Abstract: A unique case report of a massive squamous cell carcinoma invading the right orbit, maxillary sinus, ethmoid sinus and nasal cavity with intracranial extension will be presented and discussed.

I. Case History
Patient demographics: A 60 year old Caucasian male presents with a 2-3 month history of blurred vision OD, binocular diplopia, and a large painful right facial mass that he describes as “blocking” his vision. He expresses interest in having the large mass drained.

Ocular History: started wearing glasses in his 20’s, otherwise unremarkable
Ocular Meds: none
Systemic Hx: new patient to the VA, patient reports in good health despite recent unintentional weight loss of 30lbs over 3 months
Medications: ASA 325mg PO QD, Percocet, Prochlorperazine 10mg PO TID

II. Pertinent Findings
Visual acuity: 20/200 OD, 20/50 OS; unable to refract OD, BCVA 20/25 OS
Externals: Large protruding mass to the right upper lid, temporal and frontal regions Significant inferior and nasal displacement of the globe and exophthalmos OD
EOM: Severe restriction in all gazes OD, diplopia in all gazes
Normal IOP OU
Slit lamp shows mildly injected conjunctiva OD and inferior SPK OD, normal OS
Fundus exam: (+) prominent choroidal folds OD
(-) disc edema OU
(+ ) few flame shaped hemorrhages in periphery OD, clear OS
(+ ) tortuous vessels OD, normal vasculature OS

Additional Tests
Humphrey visual field shows a dense generalized depression OD, few scattered depressions OS
OCT shows normal NFL thickness in all quadrants OU

Lab Studies
CBC shows anemia, low lymphocytes and slightly high neutrophil count
Plasma shows low sodium levels

Neuro-images: CT with & without contrast
Large mass in the right facial region involving the right nasal cavity, right orbit and extending intracranially on the right. The mass is also present extracranially and in the right para-orbital region.

Additional neuro-images: MRI of the orbit with & without contrast
Heterogeneously enhancing lesion with central necrosis or fluid, extending from the right nasal cavity through the ethmoid cells, right maxillary sinus, right frontal sinus, and right orbit into the right anterior and middle cranial fossa, right temporal fossa and right temporal subcutaneous soft tissues, with extensive osseous destruction.

Surgical biopsy: squamous cell carcinoma

III. Differential Diagnosis
The differential includes an invasive neoplasm such as a sarcoma, squamous cell carcinoma, lymphoma, metastatic disease, a primary or secondary osseous lesion and infection such as invasive aspergillosis.
IV. Diagnosis:
Squamous cell carcinoma invading the right lid and orbit causing diplopia, globe displacement and compression of the right optic nerve with subsequent decrease in vision OD.

Discussion:
Squamous cell carcinoma (SCC) is a malignant tumor of the squamous epithelium and the second most common form of skin cancer.\(^4\) It can occur in many different organs including the lungs, conjunctiva, nasal cavity, mouth, lips and skin. SCC can be “in-situ” meaning it has not broken through the basement membrane or it can be invasive where it has invaded the underlying tissue. The human papilloma virus has been associated with SCC along with exposure to nickel dust, mustard gas, isopropyl oil, chromium, or dichlorodiethyl sulfide, many of which are found in the furniture-making, leather, and textile industries.\(^1,4\)

SCC accounts for over 80% of all malignancies that arise in the nasal cavity and paranasal sinuses.\(^1\) The presentation can vary depending on the involved organs but SCC originating in the nasal cavity may include a nasal mass or obstruction, rhinorrhea, epistaxis or pain; all of which were symptoms our patient experienced. Long-standing lesions, as in the case of our patient, can alter the patient's facial features causing asymmetry or proptosis of the globe. Diagnosis is made via biopsy.

V. Treatment
As in all tumors, tissue type and early diagnosis is critical to the success of treatment. Treatment is on-going but includes radiation and in very aggressive or long-standing cases of SCC, as in our patient, orbital extention is indicated. Depth of infiltration is predictive of prognosis. The average survival rates for patients with maxillary sinus SCC average about 40% over 5 years.\(^1\) Early-stage tumors have a cure rate of up to 80%.\(^1\) Unfortunately, the prognosis for this case remains guarded to poor.

VI. Conclusion
SCC is an aggressive and life-threatening condition. Although our patient's tumor was exceedingly large and had invaded multiple sinuses, SCC can present more subtly and involve only the lid, conjunctiva or orbit. Eye care practitioners must be aware of the various ocular manifestations as squamous cell carcinoma, although rare, is the most common conjunctival malignancy.\(^2\) Timely referral is critical for successful treatment.

References: