**Central Hemangioma**
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 **Overview**
Central Hemangioma is a rare intrabony lesion. It is described as a “benign tumor with proliferation of blood vessels” according to Central Hemangioma: An Overview and Case Report**.**

**Etiology**

It is unclear what the origin of central hemangioma is, but there are different theories that are debated. Including the vascularization of a benign neoplasm because of initial endothelial proliferation theorized by Shira and Guernsey. Another theory states that it is a “hamartoma resulting from proliferation of mesoderm that undergoes endothelial differentiation and, subsequently, is canalized and vascularized.”

**Clinical Presentation**

Objective findings include asymmetrical face due to swelling of the bone and soft when palpated. Clinically, it may also be “smooth or lobulated and the size may range from few millimeters to several centimeters. The color ranges from pink to purple and blanches when pressure is applied.” In addition, occlusion and/or teeth maybe disarranged and early eruption of permanent dentition. Subjective findings include “pulsating sensation or throbbing discomfort” in some patients while others claim to be non-painful which is the most common report. However, when it is painful, it can be felt in the following maxillofacial areas: ear, TMJ, and mandibular condoyle.

**Demographic**

According to case study of Central cavernous hemangioma of mandible, the sex predilection is 2:1 (female: male) and high incidence between 20-50 year old individuals.

**Biopsy / Histology / Radiographs**

The type of definitive diagnosis recommended according to the case report, is angiography which is a safer method than a biopsy which increases the risk for uncontrollable bleeding. An angiograph will “provide the lesion’s contents without the risk of hemorrhage.”

The histological features include three different types, capillary, cavernous, or mixed. The capillary type is described as “fine capillary loops that radiate into a sunburst pattern.” The cavernous type is described as “thin-walled cavernous spaces are lined by a single layer of endothelial cells interspersed among bony trabeculae.” In addition, Hirzot states there are differences in appearance histologically as the hemangioma develops. During the early stage, the lesion is highly vascular. Then, the intermediate stage consists of a blood clots in cystic areas. In the terminal stage, we will see signs of ossification.

The radiographic features include radiolucent lesion with a central radio-opaque appearance. It can be described to have a sunburst pattern where the trabeculae are coming out from the center and spreading outwards. In other cases, it appears to have a “soap bubble or honeycomb pattern in multicystic areas.”

**Differential Diagnosis**
The central hemangioma can be mistaken for many other pathologies radiographically including osteosarcoma, fibrous dysplasia, central giant cell granuloma, ameloblastoma, multiple myeloma, dentigerous cyst, and odontogenic cyst. Clinically, it is similar to a central arteriovenous fistula, aneurysms, or a shunt according to the case report.

**Treatment**
The treatment options include, non-invasive radiotherapy, injection of sclerosing and embolizing agents, and surgical intervention by curettage and radical resection with immediate osseous reconstruction according to the case study. In addition, there are factors that influence the selection of treatment method including the position, extent, and clinical presentation of the lesion. The patient’s medical history and age should also be taken into consideration. For example, “radiation therapy is considered for lesions that are inaccessible or when surgical removal would be too damaging” as the case report states.

**Prognosis**

Surgical intervention either alone or with embolization is the most popular treatment of choice. There are two surgical methods as explained in the case study either conservative curettage or radical excision with immediate bone graft reconstruction. The prognosis with this treatment would be a more symmetrical facial appearance, no more pain if there was pain prior to treatment, and patient may feel as if a weight is lifted on the area that once had the hemangioma so it would be easier to chew food and talk. However, without treatment the hemangioma may remain the same size and continue to be non-painful.

**Professional Relevance**

As a dental hygienist, I check for any abnormalities and asymmetries in the head and neck area. When conducting an extra oral/ intra oral exam, I can clinically observe a central hemangioma by the red purple color and feel a soft mass as I palpate the area. It is important to know that this lesion is highly vascular and there’s a risk for uncontrollable hemorrhage. Therefore, as I scale/debride calculus and plaque, caution must be taken when working on the teeth surrounding the hemangioma. In addition, oral hygiene home care must be strictly enforced especially around the hemangioma to prevent any restorative work or extraction.

**Bibliography**
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