

Case 9357

Giant cell reparative granuloma of the jaw

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Section: Head & Neck Imaging

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Patient: 57 year(s), female

Clinical History

A 57-year-old woman was referred to our hospital with a mandibular mass of chronic evolution (more than two years), lately associated with pain, purulent discharge and bleeding.

Imaging Findings

The X-ray showed a lytic lesion on the right side of the body of the mandible (Fig. 1).

Neck ultrasound was also performed depicting the lesion's soft component as a hypoechoic solid mass of well defined lobulated contours, and internal heterogeneity due to bone involvement (Fig. 2).

Contrast enhanced CT better demonstrated the extension of the lesion and its characteristics.

Located from the incisor to the right molar region, it was in continuity with an enhancing soft tissue component, which included a small calcification (Fig. 3). The maximum diameter of the lesion was 30 mm. The adjacent cortex was thin and focal disruption could be observed (Fig. 4a).

A second lytic lesion of smaller size (17mm) was visible in the right maxilla with an intact cortex surrounding it (Fig. 4b).

Discussion

The bone lesions in the jaw and maxilla were biopsied and both corresponded to giant cell reparative granulomas. Complete surgical excision of the jaw mass was then undertaken successfully and the diagnosis was confirmed (Fig. 5).

Giant cell reparative granuloma (GCRG) was first described by Jaffe [8] in 1953 but its aetiology remains unknown, with some controversy as to whether this lesion represents a neoplastic or most probably a reactive process.

Other designations like giant cell granuloma, osteoclastoma, giant cell epulis and myeloid epulis derive from the numerous osteoclast-like multinucleated giant cells admixed throughout the stroma. Immunohistochemistry studies have shown giant cells to be only slightly different from true osteoclasts but their origin is still unknown.

GCRG involving the mandible can be either central (bone origin) or peripheral (gingival soft tissues) and accounts for 1%-7% of all benign oral lesions [3].

Jaw lesions have female predominance (2:1) with a wide age range (20-60 years) being more common in patients younger than 30 (75%) [1]. In 70% of cases occurs in the anterior segment of the jaw, like the premolar, canine and incisor regions. Lesions are usually less than 2 cm, but sometimes may grow as large as 5 cm, and rarely undergo sarcomatous transformation [1, 2]. Multiple lesions such as seen in our case are rare.

The radiologic features of GCRG are nonspecific. Gnathic lesions demonstrate bone expansion and remodelling and have multilocular appearance. The cortex is usually thinned but intact, although more aggressive behaviour has been described. The radiographic appearance is indistinguishable from that of odontogenic cysts, aneurismal bone cysts, ameloblastoma, odontogenic myxoma, odontogenic fibroma and giant cell tumour (GCT).

Though radiologically similar, GCRG and GCT can be distinguished clinically as GCRG mostly affects the mandible, axilla, hands or feet. Histologically, osteoid production along haemorrhagic foci, an unusual feature in GCT, is frequently seen in GCRG whereas cystic degeneration and aneurismal bone cysts components are uncommon. Unlike GCT, mineralisation in GCRG is limited [3].

Two other lesions of the gingiva, pyogenic granuloma and peripheral ossifying fibroma, are clinically identical to the peripheral subtype of giant cell granuloma, with the histological analysis mandatory to establish the diagnosis [5, 6].

The treatment of choice is surgical, with a recurrence rate of 22-50% after a complete excision. In case of recurrence a second complete excision is curative [3].

Final Diagnosis

Giant cell reparative granuloma of the mandible

Differential Diagnosis List

Odontogenic cysts and tumours, Central giant cell tumour, Bone metastasis, Pyogenic granuloma, Peripheral ossifying fibroma

