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Sinonasal NK/T-cell Lymphoma Sniffing Out Clues For Diagnosis

Jeremy Daniel, D.O.

Vivek Gupta, M.D.

Alok A. Bhatt, M.D.

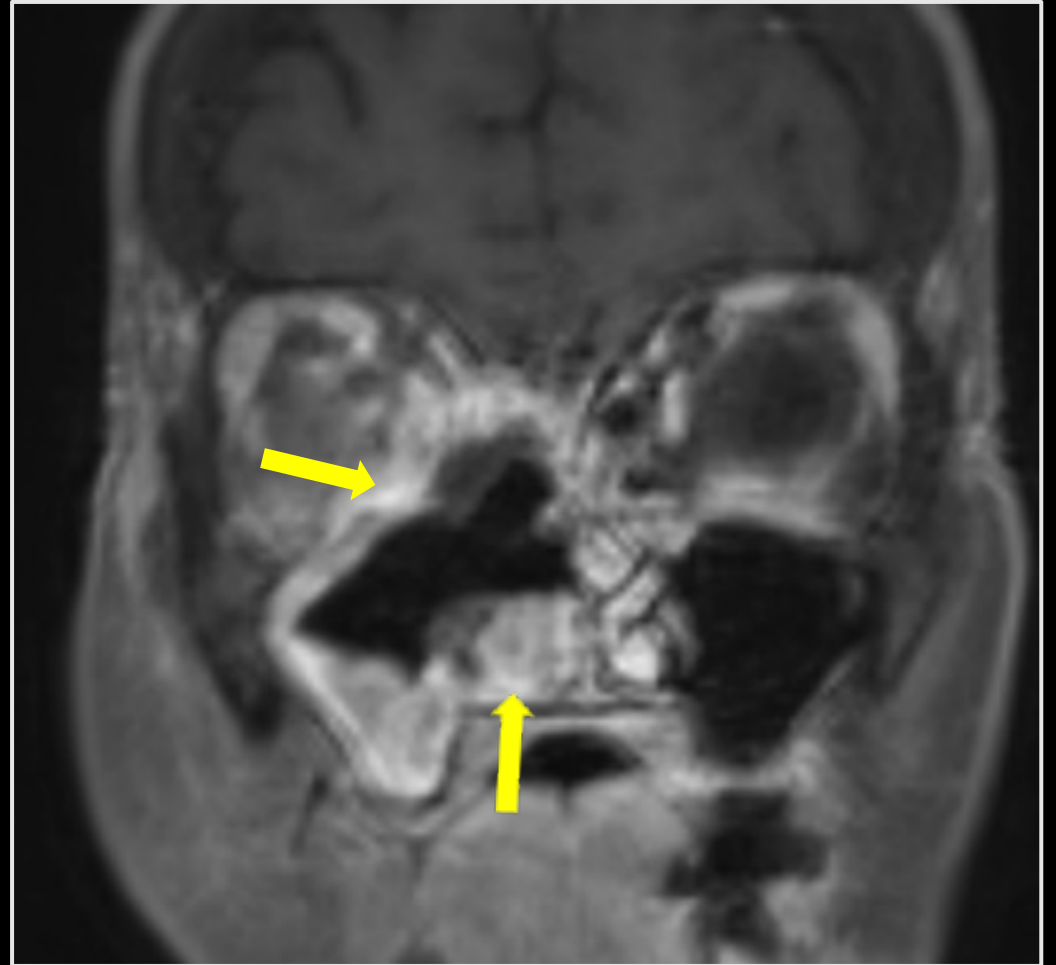
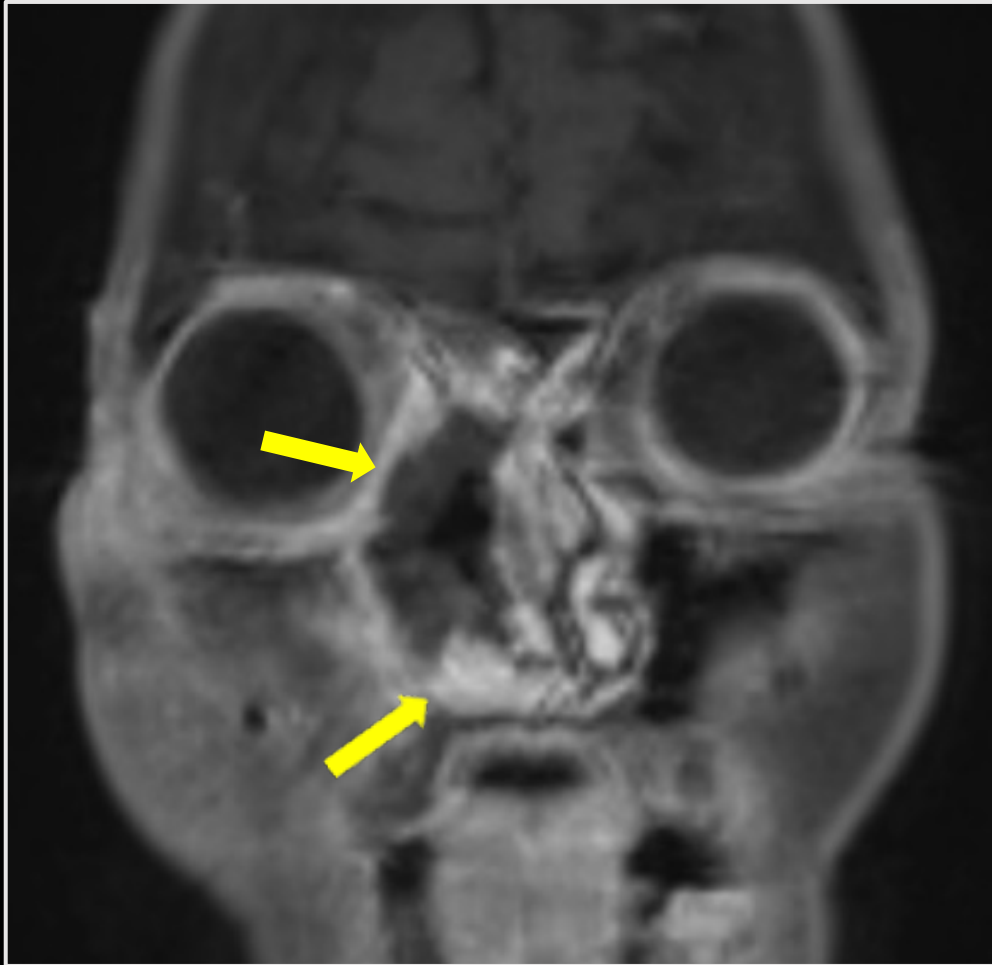
Mayo Clinic - Jacksonville

