

Unilateral Nasal Congestion and Headache: Renal Cell Carcinoma Metastasis to the Sinuses



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A 55-year-old woman with a history of hypertension was referred to the allergy clinic for evaluation of new onset headache, nasal congestion, and nosebleeds over the past 6 weeks. She described persistent right-sided nasal congestion, painful burning sensation in the nose, occasional sneezing, and pruritic eyes. Her headaches occurred daily and localized to the lateral and superior aspects of her head. Her symptoms were refractory to intranasal steroids, ipratropium, and nasal saline rinses. The patient had never been treated with oral steroids or antibiotics. Her environmental aeroallergen blood panel was negative. She had a normal rhinolaryngoscopy examination performed 2 weeks before presentation to the allergy clinic.

On examination, the patient had right-sided septal deviation with pink healthy appearing nasal turbinates. She was initially treated on azelastine nasal sprays, but she continued to have nasal pain. Therefore, a computed tomography (CT) sinus was obtained (Figure 1) that showed a large hyperdense mass within the sphenoid sinus and posterior nasal cavity, eroding into the right upper clivus, anterior skull base and cranial fossa, with destruction of the right ethmoid septae and right posterior middle turbinate, and early extension into the medial aspect of the right orbit. Follow-up magnetic resonance imaging (MRI) (Figure 2) confirmed a heterogeneous signal mass within the same region. At this point the patient had also developed partial right third and sixth cranial nerve palsy with decreased right eye visual acuity.

She underwent an endoscopic biopsy of the nasal sinus mass, which revealed metastatic renal cell carcinoma (RCC). Metastatic workup showed a right renal mass with further metastasis to T11 vertebral body. She received preoperative embolization before extended endoscopic endonasal debulking of the skull base

tumor, which she tolerated well. The patient was started on pazopanib and radiation therapy.

RCC is rare and accounts for 2% of all adult malignancies.¹ RCC is most often diagnosed during fifth to sixth decade of life.^{2,3} Metastasis to the head and neck occurs in approximately 15% of patients, and frequently affects the nasal cavity.^{4,5} The most common symptoms for patients with metastatic RCC to sinonasal cavity are epistaxis, nasal congestion, facial pain, and vision change.^{5,6} There have only been a few reported cases of nasal metastases as the presenting sign of RCC.^{7,8}

Rhinosinusitis and nasal tumors can have similar clinical presentations; thus it is critical to differentiate between them. Although malignant tumors of the sinuses are extremely rare, it is imperative to evaluate symptoms further when a patient is not improving on standard therapy for rhinosinusitis. Persistent unilateral nasal obstruction is suggestive of an abnormal growth such as mass, nasal polyp, or septal deviation.⁹ Recurrent epistaxis is often a red flag as it may signify a highly vascular structure, such as angiofibroma, adenocarcinoma, melanoma, or metastatic tumor from breast, lungs, or kidneys.⁸ Headaches in addition to eye complaints prompt a full neurological examination.¹⁰ For any patient with atypical facial or sinus pain, further workup with CT or MRI imaging is indicated to evaluate sinus disease and assess for sinonasal lesions.¹¹

