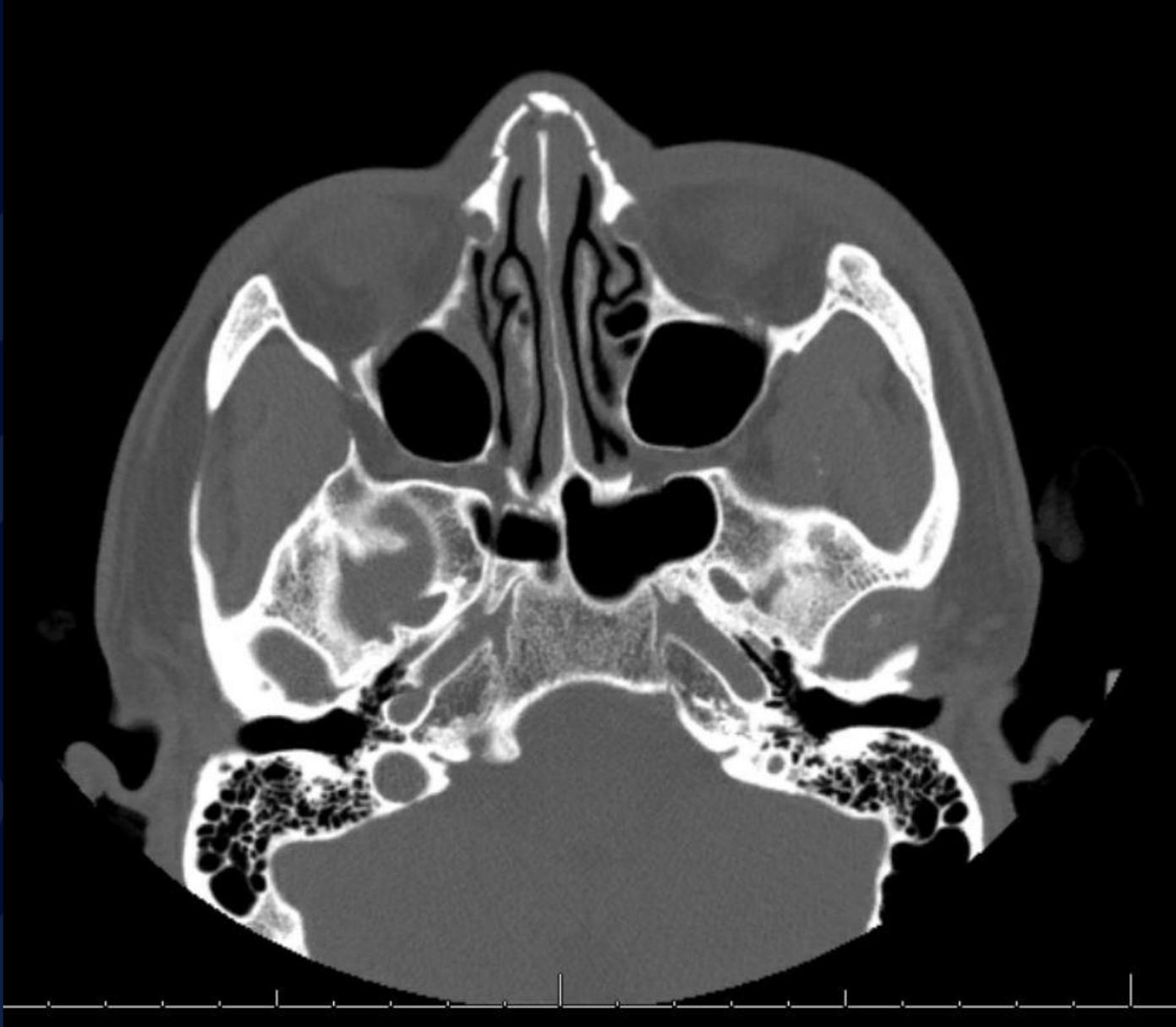


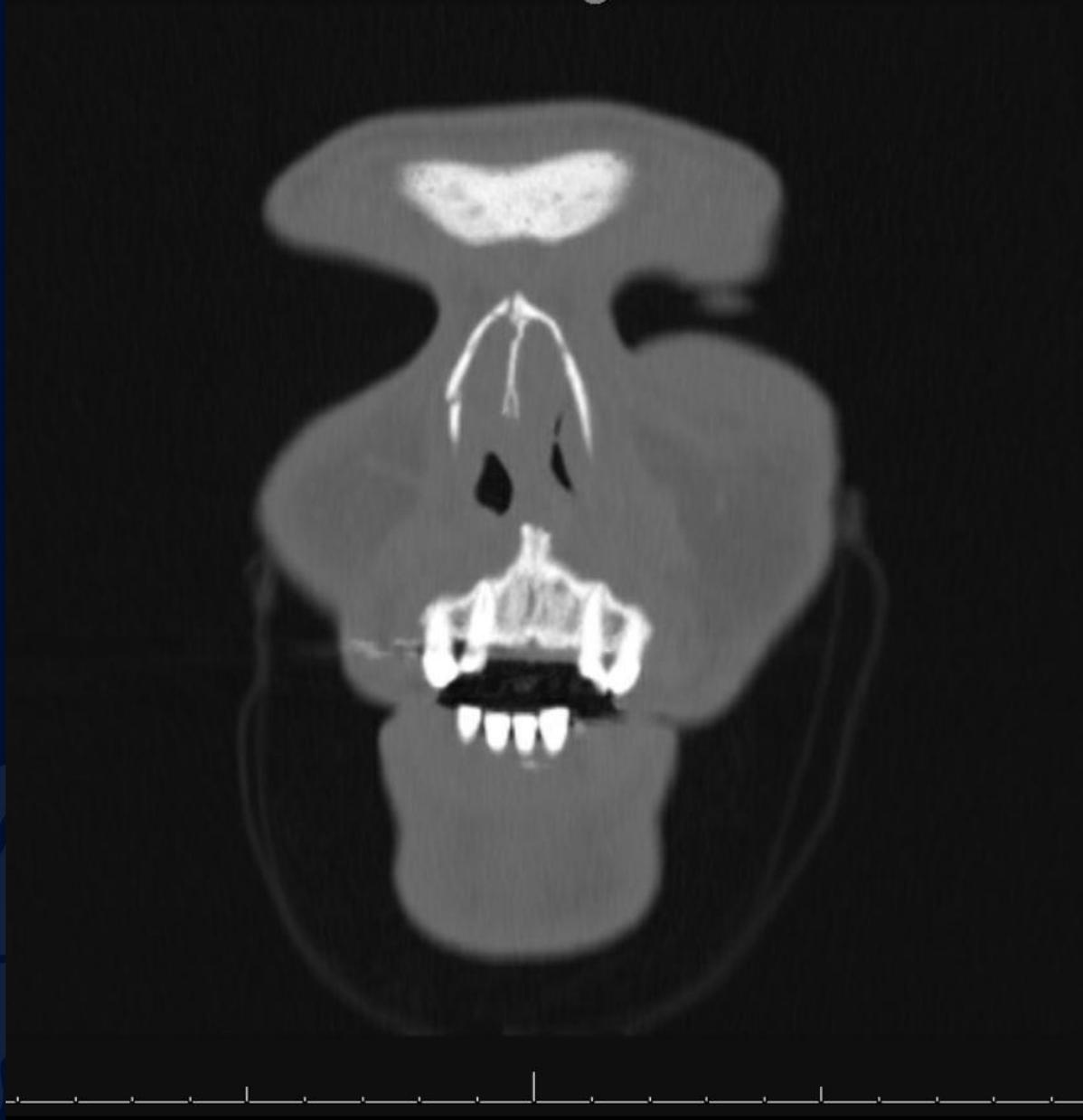
# 40-year-old male with facial trauma and pain

Joseph Ryan, MD, PhD  
Michael Baldwin, MD

CT of the facial bones  
and adjacent soft tissues  
without intravenous  
contrast







A large, stylized oak leaf graphic in a dark blue color, positioned on the left side of the slide. It features detailed vein patterns and a lobed edge.

