Sinonasal Osteoblastoma and Postoperative Hemorrhage, a Preventable Complication of Functional Endoscopic Sinus Surgery

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INTRODUCTION

Originally described by Jaffe and Myers, Osteoblastomas are very rare, benign bone forming tumors which have a 3:1 predilection for males and affect the long bones and vertebra in 40-50% of the cases. These benign tumors primarily affect individuals between the ages of 10-30, account for 1% of all bony tumors, and 3% of benign bone lesions.

Histologically, osteoblastomas are described by a proliferation of osteoblasts in an osteoid matrix and bony trabeculae with osteoblastic rimming giving them the synonym of giant osteoid osteoma. Distinguishing characteristics of osteoblastomas from osteoid osteomas include size greater than 2 cm in diameter, increased vascularity, a greater production of osteoid, a less organized boney and osteoid matrix, and the absence of night pain found with osteoid osteomas.

Radiographically, osteoblastomas have variable findings with no one distinguishing characteristics. However, they often have similar radiographic findings to an osteoid osteoma with a radiolucent nidus and a sclerotic exterior. Osteoblastomas of the head and neck region are extremely rare, and usually affect the mandible.

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CASE

We report an unusual case of a 63 year old veteran with a history of Samter's triad and six previous endoscopic sinus surgeries for sinusitis who presented to clinic with a six month history of nasal obstruction. He reported that six months prior to presentation he had expelled a calcified mass from his left nasal cavity upon sneezing. He denied any epistaxis, nasal discharge, pain, or visual changes.

He was worked up with a CT of the sinuses (figure 2) which revealed a 3.0x0.9x1.6 cm calcified mass in the left superior nasal cavity, pan sinusitis, and left to right septal deviation. At this point, the patient was scheduled for endoscopic sinus surgery, frontal sinus exploration, and removal of the calcified mass.

The patient was taken to the operating room and we proceeded to use various scissors, rongeurs, suction device, and a cutting bur to remove the medial portion of the mass which revealed that the mass was originating from the middle turbinate. The bilateral frontal exploration and cleanout proceeded as planned. Sinu-Sept and Doyle nasal tampons were placed in the bilateral nasal cavities. The case was complicated by the loss of the anterior portion of the inferior turbinate, and malfunctioning equipment which prevented removal of the remaining mass (figure 3).

With microscopic features of osteoblastoma (figure 1) and size of greater than 2cm, the diagnosis of osteoblastoma was made.

On post operative day 12, the patient presented to clinic following self removal of the packing with epistaxis. He was admitted to the hospital and discharged three days later with an anterior nasal packing. He represented to clinic on post operative day 17. At which point, interventional radiology was consulted for evaluation and eventual embolization (figure 4) of the sphenopalatine and greater descending palatine arteries. This contained the epistaxis, and the patient was discharged.

Nine months post operation, he is currently without any nasal obstruction, discharge, or any evidence of local invasion. He is currently being scheduled for removal of the remaining osteoblastoma.

DISCUSSION

Osteoblastomas are benign tumors rarely occurring in the head and neck region usually affecting the mandible. Osteoblastomas are extremely vascular tumors, and when found in the sinonasal region preoperative embolization should be considered, and complete removal of the mass ensured to prevent intra-operative and post-operative hemorrhage.

Further research may reveal an association between Samter's triad and osteoblastoma of the sinonasal region.

While osteoblastomas are benign they are locally invasive and have a <1% rate of malignant transformation so removal is of utmost importance.

REFERENCES