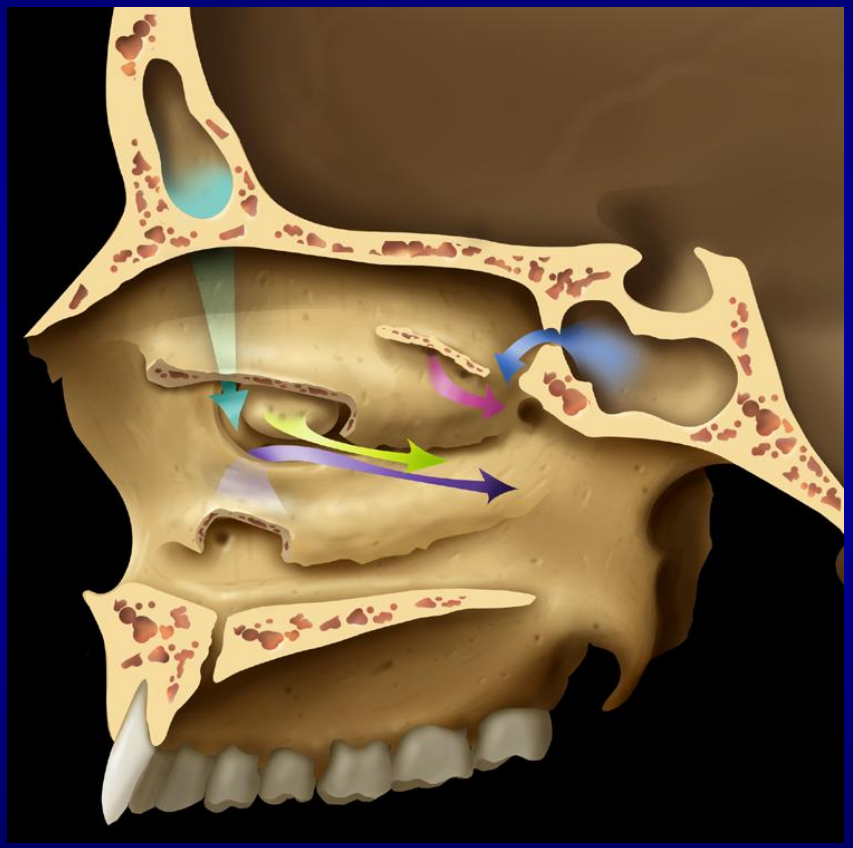
- Frontal sinus ostium & Recess
- Maxillary sinus ostium
- Infundibulum
- Middle Meatus
  - Anterior Ethmoid cells



Ostiomeatal unit/complex

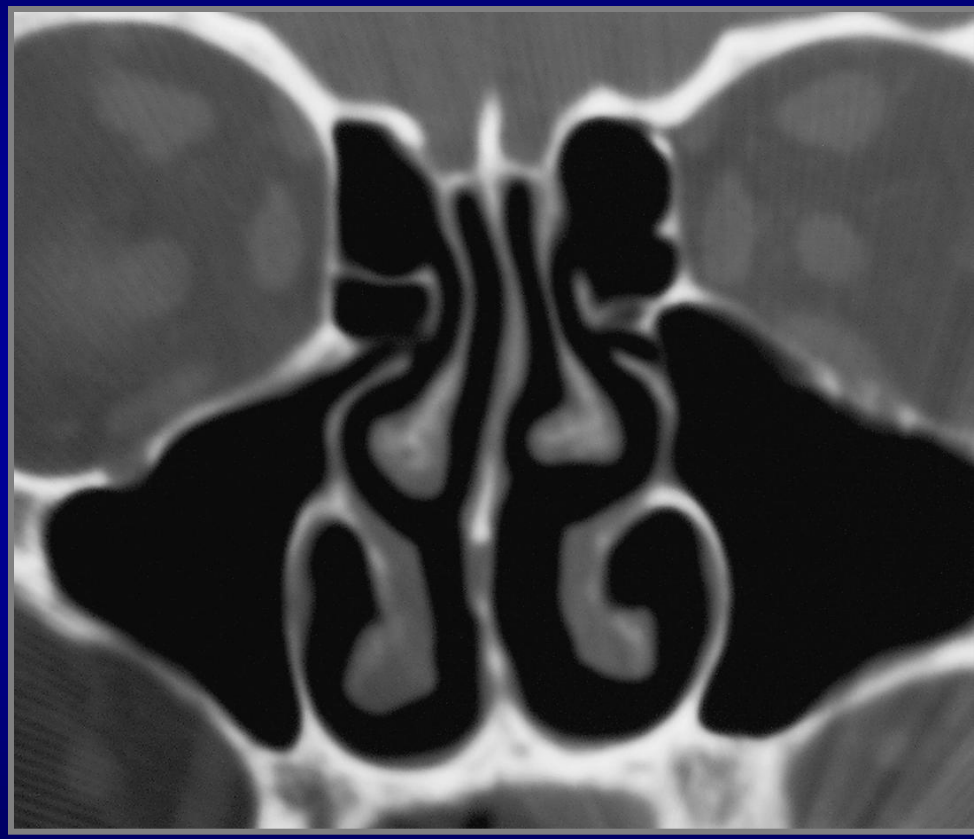
- Long AP extension
- More complicated than single slice at uncinate process

