Head and Neck Pathology Slide Seminar: Risk of underdiagnosis and overdiagnosis in head and neck pathology

Case 2: Presented by Alena Skalova, MD

Clinical History

35-year-old man presented with a chief complaint of nasal obstruction. Physical examination revealed a glistening mass filling the right posterior choana and the posterior aspect of the right nasal fossa. The patient was admitted to the hospital and intranasal polypectomy was performed. The patient presented with recurrent mass in the nasal cavity 14 months after first surgical resection. The specimen represents recurrent nasal lesion.

Histologically, the lesion was characterized by a conspicuous proliferation of variously sized blood vessels. Post-thrombotic changes of the vessels and variously heavy deposition of fibrin in the organizing thrombi were noted. The stroma revealed a heavy inflammatory infiltrate, and it was in places hyalinized. Reactive changes of skeletal bone were also found. Capillary proliferation arranged in a lobular fashion indistinguishable from pyogenic granuloma was seen. Cellular foci of a capillary proliferation with various degree of atypia simulating angiosarcoma were also focally found. Mitoses were rare to absent and atypical mitoses were not present.

Diagnosis

Angiomatoid nasal polyp

Discussion

Nasal and paranasal inflammatory polyps can undergo secondary changes, which may be source of diagnostic difficulties, such as atypical pseudosarcomatous changes involving stromal cells and pseudoangiosarcomatous vascular changes (1). There are several isolated case reports documenting these vascular changes, but very diverse and unrelated names were given by the authors while describing this phenomenon, including “maxillary sinus hematoma” (2), “organized hematoma of the maxillary sinus” (3), “hemorrhagic
pseudotumor of the maxillary sinus” (4), infarcted angiomatous polyps (5) and angiectatic nasal polyp (6), reflecting the great diagnostic confusion caused by these polyps.

Recently we have published a series of 45 patients with polyps of the nasal and paranasal cavity, showing as yet ill recognized angiomatoid changes which may cause considerable diagnostic difficulties (7). Our study confirmed that angiomatoid polyps are benign but often recurring lesions; and sometimes, especially in recurrent lesions, erode or deviate adjacent bony structures. Awareness of the above described features and familiarity with the clinical presentation of angiomatoid sinonasal polyps can avoid overdiagnosis (7).

The most likely explanation of vascular changes in the paranasal inflammatory polyps can be inferred from the anatomical position of the majority of these polyps. They originate mostly in the maxillary sinus. Antrochoanal polyps are polyps that arise in the maxillary sinus and extend into the middle meatus projecting posteriorly through the ipsilateral choana. Those polyps that arise in the maxillary sinus and extend into the middle meatus projecting anteriorly are known as antronasal polyps. Less frequently, the origin of sinonasal polyps is in the sphenoid and ethmoid sinuses. They pass through sinus ostia via a small stalk into the nasal cavity, so that the main bulk of the lesion occurs usually in the nasal cavity (8). Because the polyps may form a large mass with a small stalk and because the stalk extends through a relatively small channel causing a compression and stasis of the feeder vessel, these polyps are particularly subject to secondary changes resulting from chronic or subacute vascular compromise (7,8). Because a minority of polyps occurring in the nasal septum and lateral walls of nasal cavity manifest angiomatoid changes with identical to those seen in lesions involving maxillary sinus, ethmoid and sphenoid sinuses, it is apparent that necrosis may be induced by other means than the strangulation of the stalks of antrochoanal polyps. The most plausible explanation appears to be the local pressure caused by the bulky size of the nasal polyp which often entirely obtrudes the whole nasal cavity.

The histology of the secondary changes may range from simple increase in stromal fibrosis to more striking alterations resulting from hemorrhagic infarction, including vascular proliferations simulating angiosarcoma. Reparative changes, especially those occurring in patients with recurrent disease may result in a large keloid-like hyperplastic scar, a lesion potentially confused with desmoid fibromatosis, such as in our case (7).
Angiomatoid polyps are benign lesions, but they can present with pseudomalignant clinical and morphological features and they are often misinterpreted as more aggressive or even malignant lesions (1,7). Reactive changes may impart a histological resemblance to various benign and malignant tumors of nasal and paranasal regions, the most important of which are nasopharyngeal angiofibroma, sinonasal hemangiopericytoma (glomangiopericytoma), and angiosarcoma.

Nasopharyngeal angiofibroma (NAF) is a lesion with aggressive growth, which in large tumors may have even intracranial extension and which often requires extensive surgical approach. It occurs nearly exclusively in young boys. These clinical features (age and gender) can help in differentiating between NAF and angiomatoid polyps in most cases. Presence of expansive nasal tumor without a nasopharyngeal mass excludes the diagnosis of NAF. Further, NAFs in contrast to angiomatoid nasal polyps, are broad based lesions that are difficult to be surgically removed. Histologically, NAF differs from angiomatoid nasal polyp by long and very thin slit-like vascular channels, which typically have very thin walls with an irregularly thickened muscular layer. The stromal collagen has a wavy pattern resembling a fascia and the stromal cells have a stellate shape.

Sinonasal hemangiopericytoma (glomangiopericytoma) presents usually as a solid proliferation of cells which often manifest myoid differentiation and lack vascular thrombotic changes and necrosis, features invariably present in angiomatoid nasal and paranasal polyps. The most helpful feature in the diagnosis of polyp is the finding of the rests of well preserved inflammatory polyps devoid of necrosis and secondary changes, which, in our experience, is present in most cases (7).

The most important differential diagnostic consideration is angiosarcoma (1). It should be kept in mind that angiosarcomas of sinonasal tract are quite rare. Therefore, the diagnosis of angiosarcoma in this anatomic location should be always treated with skepticism (1).

In summary, our study confirms that angiomatoid nasal and paranasal polyps are benign lesions which often recur and may reveal reactive pseudomalignant changes that should not be overdiagnosed as malignancy possibly resulting in consequent unnecessary aggressive treatment (7).

Selected References


