Multimodality imaging of Stafne bone defect

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DESCRIPTION

A 56-year-old male candidate for dental implantation was sent to our radiology department for evaluation of the radiolucency at the mandibular angle on plain radiogram (figure 1). Unenhanced CT with bone reconstruction algorithm was performed, and medial cortical defect, lateral cortical thinning and lobulation were seen (figure 2). Hyperdense sclerotic margins were also noticeable. Soft tissue algorithm CT was not sufficient to show contact between the lesion and adjacent soft tissue. Then, contrast-enhanced MRI was performed using 1.5 T magnet. On unenhanced axial T1 and T2 sequences, the lesion seems to extend into mandibular angle from adjacent soft tissue (figure 3A, B). The lesion showed the same signal intensity on both sequences, but enhanced T1 sequences perfectly delineated the lesion's margin and demonstrated continuity between submandibular gland

and defect (figure 4). So, no further investigation was needed, and diagnosis of the Stafne bone defect was made.

Stafne bone defect is an asymptomatic cortical defect with sclerotic margin mostly seen at the angle of the mandible. It contains salivary gland often in continuity with the submandibular gland. The lesion may be seen bilateral, multiple,¹ bilobate² and without sclerotic margin.³ It was first reported by Stafne⁴ as a radiolucency in the mandibular angle on dental radiograms in 1942. The exact

Figure 1 Plain radiogram shows an ovoid, well-circumscribed, radiolucent lesion with sclerotic margin at the mandibular angle.

Figure 2 Axial bone algorithm CT image shows medial cortical defect, lateral cortical thinning and slightly lobulated expansion.

Figure 3 Axial-unenhanced, fat-suppressed (A) T1-weighted and (B) T2-weighted images show lobulated mandibular angle defect and the same signal intensity within the defect and the submandibular gland.

To cite: Saglam M, Salihoglu M, Sivrioglu AK, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-009483

Figure 4. Axial-enhanced, fat-suppressed T1-weighted image better delineates defect margins and shows submandibular gland extending into the defect.

etiopathogenesis is not clear. The differential diagnosis of the Stafne bone defect includes benign and malignant mandible lesions such as odontogenic cystic lesion, non-ossifying fibroma, fibrous dysplasia, vascular malformation, focal osteoporotic bone

marrow defect, brown tumour, ameloblastoma, basal cell nevus syndrome, giant cell tumour or a metastasis from a primary malignant tumour.

Learning points

- ▶ Stafne bone defect is an asymptomatic cortical defect with sclerotic margin mostly seen at the angle of the mandible.
- ▶ Although the diagnosis of the typical Stafne bone defect can be made on plain radiographs, in atypical cases, contrast-enhanced MRI should be considered a primary diagnostic technique.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed

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