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Lisa Marie Sheppard

Samuel A. Mickelson

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Hemangiomas of the Nasal Septum and Paranasal Sinuses

Lisa Marie Sheppard, MD,* and Samuel A. Mickelson, MD†

Hemangiomas of the nasal septum and paranasal sinuses are rare; only 62 cases of septal hemangiomas and 32 cases of maxillary sinus/maxilla hemangiomas have been reported in the English literature. Hemangiomas should be considered in the differential diagnosis of any nasal mass lesion because biopsy may result in profuse bleeding and even death. We report the clinical presentation, differential diagnosis, etiology, and histologic appearance of paranasal sinus hemangiomas occurring in four of our patients. (Henry Ford Hosp Med J 1990;38:25-7)

Hemangiomas are common lesions of the head and neck and are the most prevalent benign tumor in infants and children (1). However, hemangiomas of the nose and paranasal sinuses are rare. A review of the English literature reveals only 62 reported cases of nasal septal hemangiomas (2-8) and 32 cases of maxillary sinus and maxilla hemangiomas (7,9-13). Although hemangiomas are rare in these sites, they must be considered in the differential diagnosis of nasal mass lesions because biopsy may result in profuse bleeding and even death (13-15). We present four cases of nasal and sinus hemangiomas recently encountered.

Case Reports

Case 1

A 15-year-old girl presented with a four-week history of a right-sided nasal mass and intermittent epistaxis. Examination revealed a pink, pedunculated 1.5 cm lesion attached to the right nasal septum by a thin stalk. Excisional biopsy was performed under local anesthesia with intravenous sedation, and histologic examination revealed a hemangioma. Two months later a recurrent lesion was excised with margins of normal tissue. No further recurrence has been demonstrated.

Case 2

A 49-year-old man complained of intermittent epistaxis with partial right nasal obstruction for about one and a half years. A septoplasty had been performed four years previously. Examination revealed a 1 cm erythematous, hemorrhagic, pedunculated mass attached to the right anterior nasal septum. Excisional biopsy was performed in the clinic with local anesthesia. A cuff of normal mucosa was also excised and the base cauterized with silver nitrate. Histologic examination revealed a hemangioma. The lesion has not recurred.

Case 3

A 76-year-old woman had experienced intermittent epistaxis and right nasal obstruction for a period of nine weeks. A 2 cm pedunculated, hemorrhagic mass on a wide base was found attached to the right anterior septum. Surgical excision was performed with removal of a cuff of normal septal mucosa and electrocautery of the base. A polypoid hemangioma was identified by histologic examination (Fig 1), and no recurrence was noted four months later.

Case 4

A 56-year-old man had undergone in 1980 an intranasal ethmoidectomy and Caldwell-Luc procedure with nasal antral windows for excision of a hemangioma of the right middle turbinate. At that time the maxillary and ethmoid sinuses were both observed to be free of the tumor. However, in 1988 he returned for evaluation of repeated profuse right-sided epistaxis. A 2 cm lobulated erythematous lesion associated with the anterior aspect of the right middle turbinate was found extending into the middle meatus but not into the nasopharynx. Computed tomography (CT) disclosed a tumor nearly filling the right maxillary and ethmoid sinuses, abutting the lamina papyracea (Fig 2). The mass, which was surrounded by a bony wall, enhanced radiographically after injection of contrast medium. In light of the history of a nasal hemangioma and the recurrent profuse epistaxis, angiography was performed. The mass was shown to be less vascular than expected and small feeding vessels off the internal maxillary artery could be embolized angiographically. Surgical excision was performed subsequently through a Weber-Fergusson incision with completion of a right medial maxillectomy and external ethmoidectomy. The bony wall which surrounded the mass appeared to be the expanded bone of the lateral nasal wall. Histologic examination revealed a cavernous hemangioma. The patient did well postoperatively and there has been no recurrence in one and a half years.

Discussion

Patients with a septal hemangioma will usually present with unilateral epistaxis and nasal obstruction of several months duration. Septal hemangiomas most commonly occur as polypoid or sessile masses and usually can be diagnosed by clinical examination. They range in size from several millimeters to two centimeters in diameter (3), arise most commonly from the anterior nasal septum in Little's area, and are bluish red in appearance.

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*Formerly Department of Otolaryngology, Henry Ford Hospital. Currently Department of Radiology, Beth Israel Hospital, Newark, NJ.

†Department of Otolaryngology, Henry Ford Hospital.

Address correspondence to Dr. Mickelson, Department of Otolaryngology, Henry Ford Hospital, 2799 W Grand Blvd, Detroit, MI 48202.