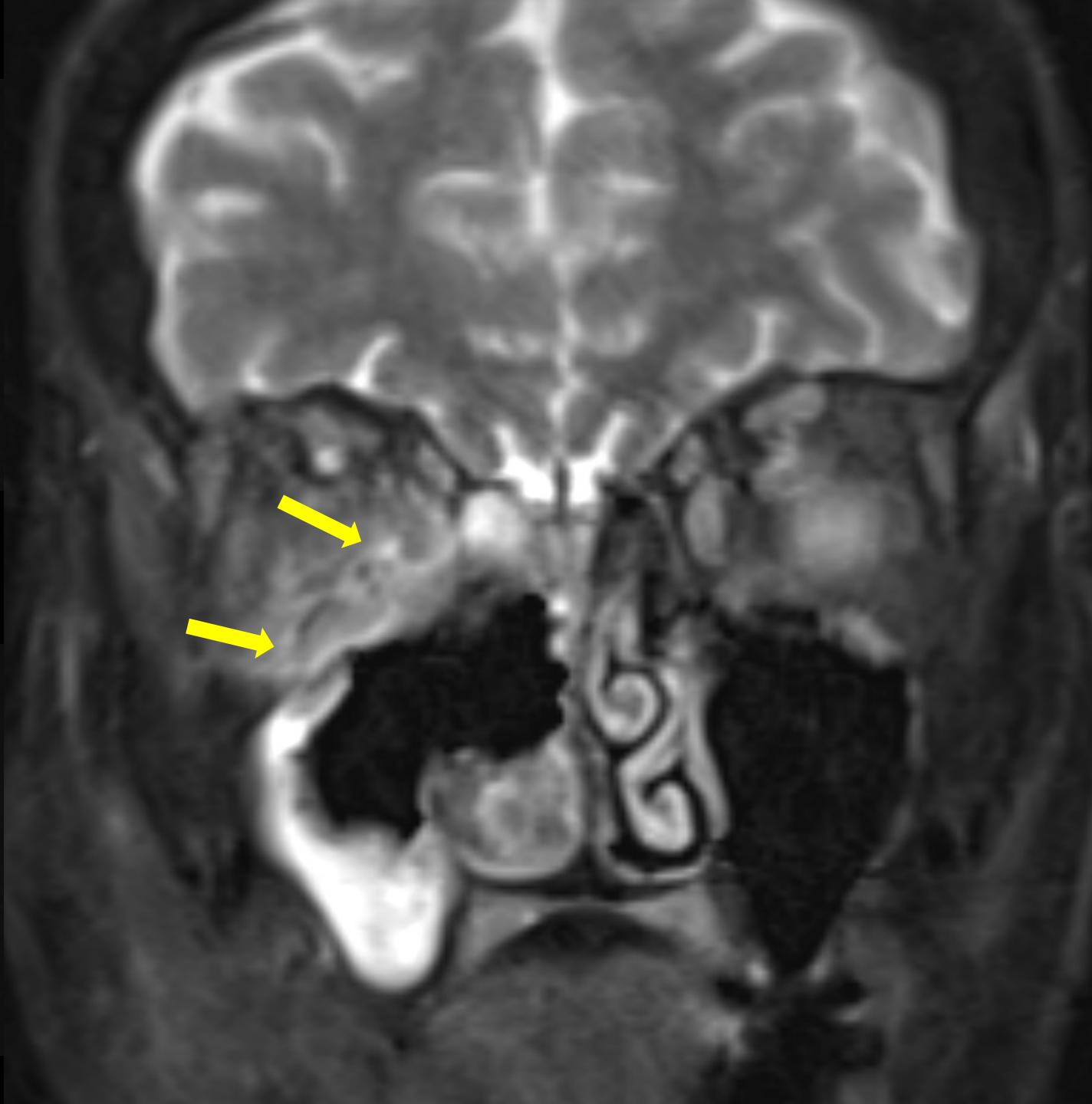
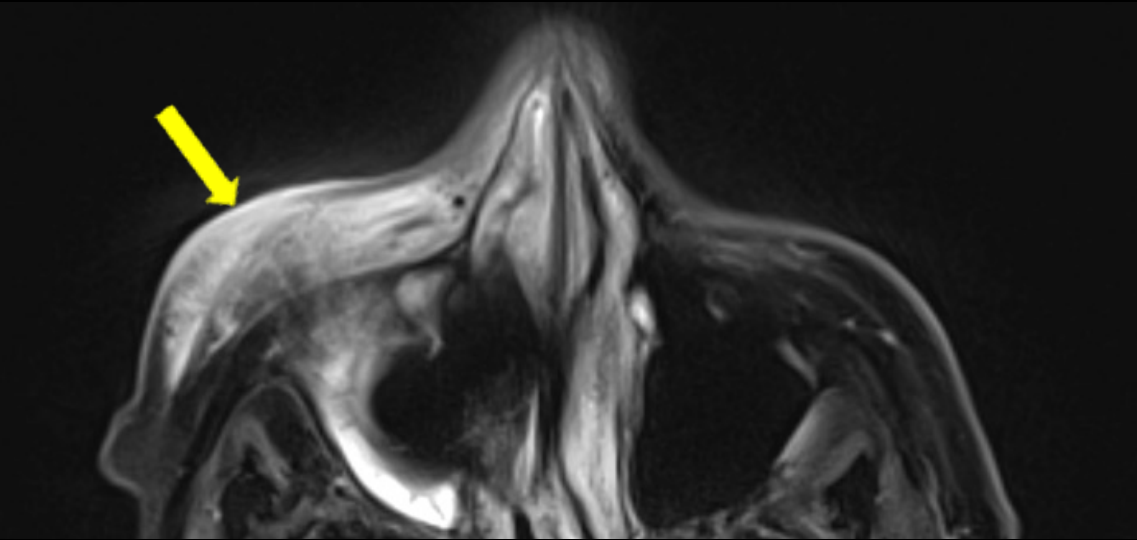