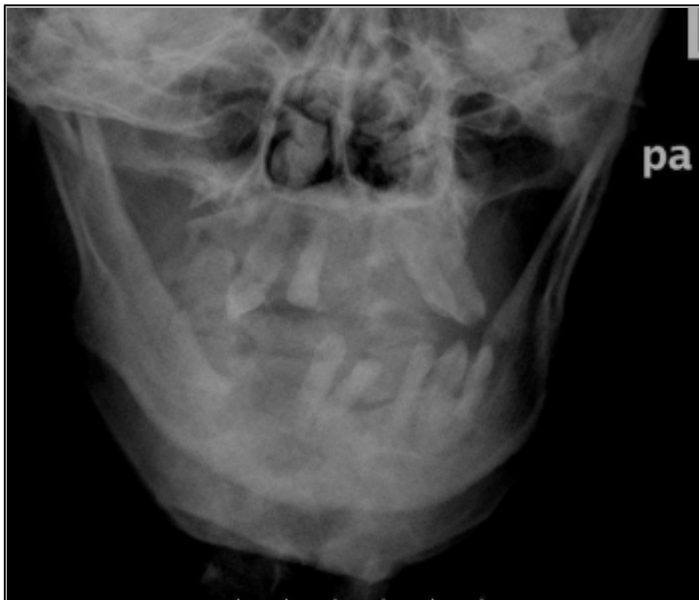
Figures

Figure 1 Mandible X-ray



Oblique view. A scalloped lytic lesion in the anterior region of the body of the mandible.

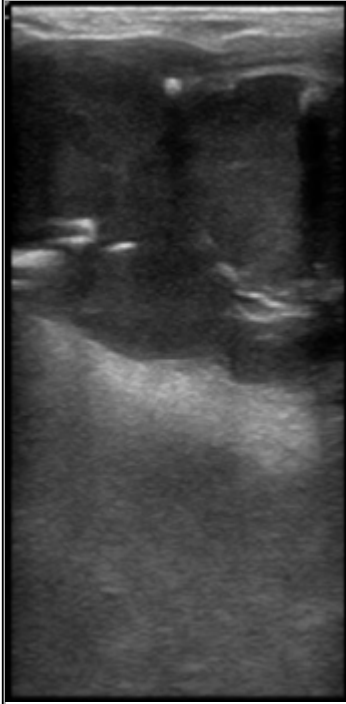
Area of Interest: Head and neck;
Imaging Technique: Plain radiographic studies;



AP view. The lytic lesion is in the right side of the body of the mandible.

Area of Interest: Head and neck;
Imaging Technique: Plain radiographic studies;

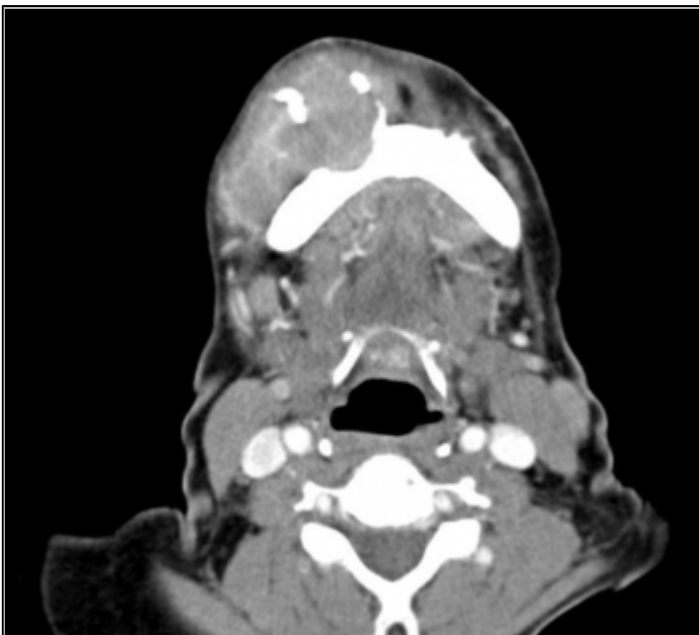
Figure 2 Ultrasound



Heterogeneous soft-tissue lesion, with some calcifications and well defined lobulated contour.

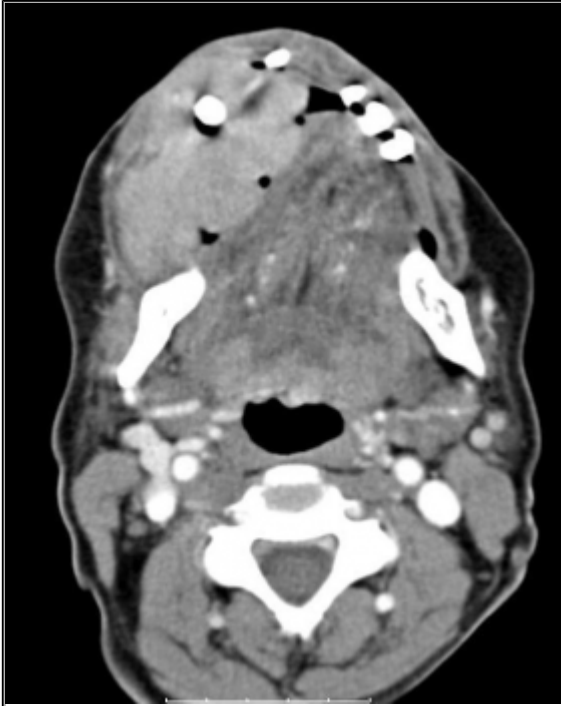
Area of Interest: Head and neck;
Imaging Technique: Ultrasound;