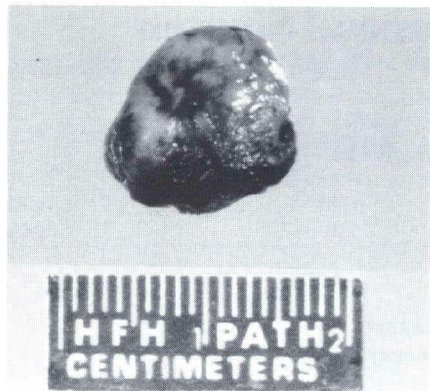


Fig 1—Case 3: Surgical specimen of a septal hemangioma.

Patients with maxillary sinus/maxilla hemangiomas may present with a facial mass, anesthesia or paresthesia, rhinitis, sinusitis, proptosis, diplopia, oroantral fistula, loose teeth, gingival bleeding, pain, epistaxis, or a pulsatile lesion (9). Occurrence of gingival bleeding and epistaxis should suggest the possibility of a hemangioma or other vascular lesion. However, these are not always the presenting symptoms and cases of profuse bleeding and inadvertent fatal biopsy have been reported (14,15). In case 4, frequent and profuse epistaxis with the history of previous hemangioma made us suspect a recurrent vascular tumor of the right maxillary sinus.

Histopathologically, benign vascular tumors of the nasal cavity include capillary hemangioma, angiofibroma, cavernous hemangioma, venous hemangioma, hemangioendothelioma, and angiomatous glomus tumor. Malignant vascular tumors of the paranasal sinuses, which are extremely rare, include hemangiopericytoma and hemangiosarcoma (7).

The diagnosis of maxillary sinus hemangiomas is aided by radiologic studies of the paranasal sinuses. Tomograms and plain films are helpful, but CT and magnetic resonance imaging (MRI) of the sinuses are more useful in delineating the lesions and surrounding bone involvement. On CT with contrast administration, hemangiomas may become enhanced inhomogeneously or may demonstrate early peripheral enhancement with a border of opacification gradually advancing centripetally. Because thrombosed and fibrosed portions of the mass will not enhance, CT cannot exclude hemangioma. Occasional presence of phleboliths may suggest the diagnosis of hemangioma. With MRI, hemangiomas characteristically produce intense T2-weighted images. Areas of low signal intensity may be secondary to fibrosis or phleboliths within the lesion. Serpiginous areas of low signal intensity may represent a feeding or draining vessel (16). If the lesion is found within bone, ^{99m}Tc -labeled phosphate bone scans can be used to demonstrate the vascular supply (17).

Carotid and vertebral angiograms can be used to determine whether the vascular supply is primarily from the external or internal carotid arteries and will demonstrate the presence of collateral vessels. Preoperative embolization of these lesions reduces intraoperative blood loss and permits better exposure for complete resection with fewer complications (18-21). Angiogra-

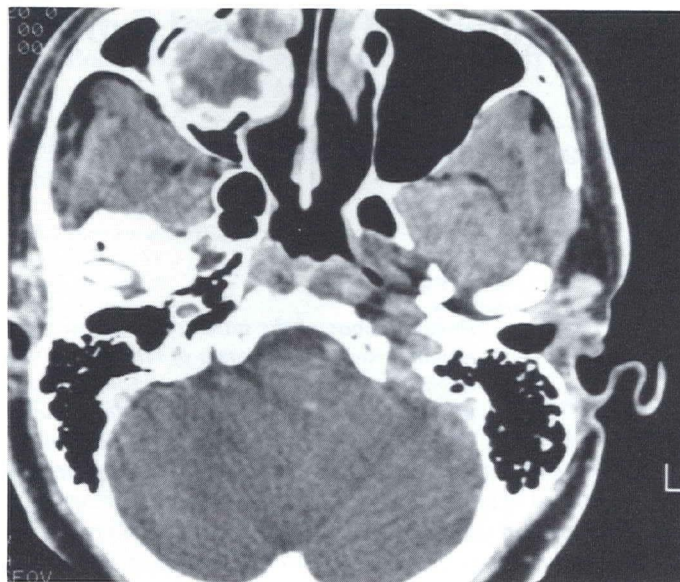


Fig 2—Case 4: Transaxial CT scan of a cavernous hemangioma. A contrast-enhancing soft tissue mass encased in bone is seen in the right maxillary sinus.

phy in case 4 showed a vascular tumor with no large feeding vessels and several of the smaller afferent vessels were embolized.