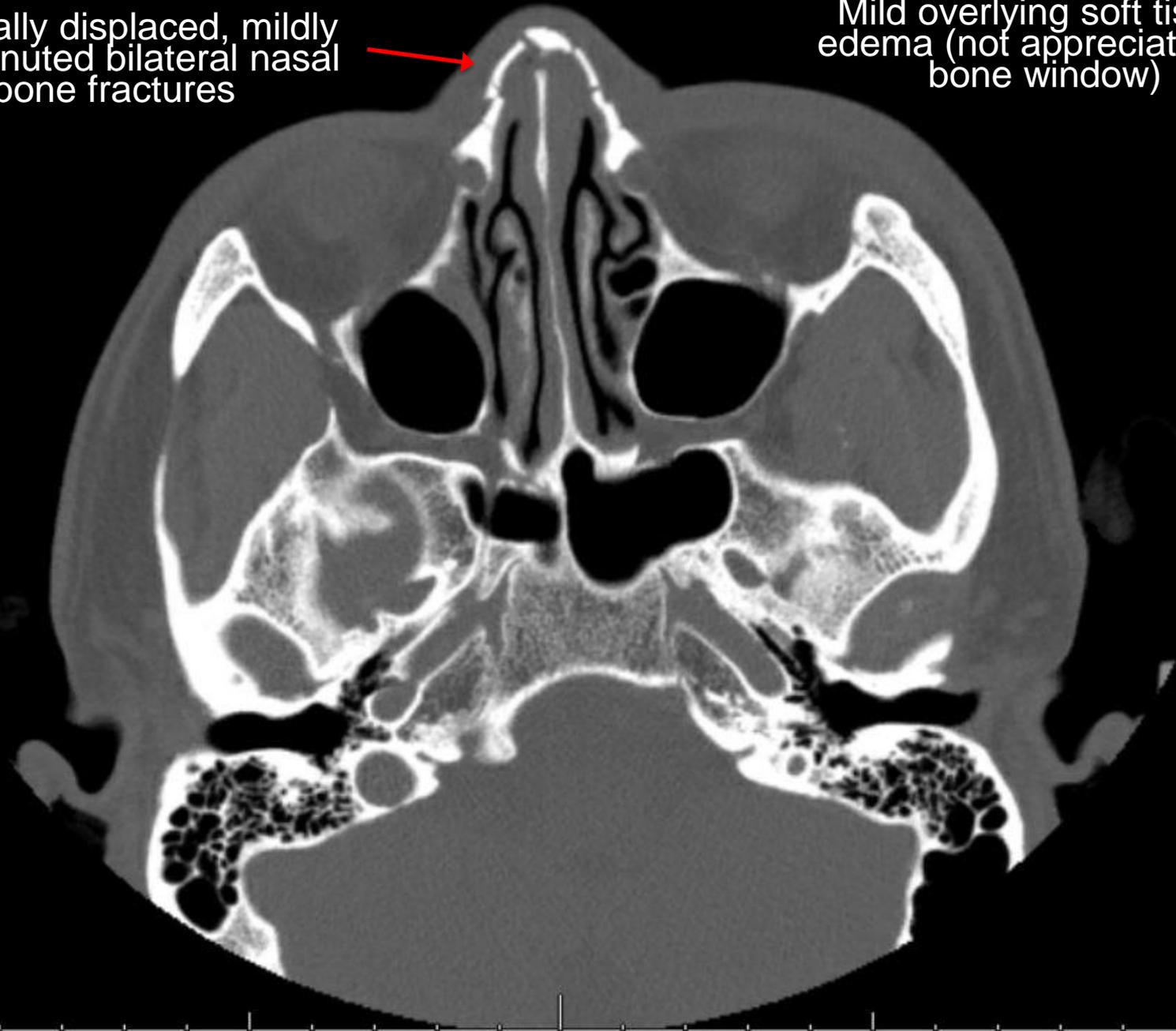
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# Nasal bone fracture with hemosinus