1) Maxillary sinus ostium
2) Eth. infundibulum
3) Frontal recess



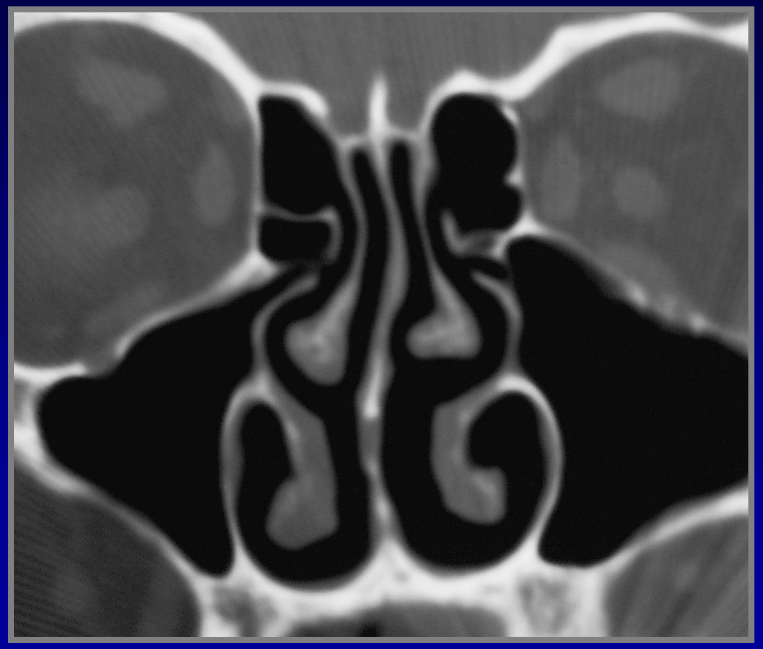
Normal OMU

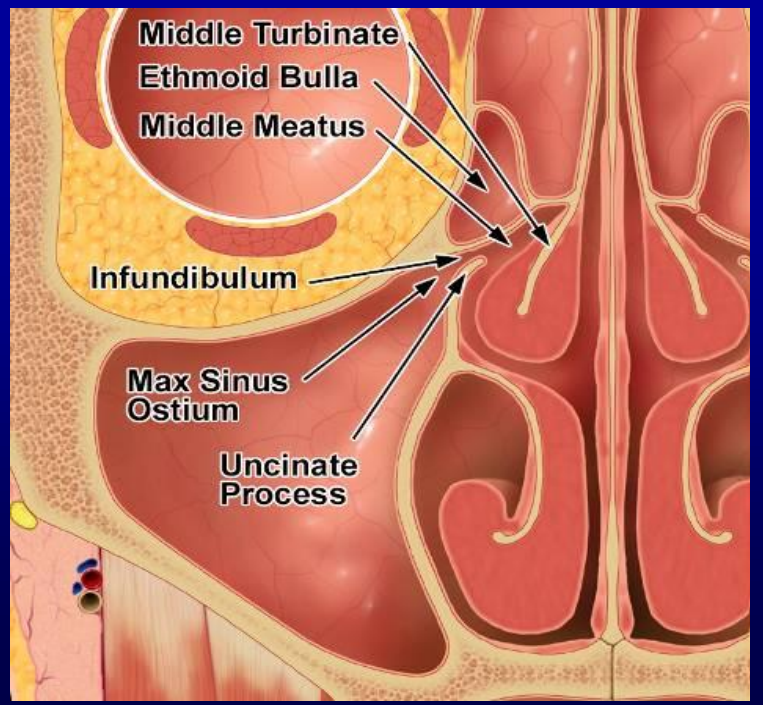
- Anatomic region where anterior ethmoids, frontal and maxillary sinus drain
- Variable, because of anatomic variants