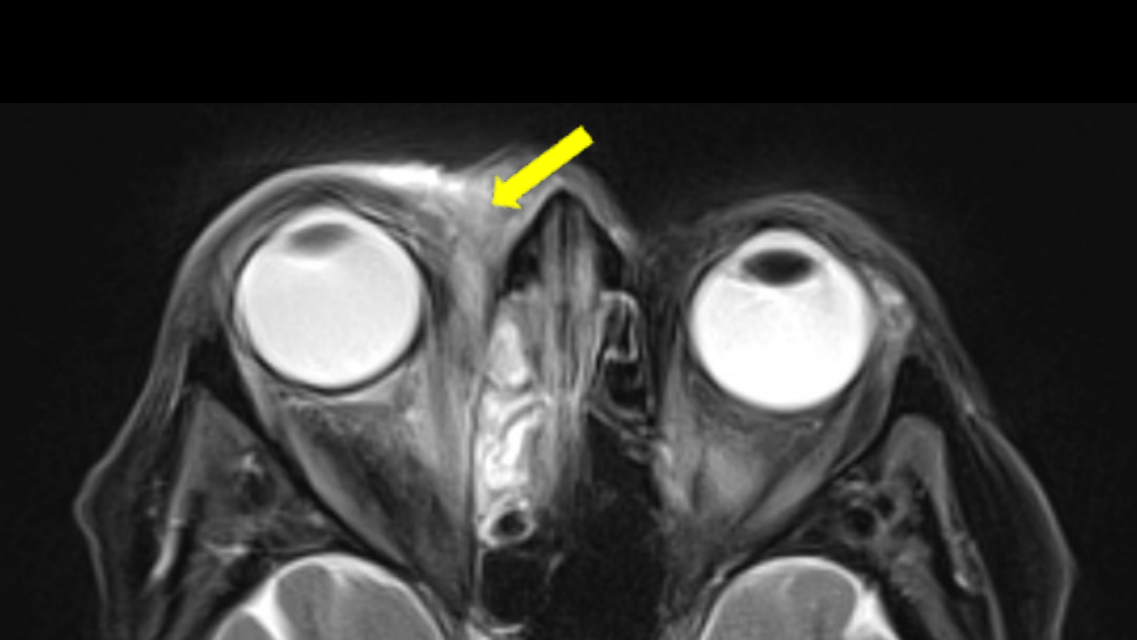