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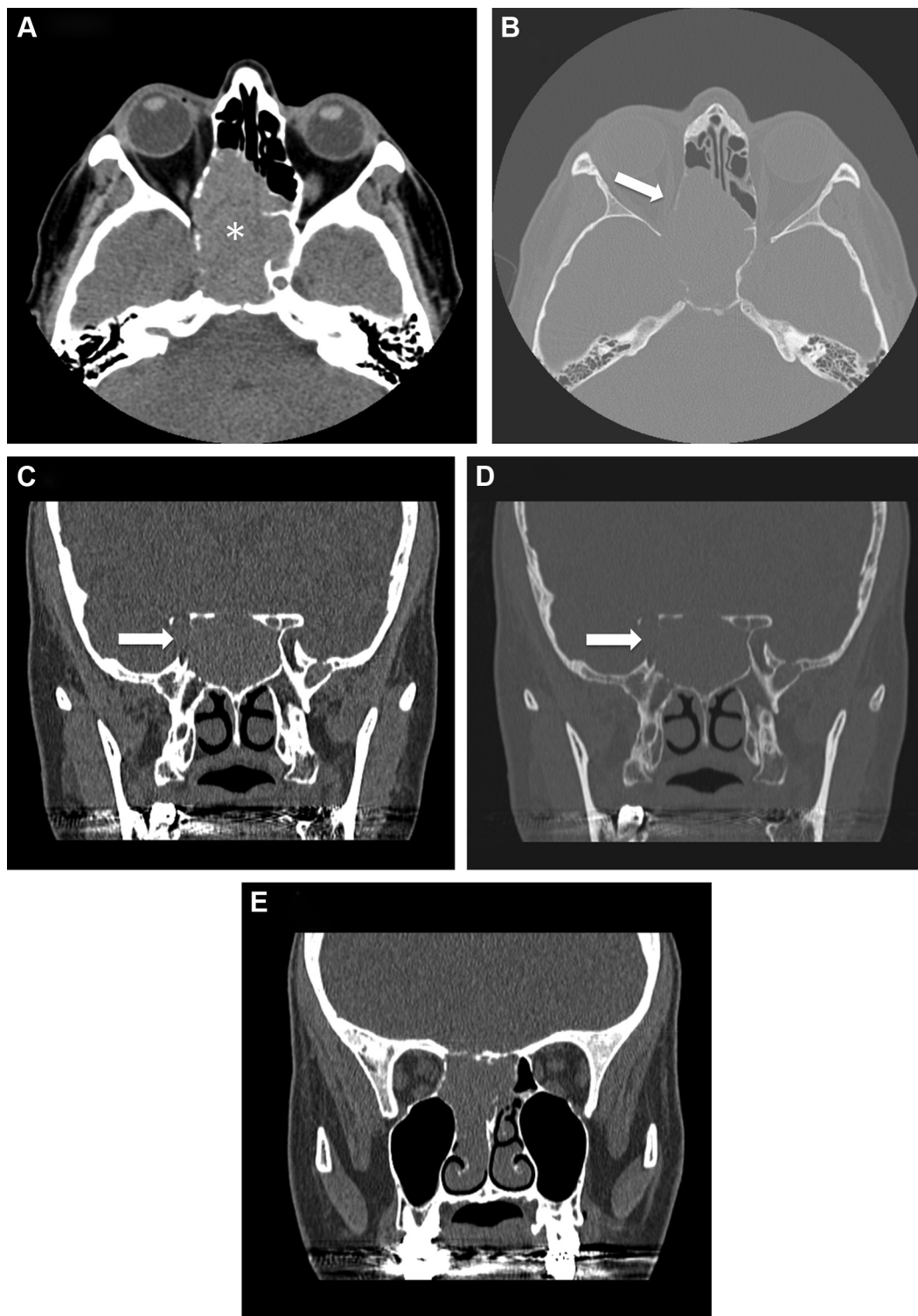


FIGURE 1. Computed tomography sinus without contrast. **A**, Soft tissue window; **B**, bone window: axial view showing mass (*) in the sphenoid sinus and posterior nasal cavity measured $4 \times 6 \times 3.5$ cm in size with bony erosion of the ethmoid sinus and bony remodeling of the medial orbital wall (white arrow). **C**, Soft tissue window; **D**, bone window: coronal view redemonstrating mass completely filling and expanding the sphenoid sinus with bony erosion of the lateral wall of the sphenoid sinus (white arrow). **E**, Soft tissue window: coronal view with bony destruction of the ethmoid septae and involvement of the middle turbinate.

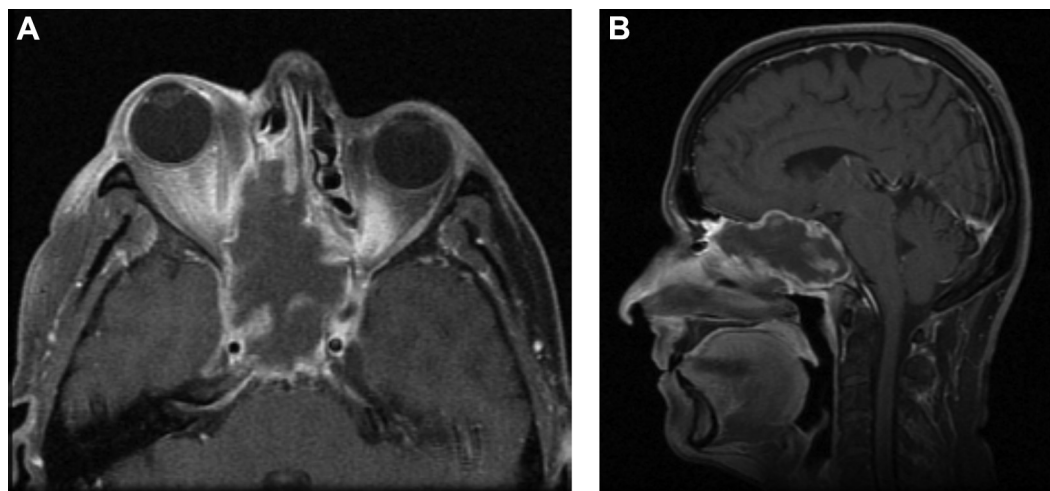


FIGURE 2. Magnetic resonance imaging face with orbits (T1 with contrast). **A, B,** Eight-day progression of mass invasion with involvement of the right orbit and elevation and posterior displacement of the pituitary gland.

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