Normal OMU

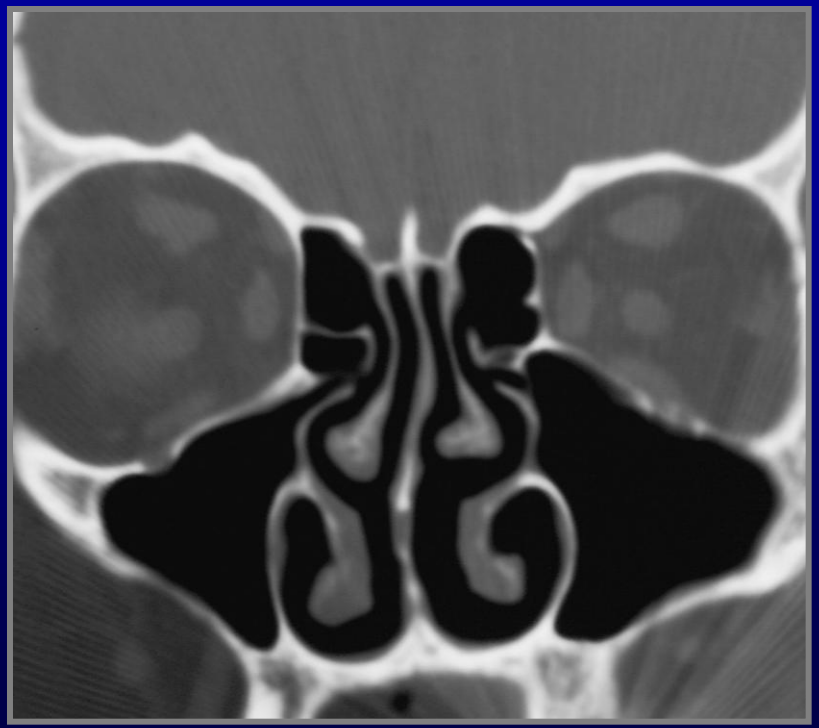
- Infundibulum – connects max sinus ostium to middle meatus
- Middle meatus – space between mid turb and medial max wall
- Uncinate process
- Ethmoid bulla – largest ethmoid cell
- (Hiatus semilunaris – space between uncinate process and ethmoid bulla)





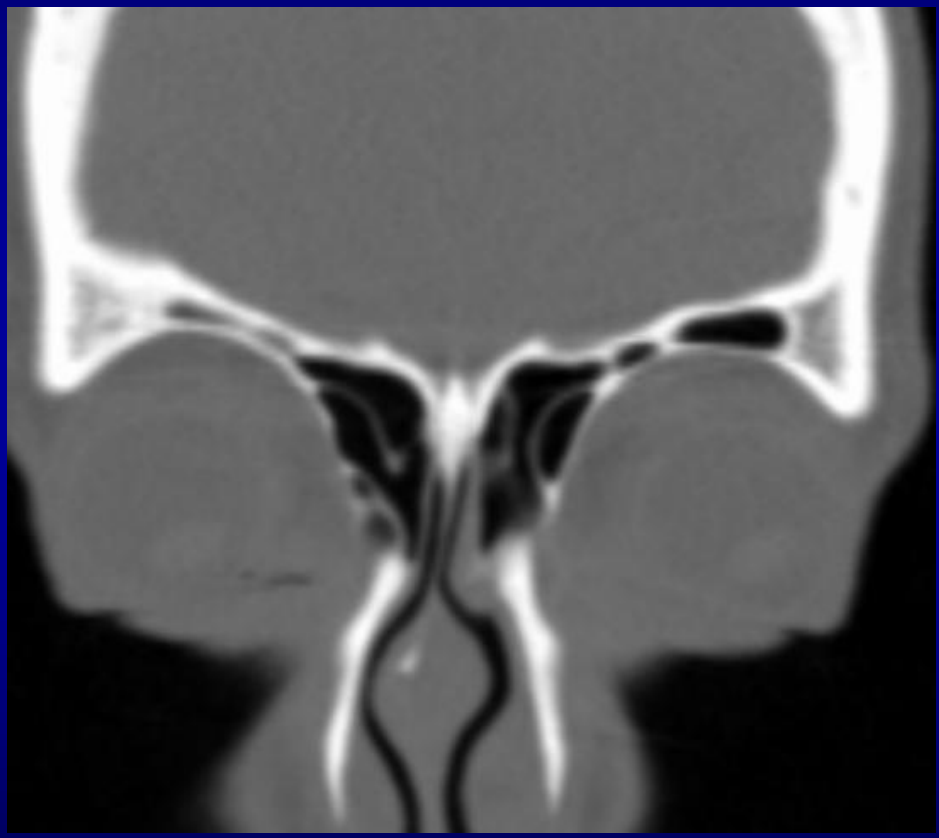
Sinus drainage – maxillary sinus (OMU)