Case Presentation

- 75-year-old female
- Worsening sinus pain after failed courses of antibiotics
- Progressive swelling around the eye
- No significant PMHx or PSHx
- Referred to ENT

Imaging

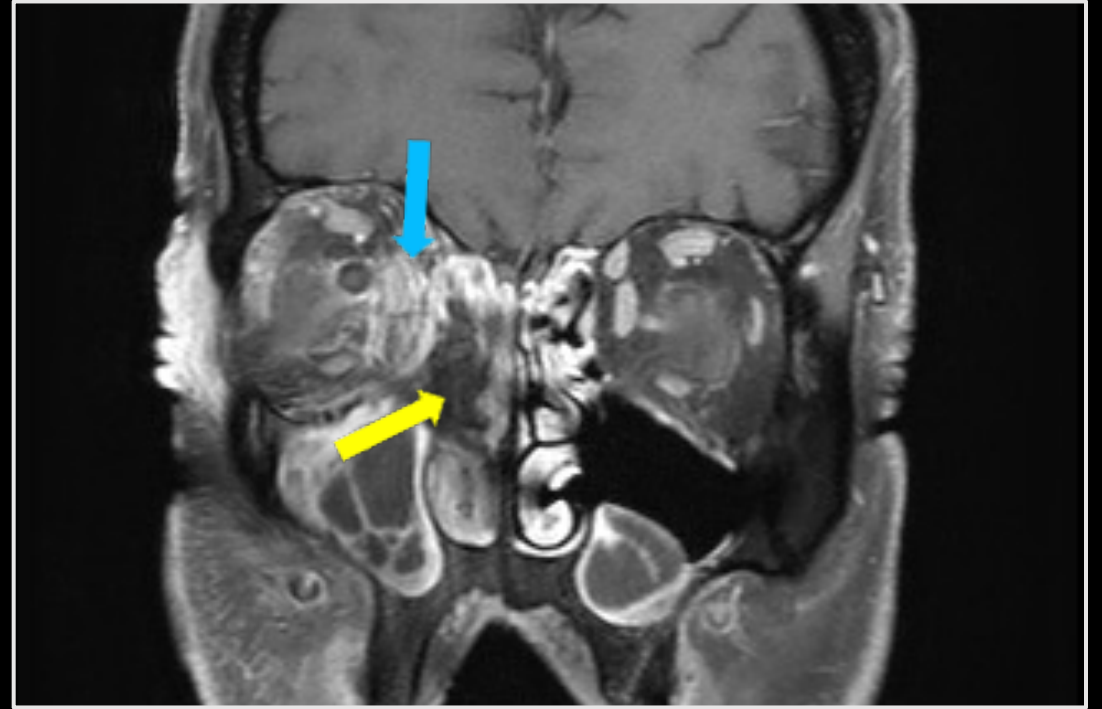
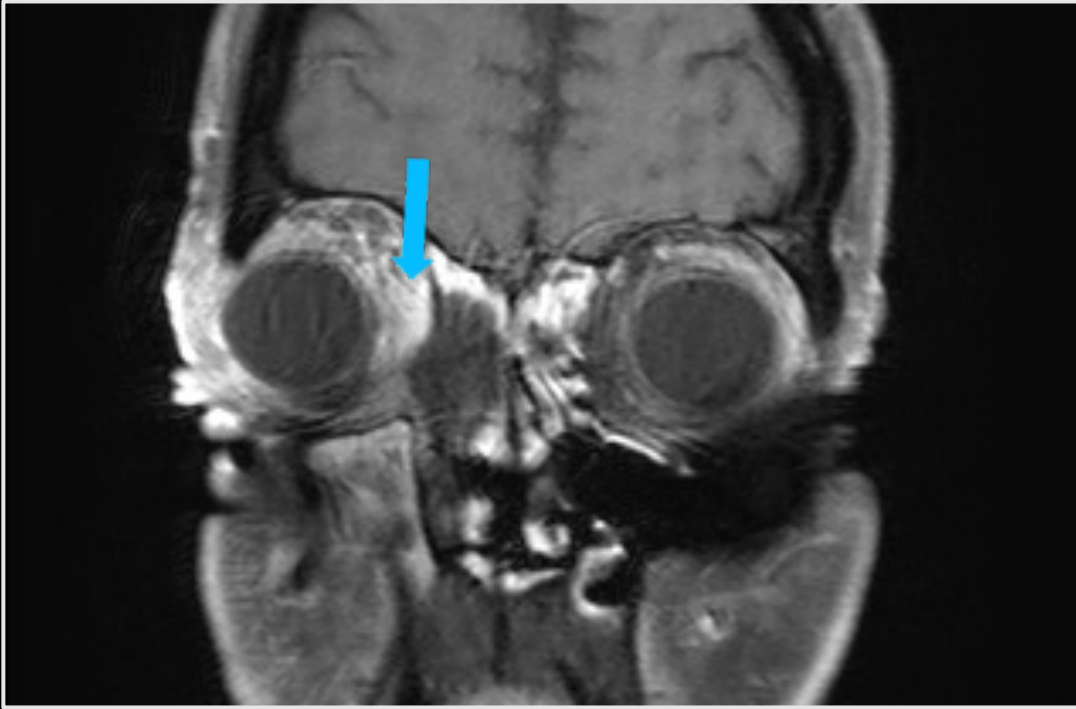




