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Odontogenic myxoma : report of 2 cases

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ABSTRACT

The odontogenic myxoma is an infiltrative benign tumor of bone that occurs almost exclusively in the jaw bones and comprises 3% to 6% of odontogenic tumors. This neoplasm is thought to arise from the primitive mesenchymal structures of a developing tooth, including the dental follicle, dental papilla, or periodontal ligament. Radiographically the odontogenic myxoma may produce several patterns: unicystic, multilocular, pericoronal, and radiolucent-radiopaque, making the differential diagnosis difficult. In this report, two cases of the odontogenic myxoma in the jaw bones are presented. The first case involved only the mandible, while the second case involved the maxilla. Both cases presented extensive multilocular radiolucencies characteristic of odontogenic myxoma. ***(Korean J Oral Maxillofac Radiol 2002; 32 : 231-4)***

KEY WORDS : jaw neoplasms; myxoma; magnetic resonance imaging

Myxomas are benign, but locally invasive, neoplasms that rarely appear in the skeleton. When they are found in osseous sites they almost exclusively manifest in the jaws. The lesion is defined by the World Health Organization (WHO) as a locally invasive neoplasm consisting of rounded and angular cells lying in an abundant stroma. Of the myxomas occuring in the jaws, the reported cases in the non-tooth-bearing areas are few. But in 2000 Halfpenny et al.[1] reported a case of myxoma of the mandibular condyle.

This neoplasm probably arises from the primitive mesenchymal structures of a developing tooth including the dental follicle, dental papilla, or periodontal ligament, and is therefore classified as an odontogenic tumor.[2] Kaffe et al.[3] reviewed the literature and reported that this tumor might present at any age but was most frequently discovered in the 2nd to 4th decades. The male to female ratio was 1:1.5, occured more frequently in the mandible than in the maxilla with ratios of 1.5:1 or 3:1. The radiological descriptions of the lesion are conflicting. In the WHO classification, it is described as multiple radiolucent areas of varying size, separated by straight or curved bony septa with poorly-defined borders. According to the literature, odontogenic myxoma may be multilocular or unilocular,[3] but the distributions are variably reported. Conflicting descriptions also appear in the literature regarding the borders of odontogenic myxomas, from well-defined borders to poorly-defined borders. Kaffe et al.[3] reviewed that the border of the lesions were well-defined in 66%, poorly-defined in 16%, and diffuse in 18%. In tooth-bearing areas, the tumor was often scalloping between the roots of the teeth. Displacement of teeth by the tumor was a relatively common finding, but root resorption was less frequently seen.[4] Expansion of the cortex and displacement of the teeth were common findings with larger lesions.

Differential diagnosis includes lesions showing typical multilocualr radiolucency such as ameloblastoma, central hemangioma, aneurysmal bone cyst, central giant cell granuloma, giant cell lesions of hyperparathyroidism, cherubism, and metastatic tumors in the jaws. Odontogenic myxoma can be invasive locally and has a high recurrence rate ranging from 10% to 33%.[5] Surgical excison and enucleation with curettage is recommended but resection could be done in more extensive cases.

Case report 1

A 40-year-old male visited our department with the gingival swelling of the distal part of left mandibular first molar which showed grade 2 mobility. The swelling caused bucco-lingual expansion of left mandibular posterior area but there was no pain or tenderness. Panoramic radiograph (Fig. 1A) showed an extensive multilocular radiolucent lesion of left mandible with moderate-defined border. The overall appearance of the lesion was the tennis-racket pattern which had angular or rectangular relationships among intralesional trabeculation. Periapical