The best method of treatment for septal hemangiomas is resection of the tumor along with a cuff of uninvolved mucosa and perichondrium. Failure to include the perichondrium is associated with a high rate of recurrence. We believe that the tumor recurred in case 1 for this reason. The high rate of recurrence may be explained by the vascular proliferation extending down to cartilage or bone while maintaining an intact mucosal covering (5,6). Nasal hemangiomas behave clinically as true neoplasms and must be treated as such because of their propensity for local recurrence when excised inadequately.

Our review of the English literature did not reveal a consensus in the treatment of maxillary hemangiomas. As is the case of septal hemangiomas, we believe the treatment of choice of maxillary/maxilla hemangiomas is complete excision after angiography and embolization (11,18,21). In case 4, the patient had a probable recurrence after incomplete excision. The role of the Nd-Yag laser in the treatment of these lesions is not yet established, although its use is an effective method for coagulation and ablation of capillary and small cavernous hemangiomas of the skin and tongue (22).

Hemangiomas have a characteristic histology. Capillary hemangiomas are usually polypoid, pedunculated, nodular masses with smooth surfaces and a lobulated pattern. Microscopically, they consist of masses of dilated, thin-walled vessels that are lined by a single layer of flattened or plump endothelial cells and are surrounded by relatively little stroma (Fig 3). Larger cavernous vessels are often found, and when ulceration is present polymorphonuclear leukocytic infiltration is noted. Confusion may exist between this tumor and angiofibromas when a capillary hemangioma undergoes fibrosis, the prevalent diagnostic feature of angiofibromas. In addition, a capillary

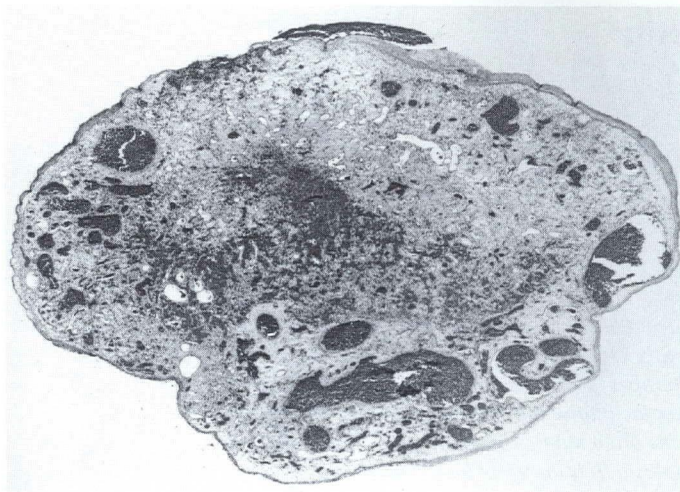


Fig 3—Case 2: Histologic appearance of a capillary hemangioma displaying large numbers of small blood vessels predominantly of capillary size (hematoxylin-eosin stain, 24X).

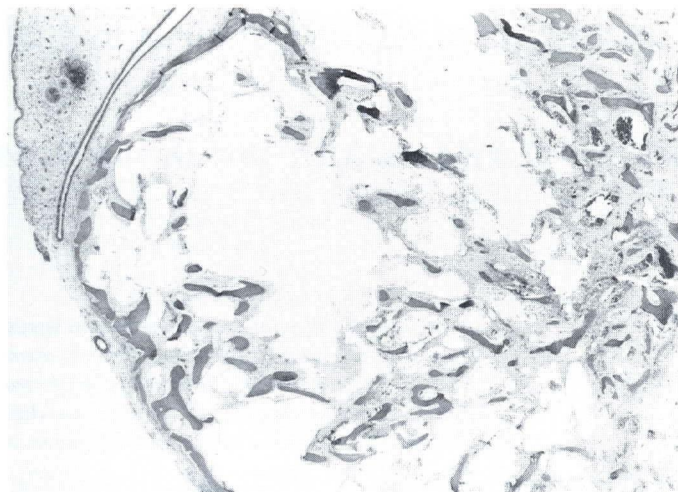


Fig 4—Case 4: High power view of a maxillary cavernous hemangioma showing cyst-like spaces lined with endothelial cells (hematoxylin-eosin stain, 15.5X).

hemangioma is difficult to distinguish from a granuloma pyogenicum when inflammatory infiltration is evident. According to current concepts, the pathogenesis of the lesions differs but the histologic pattern may be extremely similar (7,12,23).

Hemangiomas of the cavernous type may be multiple or single, discrete or diffuse, red to blue, soft masses that are spongy on sectioning. Microscopically, they are composed of tangles of thin-walled, cavernous blood vessels and spaces separated by scanty connective tissue stroma (Fig 4). An entire small lesion may be composed of one or two cyst-like spaces lined with endothelial cells and filled with erythrocytes. Cavernous hemangiomas, which rarely involute spontaneously, arise most commonly from the lateral wall of the nasal cavity. Many hemangiomas are actually mixtures of capillary and cavernous types. Small and large vascular spaces may be interspersed or may appear in different areas of the same lesion. The cellular type of hemangioma presents a pattern of solid sheets and cords of endothelial cells with occasional vascular spaces (12,23).