Working Differential Diagnosis

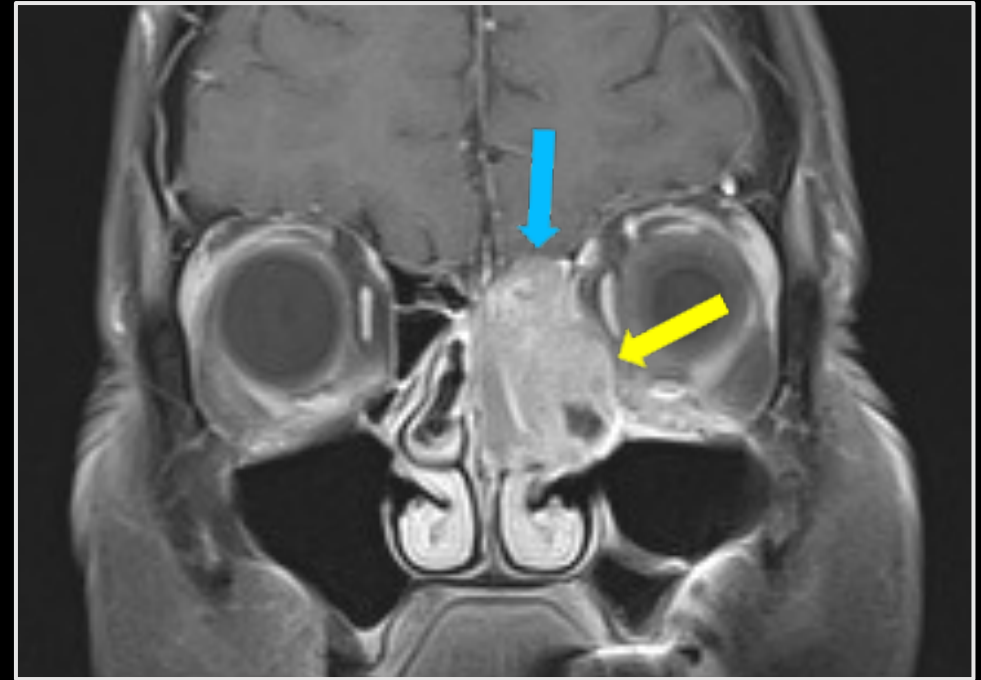
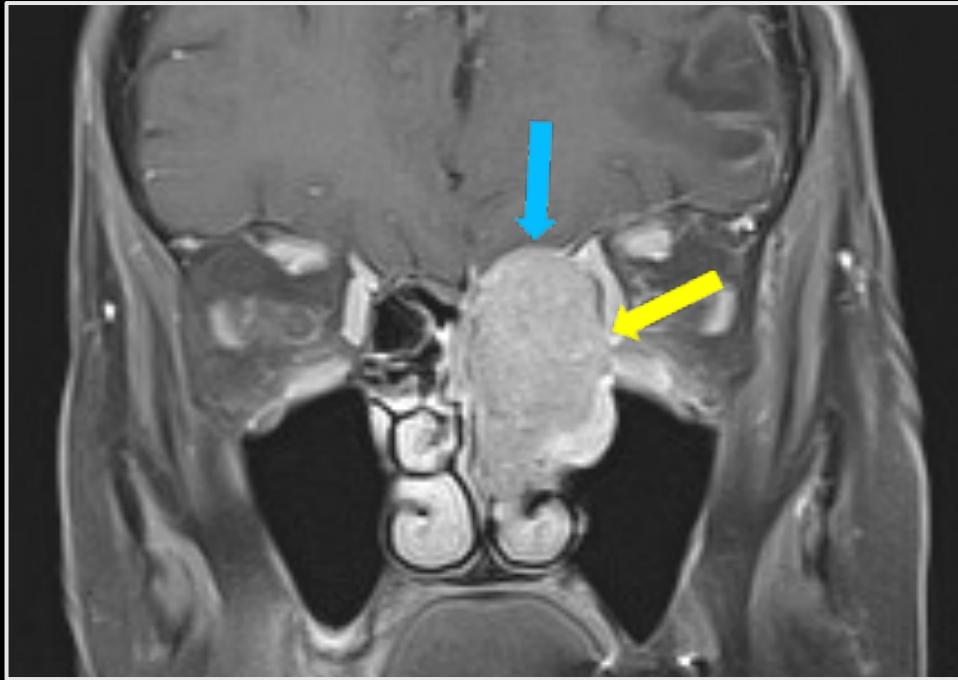
- Invasive Fungal Sinusitis
- Sinonasal Carcinoma
- Granulomatosis with Polyangiitis

DDX- Invasive Fungal Sinusitis



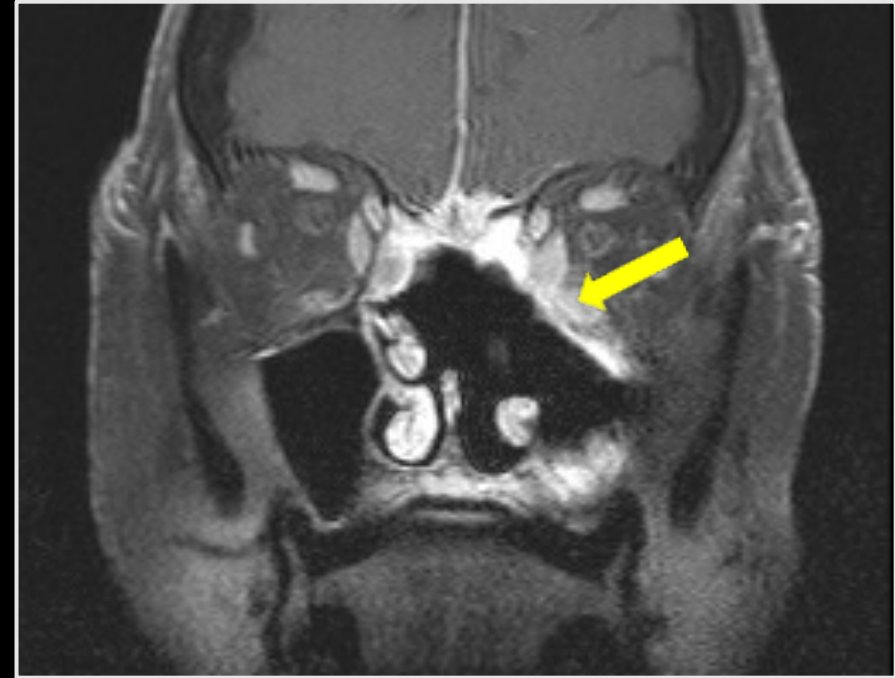