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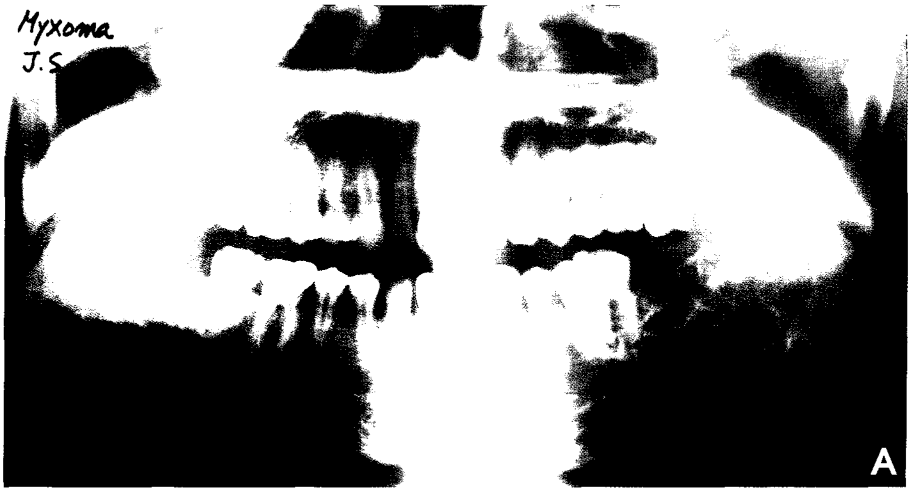
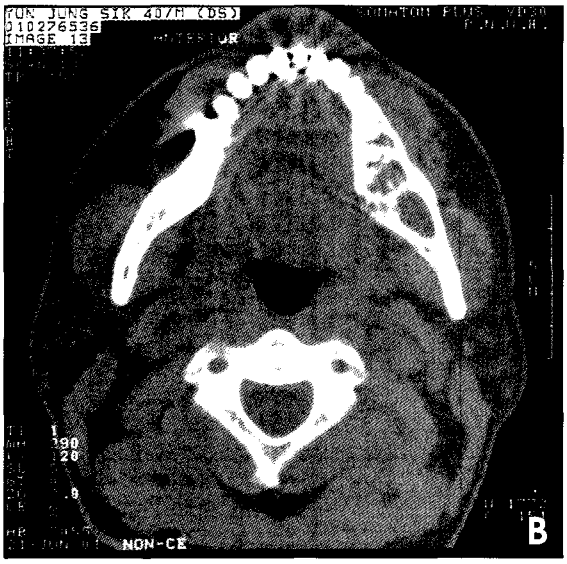


Fig. 1A. Panormaic view of case 1 showing extensive multilocular radiolucent lesion of left mandible. The intralesional trabeculations show the tennis-racket pattern.
Fig 1B. Axial CT scan. The lesion has intralesional septation and the lingual cortical bone is destructed.
Fig. 1C. Histopathological features. (HE stain ×400) The tumor is composed of loosely arranged spindle and stellate-shaped cells embedded in a myxomatous ground substance.



radiograph showed somewhat coarse trabeculae within the lesion but root resorption of adjacent teeth was not seen. Axial CT scan in Fig. 1B showed a soft tissue attenuation mass with bucco-lingual expansion at left posterior mandible, the intralesional septation and the lingual cortical bone destruction. The coronal CT scans confirmed the lingual cortical bone destruction of the lesion.

Differential diagnosis included ameloblastoma, odontogenic myxoma, aneurysmal bone cyst, central hemangioma and central giant cell granuloma with or without hyperparathyroidism. Histopathological features (Fig. 1C) confirmed the diagnosis of myxoma which composed of loosely arranged spindle and stellate-shaped cells embedded in a myxomatous ground substance. The lesion was treated with segmental mandibulectomy and reconstrutced with fibular free bone graft.

Case report 2

A 56-year-old female with a chief complaint of dull pain and swelling on left maxilla visited our department. On clinical examination mild palatal swelling was also noticed and the patient recognized the swelling one year before. There was no pain but intermittent tenderness over the lesion was reported. There was no local heat or fever. Panoramic and occlusal radiographs showed a moderately defined multilocular radiolucency at left maxilla involving lateral incisor to second premolar. Periapcial radiograph (Fig. 2A) showed fine trabeculation within the lesion, scalloped margin, and slight teeth displacement but there was no root resorption or thinning of lamina dura. Axial CT scans showed destruction of left incisor alveolar process and hard palate and coronal CT scan (Fig. 2B) showed soft tissue mass lesion at left palate. The lesion showed as a well-defined areas of low signal intensity on T1-

