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Nasopalatine Chondroma: A Rare Cartilaginous Tumor

Cartilaginous tumors are common in the long bones of the body and relatively rare in the head and neck. When they do occur in head and neck, the most common site is the midface. Since the first case report by Morgan in 1842, approximately 150 cases of head and neck chondroma have been recorded in the English-language literature. In this article we describe a new case in which a chondroma caused a deformity of the hard palate in a 30-year-old lady. The lesion was excised in toto via a Trans palatal approach. We have made an attempt to comprehensively review the literature on this rare and controversial tumor and place special emphasis on its uncertain biologic nature. A detailed discussion of the diagnosis and management of this tumor is also included in this report.

Key words: Cartilaginous tumor, Chondroma, Nasopalatine

Chondroma is a benign cartilaginous neoplasm. Chondrogenic tumors are relatively uncommon, with malignancy occurring twice as frequently as in benign tumors.[1] Histologic differentiation between chondroma and chondrosarcoma, though crucial in deciding treatment options, may be difficult. Cartilaginous tumors make up the second largest group of bone neoplasm. They are rare in the head and neck region; most lesions are found in the long bones, pelvis, and ribs.[12] When they do arise in the head and neck, the sites of predilection are the maxillofacial region, the larynx, and the nasal septum.[13] In this article, we report a rare case of chondroma arising from the hard palate. We discuss the problems encountered in the clinical and Histopathological interpretation of this tumor, as well as the management of a histologically proven case. Because 20% of head and neck chondrosarcomas may be misdiagnosed initially as benign, the treatment of choice is wide surgical excision. [13]

Case Report

A 30 year- old lady referred from department of otorhinolaryngology for CT paranasal sinuses for evaluation of a painless swelling intraoral over the hard palate, the swelling had been present for 2 years, it had progressively increased in size and was associated with difficulty in deglutition and nasal obstruction. Oral examination showed a firm, nontender, 3 x 2 cm swelling

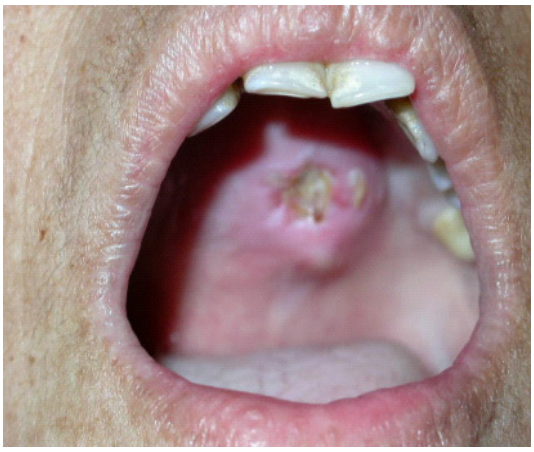

Figure 1: showing the palatal lesion

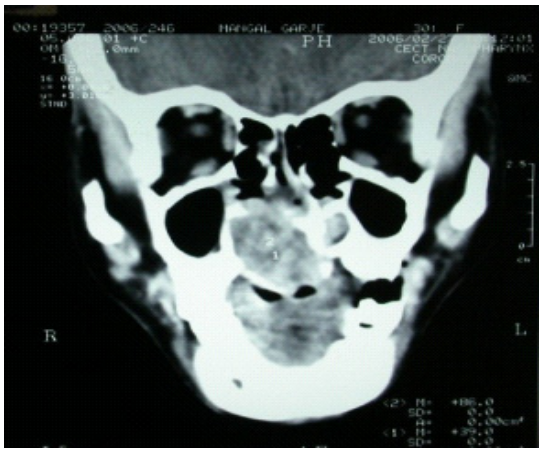

figure 2: CT scan showing the bone eroding lesion involving the hard palate and occluding the nasal cavity.

over the hard palate **(Figure 1)**. The mucosa over the swelling was deficient centrally and exposed a nontender, hard yellowish mass which was immobile. The swelling did not bleed on palpation. Findings on blood testing and urine microscopy were within normal limits.

Computed tomography (CT) was done using GE Sytec 2000i. Both axial and coronal 5mm sections were taken before and after intravenous contrast. Axial and coronal images demonstrated 6.75 x 4.19 cm sized heterogeneously enhancing soft tissue density lesion epicentered over the pterigo-palatine fossa on right side. Medially the lesion was obliterating the nasal fossa. Laterally this lesion was extending through the spheno-palatine foramen into the pterygopalatine fossa. The pterygopalatine fossa was widened with mild anterior bowing of the posterior maxillary antral wall with erosion of pterygoid laminae. Superiorly the lesion was eroding the floor, superolateral wall of sphenoid sinus and clivus on right side. Inferiorly the hard palate was eroded. Anteriorly the lesion was protruding into the nasal cavity. Posteriorly the lesion was protruding into the nasopharyngeal airway. There were intratumoral bony sequestra and calcifications within the lesion. The mass did not invade the maxillary sinus or the cribriform plate **(Figure 2)**. The nasal cavities were deformed, and the paranasal sinuses were well aerated. We made a provisional diagnosis of either a cartilaginous or fibro-osseous tumor of the hard palate.

The patient was taken for excision of the lesion via a trans palatal approach and the lesion was excised in Toto with clean margins **(Figure 3)** . A histopathological diagnosis of chondroma was made which was difficult to differentiate from a low grade chondrosarcoma **(Figure 4)**.