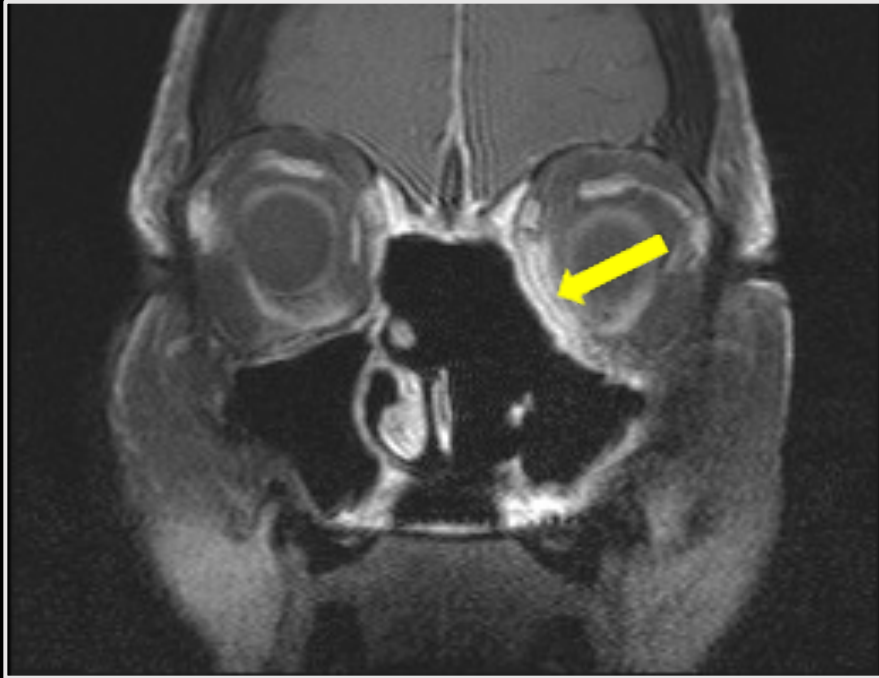
- Immunocompromised patients
- Must look for invasion beyond the sinuses
- Requires aggressive medical and surgical treatment
- **Orbital extension (blue arrow)**
- **Non-enhancing middle turbinate (yellow arrow)**