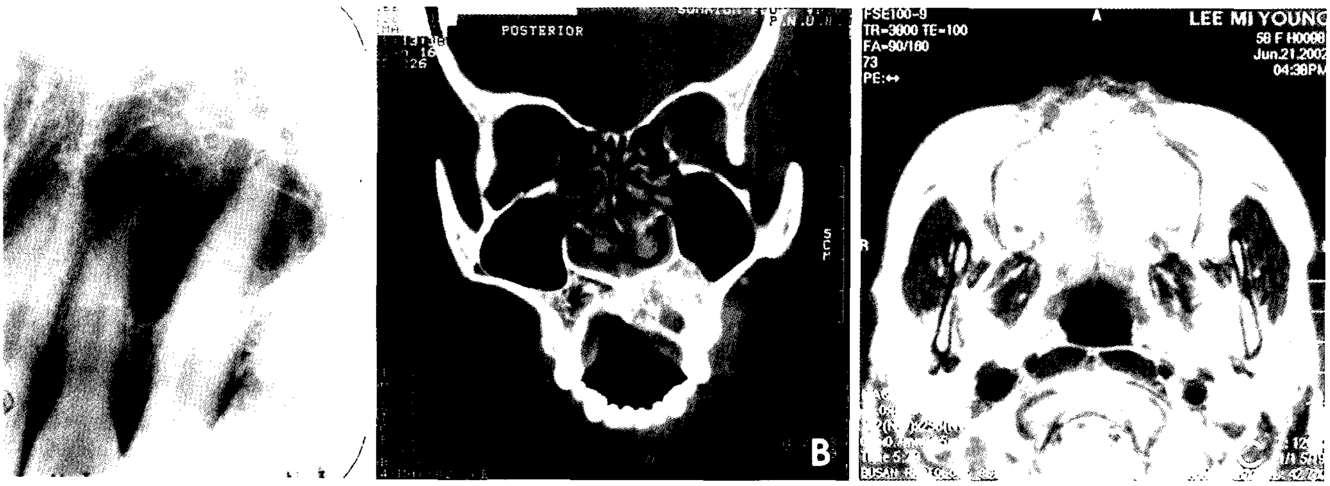


Fig. 2A. Periapical view shows fine trabeculation within the lesion, scalloped margin, and slight teeth displacement but there is no root resorption or thinning of lamina dura.
Fig. 2B. Coronal CT scan shows soft tissue mass lesion at left palate.
Fig. 2C. Axial MR image. The lesion shows high signal intensity on T2-weighted
image.
Fig. 2D. Histopathologic features of the lesion shows typical spindle cells of myxoma and the myxomatous intercellular matrix is stained poorly with Hematoxylin & Eosin. (HE stain ×400)

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weighted MR images, and of high signal intensity on T2-weighted images. In enhanced MR images, the lesion showed mild enhancement.

Differential diagnosis included central hemangioma. Both myxomas and hemangiomas could show high signal intensity on T2 weighted MR images but hemangiomas show marked enhancement when enhanced with contrast media. Also aspiration was helpful to make final diagnosis as odontogenic myxoma. Histopathologic features of the lesion showed typical spindle cells of myxoma and the myxomatous intercellular matrix was stained poorly with Hematoxylin and Eosin. (Fig. 2D) The patient was treated by en bloc resection with reconstruction with iliac bone graft.

Discussion

Several reports on MRIs of myxoma in the soft tissue have been published,[6-7] but only few reports on the MRI appearance of skeletal myxomas have been published in the English literature. Sumi et al[8] reported a case of myxoma which showed high-signal intensity on T2-weighted images like our case 2. However Kawai et al[9] reported that MRI of the maxillary myxoma showed a higher signal intensity on T1-weighted images and lower-signal intensity on T2-weighted images. Soft tissue myxomas have also been reported to show low-signal intensity on T1-weighted images and high-signal intensity on T2-weighted images.[6-7] Our MRI findings of case 2 correspond to those of soft tissue myxomas. Sumi et al[8] suggested that these differing reports may reflect a propensity of either more fibrous or more myxomatous tissue, possibly reflecting an older, less active lesion versus newer, more active areas. Myxomas can contain a variable amount of collagen, which can be identified on MRI. On T2-weighted images the mucoid component is hyperintense, the collagen is hypointense, and there is differential enhancement with contrast administration on T1-weighted image. The ratio of components may ultimately affect recurrence prognosis and selection of method at the time of treatment.[8]

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