Discussion

Epithelial tumors constitute most of those, occurring in the nose or the nasal cavity. [13] Chondrogenic tumors are relatively uncommon in the head and neck region, with malignancy occurring twice as frequently as in benign tumors. Histologic differentiation between chondroma and chondrosarcoma though crucial in deciding treatment options, may be difficult. [14]

Chondromas can develop anywhere in the mid facial region. In general cartilaginous tumors eventually have a malignant potential, but in the final analysis, those that metastasize are malignant and the ones that don't probably are not. They have a aggressive nature and tend to recur, thus requiring more extensive resection.

Chondrogenic tumors of the facial skeleton usually show aggressive behavior. Because of the discrepancy between histologic picture and biologic behavior, Chondrogenic tumors should be considered potentially malignant. Because 20% of head and neck chondrosarcomas may be misdiagnosed initially as benign, the treatment of choice is wide surgical excision.[13]

Chondrogenic tumors of the head and neck are rare and most often malignant. Sites of prelidiction being ethmoid sinus (50%), maxilla (18%), nasal septum (17%), hard palate and nasopharynx (including sphenoid sinus) 6% each, and alar cartilage (3%).[9]

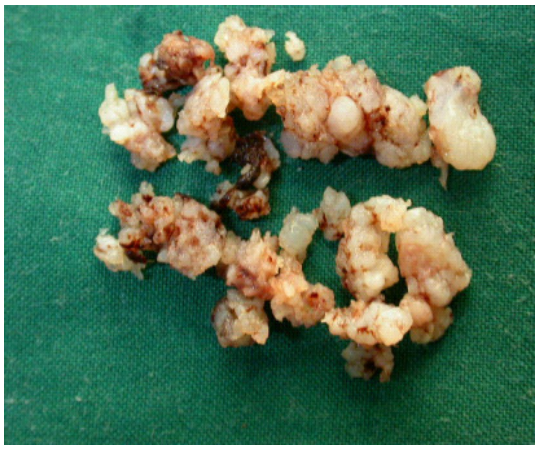

Figure 3: excised chondroma

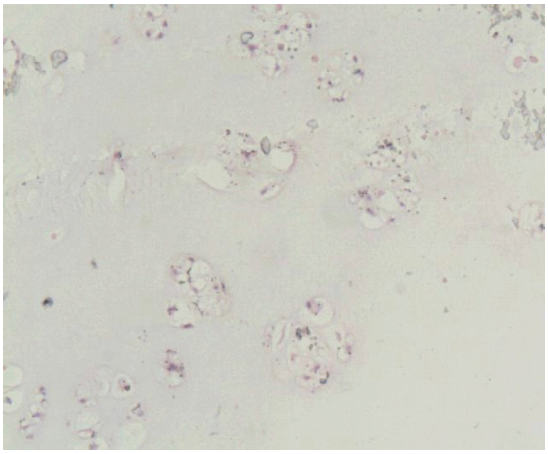

Figure 4: histology of the excised chondroma with HE stain

Nasopalatine Chondrosarcoma is a rare neoplasm. Approximately 60% of the tumors occur in patients below 50 yrs old with no sex prelidiction. Chondromas arising from the palate and nasal septum are well circumscribed midline masses and fairly homogenous on CT. They tend to be expansile lesions that remodel bone. Calcification of chondroid matrix occurs rarely. The diagnosis of chondroma is based on the combination of clinical, radiological and pathological findings.[13]

The differential diagnosis of such nasal cavity mass lesions is extensive and includes many inflammatory and neoplastic entities. Fungal infections, rhinosporidiosis, tuberculosis, wegners granulomatosis, and lethal midline granulomas present as nasal cavity soft-tissue mass lesions with variable bone destruction. The diagnosis of nasopalatine chondroma should be considered in the differential diagnosis of midline nasal cavity masses.

These tumors may arise from the nasal septum and larynx because of their intrinsic cartilaginous nature.[3] Cartilaginous tumors may also arise from bones that ossify in cartilage (e.g., sphenoid and nasal bones); these bones can harbor cartilaginous rests long after ossification is complete.[2] Chondromas and chondrosarcomas can also develop in tissues that do not normally contain cartilage at any stage of development.[3] Aberrant embryonic cell rests have been suggested to explain the origin of cartilaginous tumors at these sites (e.g., the maxilla).[15] Multidirectional differentiation of the mesenchymal cells has also been implicated in the origin of cartilaginous tumors at these sites.[2]

Macroscopically, benign Chondromas are smooth, firm, and lobulated tumors with a gritty "ripe pear feel".[9] On microscopy, cartilage cells are consistently small and contain pale, vacuolated cytoplasm and small, round, dark-stained nuclei. Some fields may show binucleate cartilage cells, indicating a process of amitotic division, but most are monocellular and mononucleate.

Making a histologic distinction between a benign chondroma and a malignant chondrosarcoma may be difficult. In fact, many authors believe that a benign chondroma is actually a low-grade chondrosarcoma.[5]

Although the final diagnosis is established by the histopathology report, a clinical and radiological differentiation between a benign and malignant lesion must be made so that the physician can plan the surgical management of the lesion. Some clinical features should raise a suspicion of malignancy, including older age at presentation, a rapid extension of growth, an invasion of surrounding structures, and a site of origin in the facial skeleton.[14,7] In this case we noticed widening of the pterigo-palatine fossa with classic anterior bowing of the posterior maxillary antral wall along with posterior displacement and erosion of pterygoid laminae. Bowing of the posterior maxillary antral wall is a specific sign (Holman-Miller sign)[4] that can be produced by a slow growing tumor.

Surgery is the mainstay of treatment for both benign and malignant tumors. A wide excision should be performed when a presumptive diagnosis of a cartilaginous tumor of the facial skeleton is made because these tumors behave aggressively in the facial skeleton.[6]

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