Minimally displaced, mildly comminuted bilateral nasal bone fractures



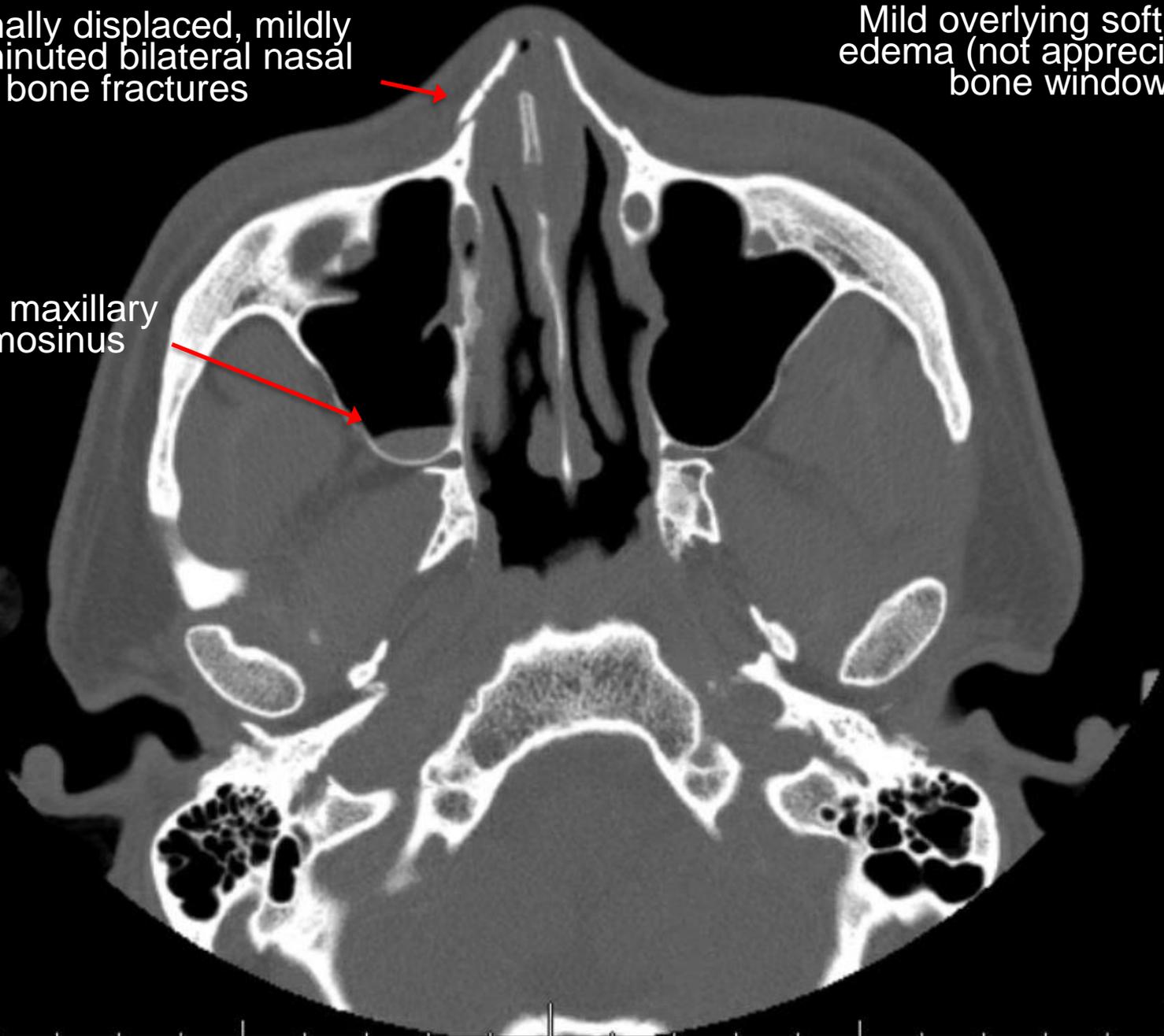
Mild overlying soft tissue edema (not appreciated on bone window)