DDX- Sinonasal Carcinoma



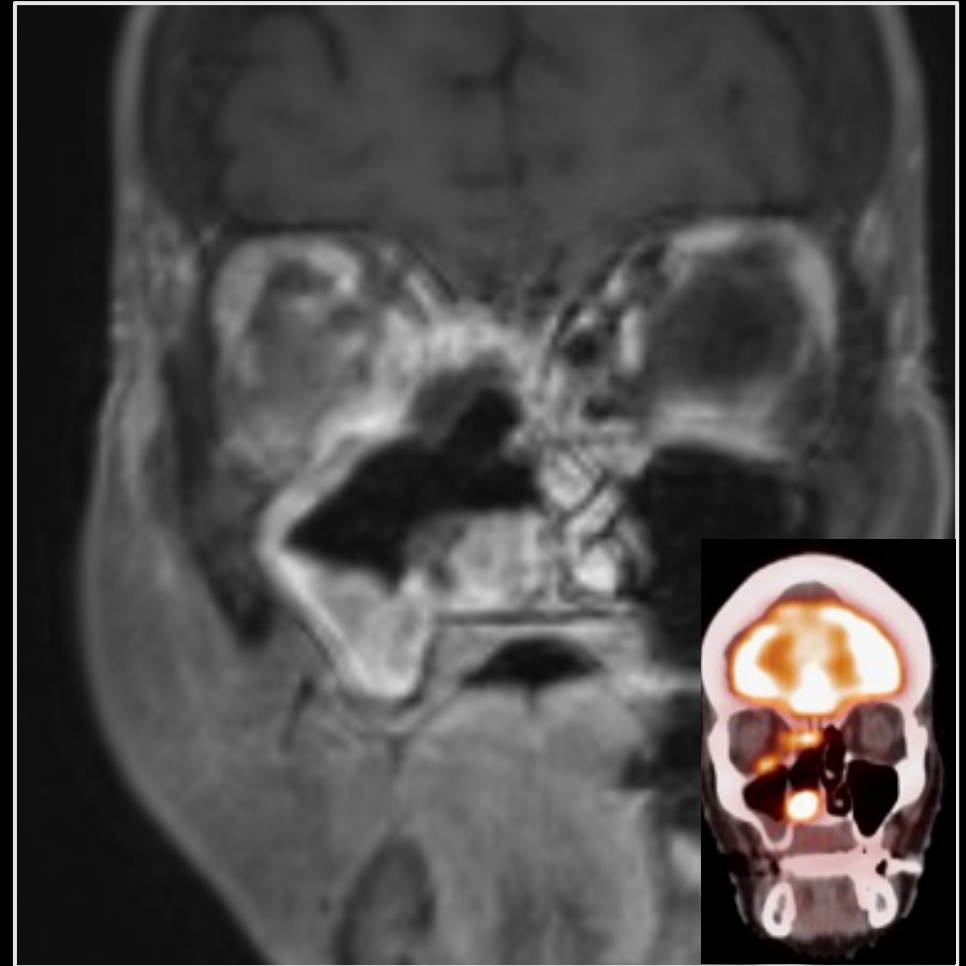
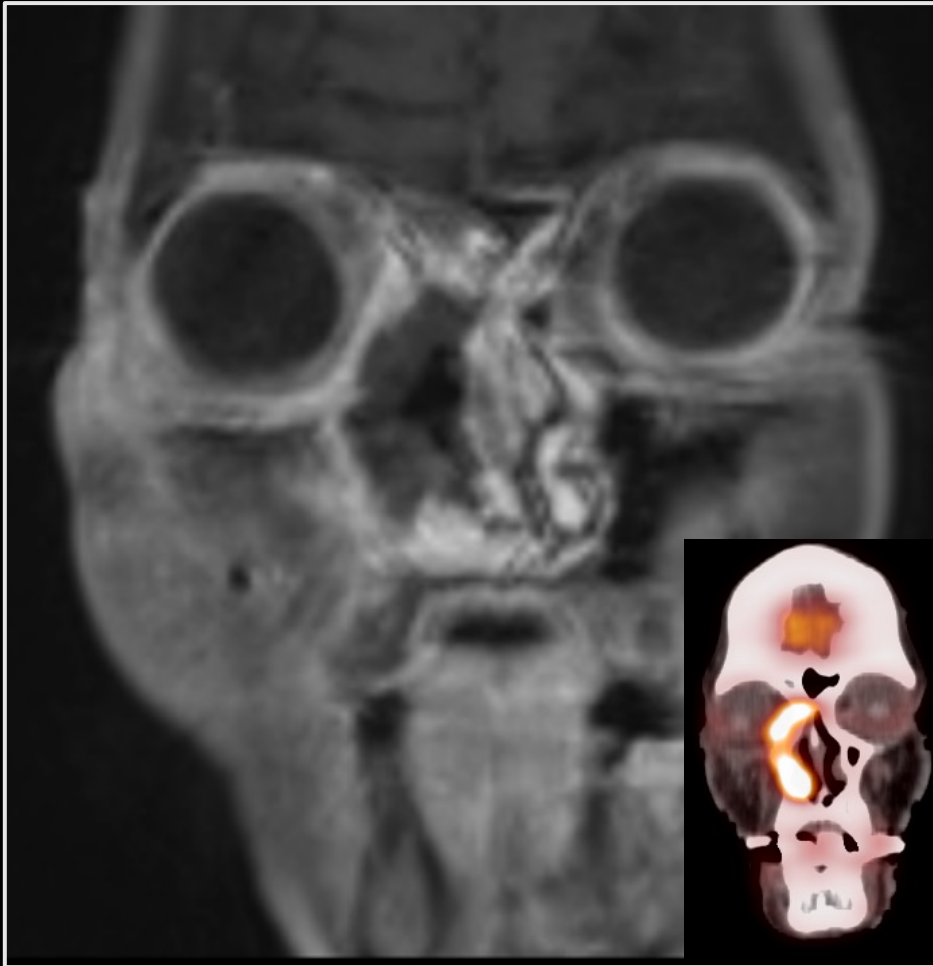
- Squamous cell accounts for majority of sinonasal malignancy
- Commonly causes aggressive bone destruction
- Intracranial extension (blue arrow)
- Orbital extension (yellow arrow)

