Odontogenic Myxoma

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Oral Pathology 2017
Section: Tuesday AM

Overview

The term odontogenic refers to something that originates within or closely surrounding the tooth tissues. A myxoma on the other hand, is a rare tumor of the hard sclerous and soft tissues in the body. When these two terms are combined, we get what's known as an odontogenic myxoma; a benign intraosseous neoplasm originating from mesenchymal tissue, that predominantly affects the mandible. This is an uncommon locally aggressive condition and is usually found in relation to a premolar, molar or the mandibular posterior 3rd molar ramus area. Other names include odontogenic fibromyxoma or myxofibroma. Odontogenic myxoma's represent approximately 3-6% of all odontogenic tumors.

Etiology

Although we know that odontogenic myxoma's arise from embryonic connective tissue associated with tooth formation, the exact etiology is unknown at this time.

Clinical Presentation

An odontogenic myxoma is usually a well-defined, slow-growing, expansile mass with late-appearing symptoms. Symptoms normally do not include pain but may vary per patient. Other symptoms can also include paresthesia, ulceration, bone loss and tooth mobility/displacement. They are commonly located by the mandibular posterior 3rd molar ramus area or by the premolar/molar region. It is also important to note that although these lesions are non-metastasizing, they can cause facial distortion and cortical destruction.

Demographic

Peak incidence for odontogenic myxoma is in the second to third decades of life, with a slight predilection for females. Reported incidence rates of an odontogenic myxoma range from 0.5% to 19%.

Biopsy / Histology / Radiographs

There is a difference in opinion regarding the type of biopsy that should be taken in the case of an odontogenic myxoma tumor. Some professionals argue an excisional biopsy is preferred for lesions that are harder to access because the treatment is more favorable for the patient. However, studies have shown that an incisional biopsy is a better option because we can histologically confirm the diagnosis. It is riskier to do an excisional biopsy because you are going in blind. There are some conditions that may resemble an odontogenic myxoma but excision of it is contraindicated because it can actually be worse for the patient and cause a larger tumor as a result. It is for this reason an incisional biopsy is believed to be best so that a definitive diagnosis is reached before any more invasive removal is performed.

Histologically this is a tumor of the mesenchyme of the pulp tissue specifically, therefore

it carries the features of dental pulp. Classical features of an Odontogenic myxoma include a mucoid-rich extracellular matrix, with scattered cells, connective tissue fibers, bony trabeculae and irregular calcifications. There are also findings of mast cells in some cases, along with stellate cells with small hyperchromatic nuclei. The tumor does not always present as encapsulated but may be at times.

The radiographic features of odontogenic myxoma's are described as well-defined radiolucent lesions. Typically, they are multilocular and the more larger lesions can also present with a sun ray appearance like that of an Osteosarcoma. The radiographic appearance resembles that of a honey comb pattern.

Differential Diagnosis

There are multiple differential diagnoses possible based on radiographic and clinical appearance of an odontogenic myxoma. For instance, it includes ameloblastoma, intraosseous hemangioma, aneurysmal bone cyst, glandular odontogenic cyst, central giant cell granuloma, cherubism, odontogenic keratocyst and osteosarcoma. The majority of these conditions mentioned above have multiple similar features which would make it difficult to make the proper diagnosis without histological confirmation. Some of the same characteristics include the site of the lesion, being multilocular, usual age of incidence, recurrence rate and radiographic appearance. Looking at a patient extra-orally, swelling will be evident around the cheek or jaw area which is also common in many of these conditions. It is for this reason, that clinical, radiographic and histological information must be collected and used to make the proper diagnosis.

Treatment

Odontogenic myxoma is an invasive tumor which is known to break through its surrounding boundaries causing the tumor to penetrate the bony trabeculae. For this reason, treatment options vary per case and range from enucleation, curettage, wide excision, resection, to radical surgeries involving resection of adjacent tissues. However, due to high recurrence rates, the recommended treatment is conservative excision or radical surgery, depending on the size of the myxoma. Due to its aggressive nature and ability to cause extensive bone damage, segmental resection of the jaw may be required for larger tumors. It is also a crucial part of treatment that the patient be monitored closely for a minimum of 2-5 years. This is because the likelihood of recurrence takes place during this time frame. After surgery is complete and there have been no signs of recurrence, depending on the severity of damage, some patients may require cosmetic surgery if desired.

Prognosis

Although this tumor is non-malignant, the prognosis is poor if treatment is not performed. Without treatment, the patient is at risk of tooth displacement, mobility and extensive bone loss as the tumor is very likely to continue to grow larger. The patient may develop issues with mastication, speech and possibly breathing if it grows large enough and spreads into the pharynx area. Ultimately the patient could end up losing their jaw. From a cosmetic standpoint, facial

distortion is also likely to be evident which can cause psychological and emotional problems for the patient.

The prognosis with surgical treatment is usually successful. However, odontogenic myxoma is notorious for a high recurrence rate of up to 25% after curettage or surgical removal. For this reason, surrounding bone around the tumor may be removed to minimize the possibility of recurrence. If recurrence takes place it is usually within 2-5 years after the tumor has been removed. Once that sensitive time period passes, the chance of recurrence decreases. It is highly suggested that high tech imaging is used to clearly identify the margins of the tumor before removal for a better prognosis.

Professional Relevance

I think with this specific condition, as a Dental Hygienist it is important that we teach the patient about what is normal and what is not in the oral cavity. Since this tumor is normally asymptomatic, the patient may not be aware of its presence or the damage it is causing. We are responsible for educating our patient and advising them of the importance of having it evaluated by a specialist. On the other hand, the patient may be inclined to avoid that particular area when it comes to oral hygiene. We need to teach them proper oral hygiene care at home before, during and after treatment of the tumor.

We want to take all preventable measurements and catch it ahead of time if we notice symptoms of its presence or recurrence. This is why it is crucial that we do an extensive extra oral and intra oral evaluation on our patients. We want to make sure we don't miss anything which also includes the importance of taking proper diagnostic radiographs. Aside from the above, I think one of our biggest roles for a patient who presents with an odontogenic tumor is moral and emotional support. These tumors can be very aggressive and destructive causing facial distortion. This can have a negative impact on the patient emotionally and psychologically so as their dental hygienist we should be there to support them and help advise them throughout the treatment process.

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