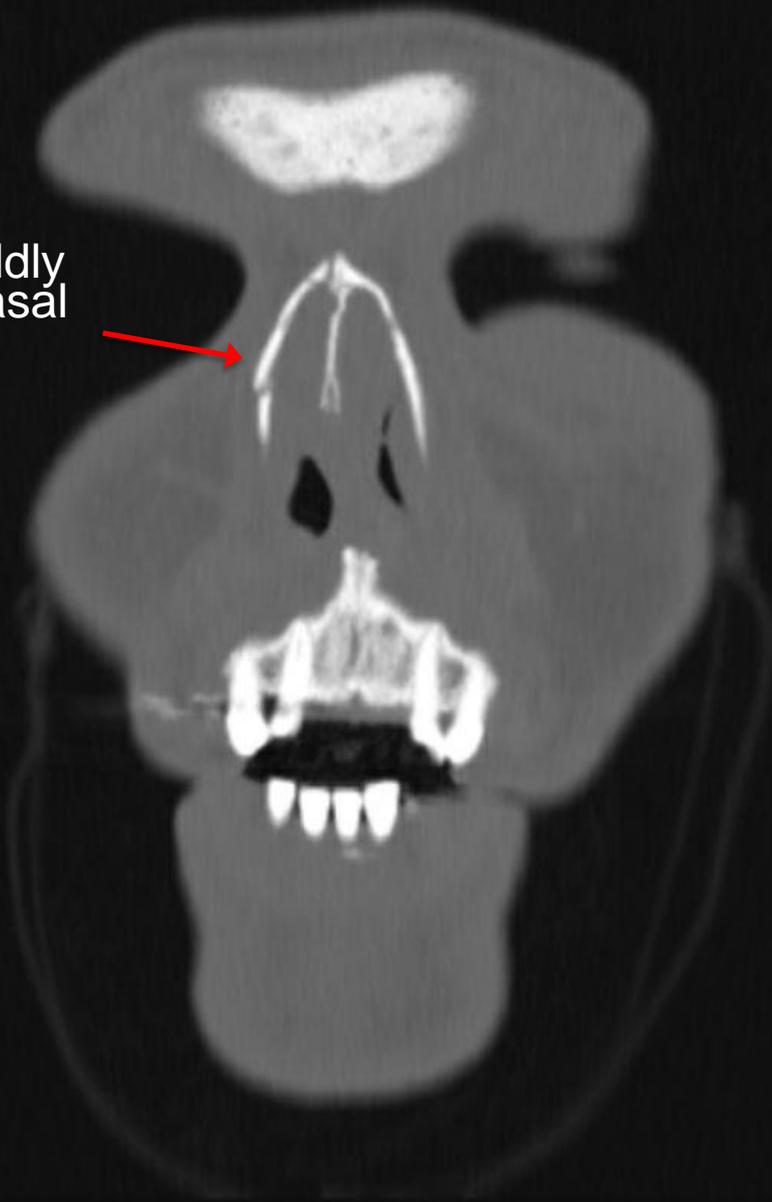
Minimally displaced, mildly comminuted bilateral nasal bone fractures

Mild overlying soft tissue edema (not appreciated on bone window)

Right maxillary hemosinus



Minimally displaced, mildly comminuted bilateral nasal bone fractures



# Background/Diagnosis

- Nasal bone fracture is the most common facial bone fracture (nearly half)
- Lateral impact injuries more commonly cause fracture
- Often additional facial fractures are present
  - Osseous nasal septum
  - Orbital blow-out fracture
  - Maxillary frontal process
- Plain radiographs ~80% sensitive, lateral view and Waters view helpful
- CT ~100% sensitive for nasal bone fracture identification
- Hyperattenuating layering fluid in a paranasal sinus following trauma is suspicious for acute hemorrhage into the sinus (hemosinus)
  - Other causes of hyperattenuating paranasal sinus opacification (regardless of trauma history) include fungal sinus disease and inspissated paranasal secretions

# Management

- If only minimally displaced and alignment anatomic, no treatment necessary
- If significant displacement, then treatment is needed to avoid unfavorable cosmetic result as well as impaired nasal function/difficulty breathing
- Untreated displaced nasal fractures account for many rhinoplasty/septoplasty procedures
- Septal hematoma, which can cause nasal septal perforation and necrosis, is a feared complication and can result in severe nasal collapse and deformity
- The presence of nasal bone fracture and traumatic hemosinus should prompt careful examination for additional facial bone/paranasal sinus fracture(s), although none were evident in this case

# References

- 1) <https://radiopaedia.org/articles/nasal-bone-fracture>
- 2) <https://radiopaedia.org/articles/hyperattenuating-paranasal-sinus-opacification>
- 3) Baek HJ, Kim DW, Ryu JH et-al. Identification of Nasal Bone Fractures on Conventional Radiography and Facial CT: Comparison of the Diagnostic Accuracy in Different Imaging Modalities and Analysis of Interobserver Reliability. Iran J Radiol. 2013;10 (3): 140-7.
- 4) Kucik CJ, Clenney T, Phelan J. Management of acute nasal fractures. Am Fam Physician. 2004;70 (7): 1315-20.
- 5) Kennedy DW, Bolger WE, Zinreich SJ. Diseases of the Sinuses: Diagnosis and Management. pmph usa. ISBN:1550090453.