DDX- Granulomatosis with Polyangiitis



- C-ANCA positive vasculitis
- Avascular necrosis - inflammatory cell infiltrate occludes small arteries
- Large single sinus appearance
- **Enhancement within the orbit (yellow arrows)**

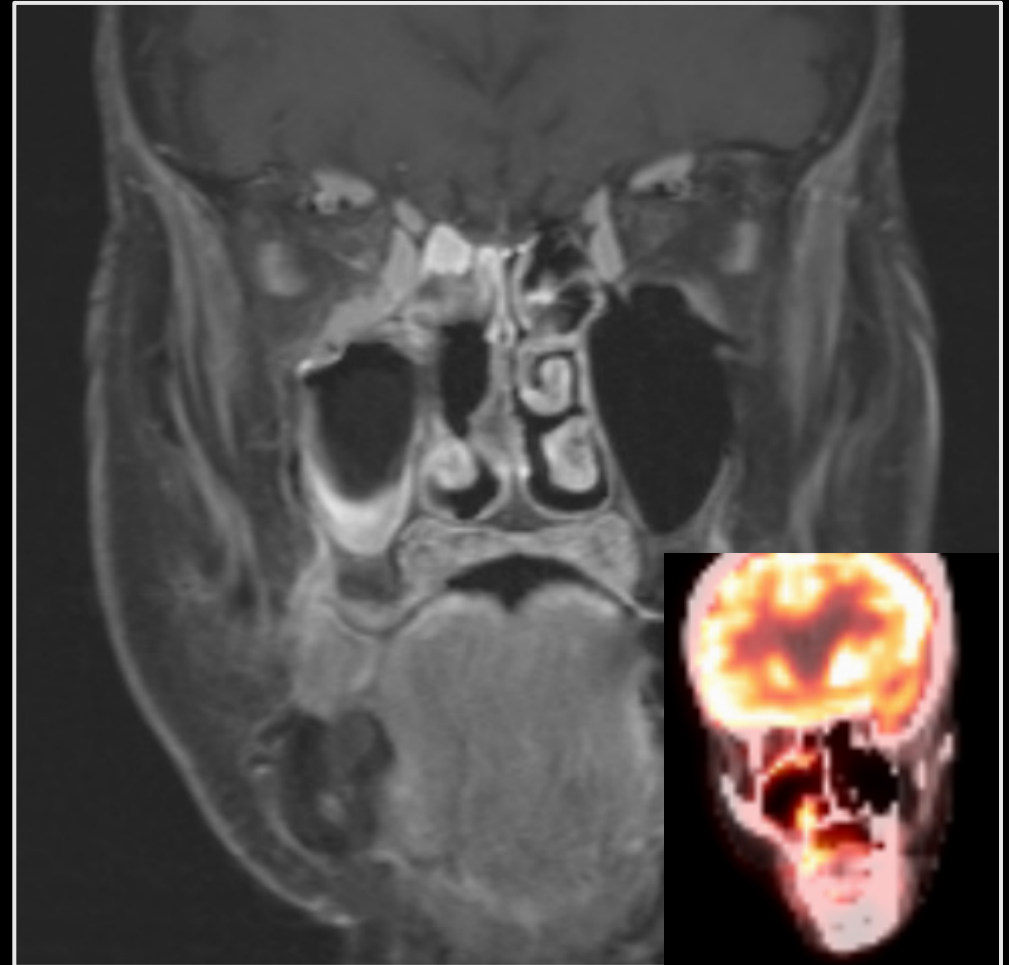
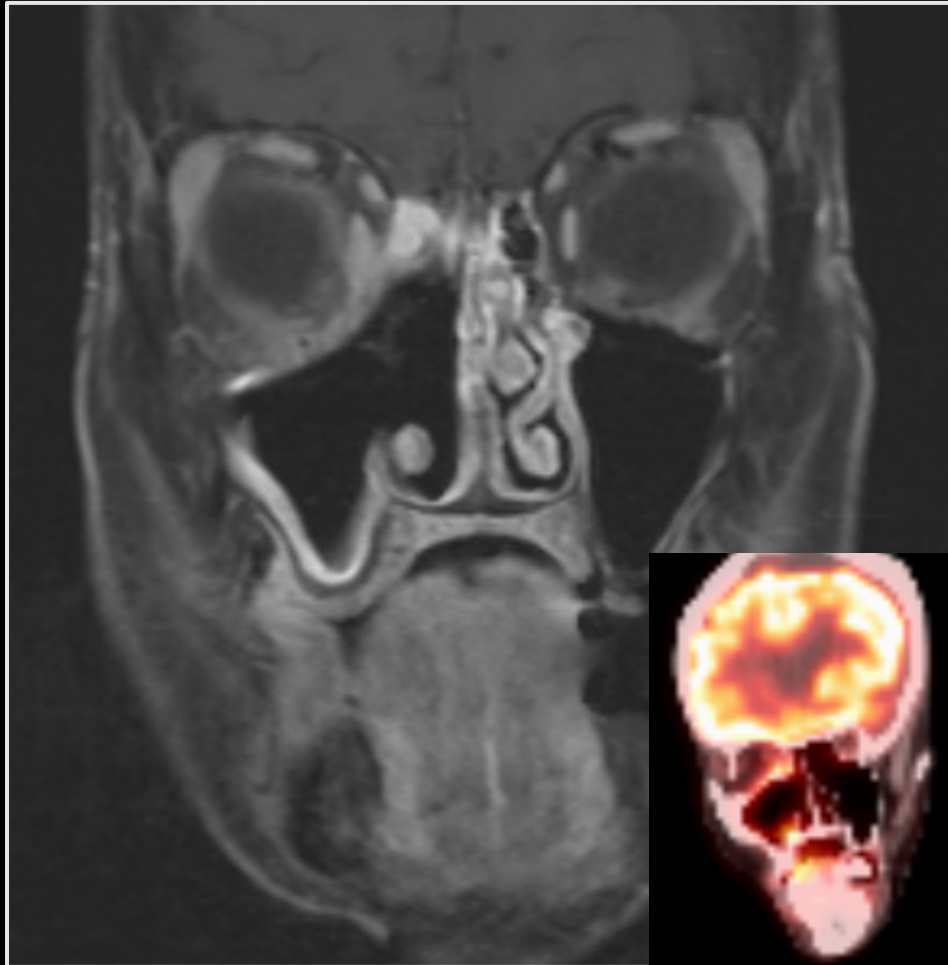
Index Case – PET Scan



Diagnosis: NK/T-Cell Sinonasal Lymphoma

- Aggressive subtype of NHL with poor prognosis accounting for approximately 20% of sinonasal lymphoma
- Often misdiagnosed as an inflammatory sinus disease
- Highest incidence in Asia, Mexico, and Central and South America
- Pathogenesis associated to EBV infection, genetic abnormalities, and tumor microenvironment
- Invasion of vascular walls by neoplastic cells and extensive necrosis are important histologic features

Treatment – Chemotherapy + Radiation



Teaching Points

- Important to evaluate patient medical history and duration of time since symptom onset to help narrow differential diagnosis
- If pt is immunocompetent, etiologies other than acute invasive fungal sinusitis should be considered
- Sinonasal NK/T-cell lymphoma must be on the differential for imaging findings of aggressive sinus disease

References

- [The diagnosis of sinonasal lymphoma: a challenge for rhinologists | SpringerLink](#)
- [Extranodal NK/T-cell lymphoma, nasal type \(angiocentric T-cell lymphoma\): A review about the terminology - PMC \(nih.gov\)](#)
- [Characteristics of Extranodal NK/T-Cell Lymphoma, Nasal Type, Compared with Nasal Diffuse Large B-cell Lymphoma - PMC \(nih.gov\)](#)
- [Life | Free Full-Text | The Pathologic and Genetic Characteristics of Extranodal NK/T-Cell Lymphoma \(mdpi.com\)](#)
- [JCM | Free Full-Text | Imaging Characteristics of Malignant Sinonasal Tumors \(mdpi.com\)](#)