In summary, hemangiomas must be considered in the differential diagnosis of unilateral nasal mass lesions. They usually present with unilateral nasal obstruction and epistaxis and have a characteristic dull, blue-red color. Surgical excision, the treatment of choice for maxillary and sinus hemangiomas, must be individualized based on the extent of the lesion in order to obtain normal tissue margins and avoid recurrent disease. Septal hemangiomas should be excised with the underlying perichondrium in order to minimize recurrence.

References

1. Handley GH. Hemangiomas of the head and neck. *Ear Nose Throat J* 1987;66:486-90.
2. Ash JE, Old JW. Hemangiomas of nasal septum. *Trans Am Acad Ophth* 1950;54:350-6.
3. Osborn DA. Haemangiomas of the nose. *J Laryngol Otol* 1959;73:174-9.
4. Levey M. Hemangioma of the nasal septum. *Int Surg* 1976;61:344-7.
5. Wenig BL, Sciubba JJ, Cohen A, Abramsom AL. Nasal septal hemangioma. *Otolaryngol Head Neck Surg* 1985;93:436-41.

6. Myer CM III, Gluckman GL. Hemangioma of the nasal septum. *Ear Nose Throat J* 1983;62:536-7.
7. Fu YS, Perzin KH. Non-epithelial tumors of the nasal cavity, paranasal sinuses, and nasopharynx: A clinicopathologic study. I. General features and vascular tumors. *Cancer* 1974;33:1275-88.
8. Shallit JB, Smith GA, Francis D, Canalis RF. Nasal hemangiomas of pregnancy. *Ear Nose Throat J* 1977;56:377-9.
9. Freeman JL, Shemen LJ, Alberti PW, Holgate R, Pritzker KP, Noyek AM. Ossifying capillary hemangioma of the maxillary and ethmoid sinuses—a case report. *J Otolaryngol* 1981;10:481-92.
10. Ghosh LM, Samanta A, Nandy T, Das S. Hemangioma of the maxilla. *J Laryngol Otol* 1988;102:725-6.
11. Tsutsumiuchi K, Hasegawa M, Okuno H, Watanabe I, Okayasu I, Suzuki S. Haemangioma of the maxillary sinus: Some comments on preoperative diagnosis. *ORL J Otorhinolaryngol Relat Spec* 1982;44:43-50.
12. Shklar G, Meyer I. Vascular tumors of the mouth and jaws. *Oral Surg* 1965;19:335-8.
13. Fordham SD. Hemangioma of the maxillary sinus. *Ear Nose Throat J* 1978;57:333-5.
14. Broderick RA, Round H. Cavernous angioma of maxilla, fatal haemorrhage after teeth extraction, with notes of similar non-fatal case. *Lancet* 1933;2:13-5.
15. Hayden RE, Luna M, Goepfert H. Hemangiomas of the sphenoid sinus. *Otolaryngol Head Neck Surg* 1980;88:136-8.
16. Computed body tomography with MRI correlation. Lee JKT, Sagel SS, Stanley RJ, eds. 2nd ed. New York: Raven Press, 1989:612-6.
17. Greyson ND, Noyek AM. Nuclear medicine in otolaryngological diagnosis. *Otolaryngol Clin North Am* 1978;11:541-60.
18. Persky MS, Berenstein A, Cohen NL. Combined treatment of head and neck vascular masses with preoperative embolization. *Laryngoscope* 1984;94:20-7.
19. Overholt SL, Gado M, Sessions DG, Ogura JH. Angiography in the diagnosis and management of extracranial vascular lesions of the head and neck. *Laryngoscope* 1978;88:1769-83.
20. Frame JW, Putnam G, Wake MJC, Rolfe EB. Therapeutic arterial embolization of vascular lesions in the maxillofacial region. *Br J Oral Maxillofac Surg* 1987;25:181-94.
21. Biller HF, Krespi YP, Som PM. Combined therapy for vascular lesions of the head and neck with intra-arterial embolization and surgical excision. *Otolaryngol Head Neck Surg* 1982;90:37-47.
22. Dixon JA, Davis RK, Gilbertson JJ. Laser photocoagulation of vascular malformations of the tongue. *Laryngoscope* 1986;96:537-41.
23. Anderson's pathology. Kissane JM, ed. 8th ed. St. Louis: C. V. Mosby Company, 1985:721-2.