- Maxillary ostium
  - Atelectatic uncinate process
  - Large concha bullosa of middle turbinate
  - Large Haller cell
  - Cyst or polyp



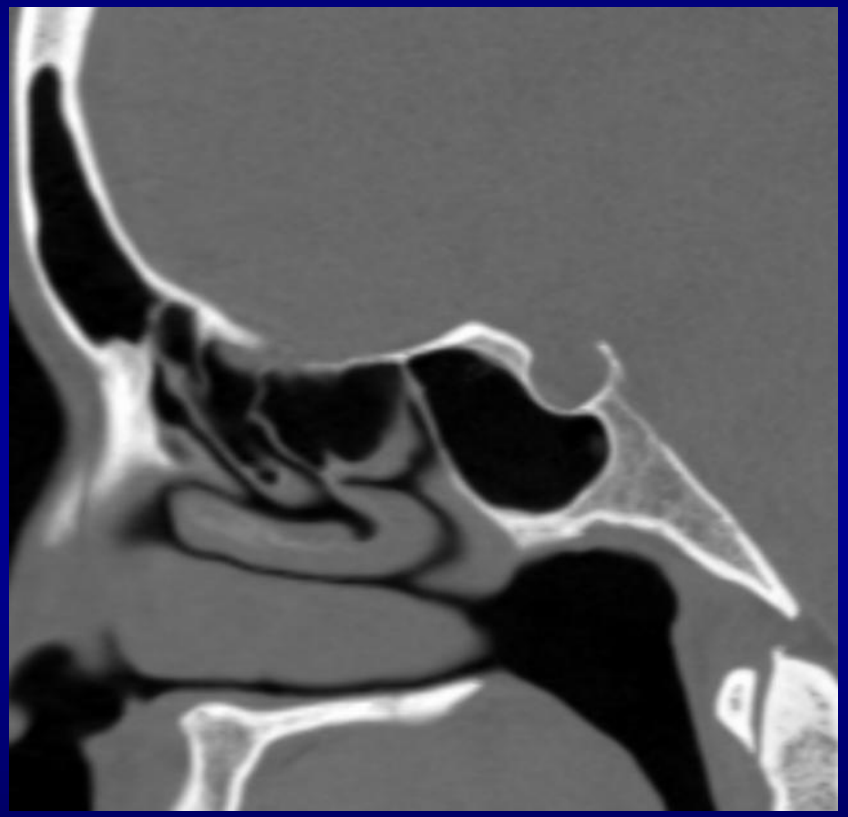
Sinus drainage – frontal sinus (OMU)

- Frontal recess
  - Large agger nasi
  - Frontal cells – above the agger nasi
  - Large ethmoid bulla
  - Large concha bullosa of middle turbinate, esp. superior aspect



Sinus drainage – ethmoid sinus (OMU)

- Ethmoid infundibulum
  - Middle meatus
  - Large middle turb. concha bullosa
  - Narrowed middle meatus



Normal OMU - Checklist

- Anterior
  - Frontal sinus, recess
  - Agger nasi cell, frontal cells
- Posterior
  - Uncinate process
  - Haller cells
  - Maxillary sinus, ostium, infundibulum
  - Ethmoid bulla
  - Middle turbinate/meatus