Figure 3 CE-CT (soft-tissue window)



Axial view of the soft tissue mass. It is a rather homogeneously enhancing mass with well defined limits, growing outside the bone.

Area of Interest: Head and neck;
Imaging Technique: CT;



Axial image 20 mm above Fig 4a where the mass reaches its maximum length. Notice the way it displaces the tongue but does not invade any of the nearby structures suggesting a benign behaviour.

Area of Interest: Head and neck;
Imaging Technique: CT;

Figure 4 CT (bone window)



Lytic expansive lesion in the mandible. Some irregularity and disruption of the cortex can be seen.

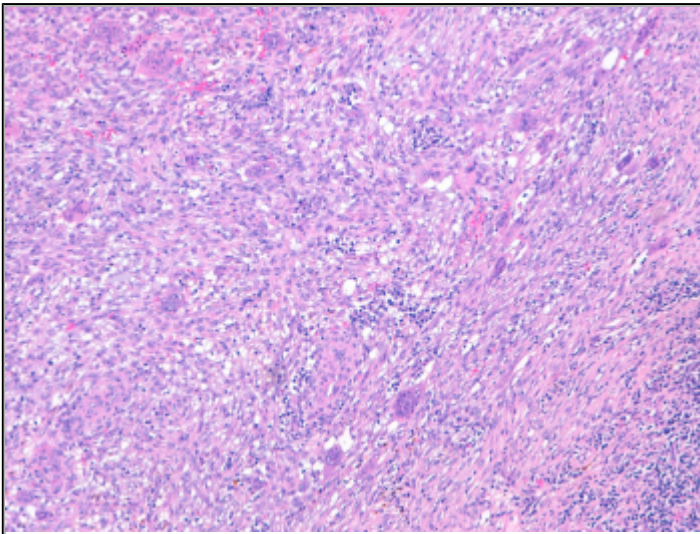
Area of Interest: Head and neck;
Imaging Technique: CT;



Lytic lesion in the right side of the maxilla, without perceptible cortical rupture.

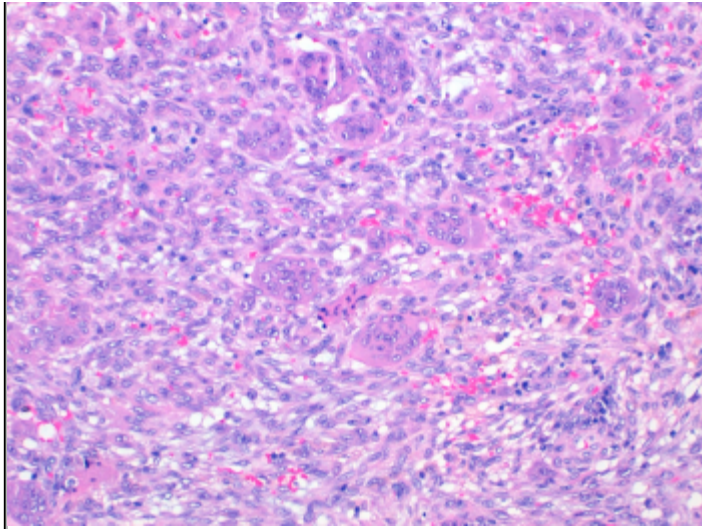
Area of Interest: Head and neck;
Imaging Technique: CT;

Figure 5 Histologic samples



Numerous osteoclastic multinucleated giant cells are present in sheets of stromal, ovoid to spindle, stromal cells. There is no nuclear atypia.

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Area of Interest: Head and neck;

MeSH

Mandibular Neoplasms [C05.116.231.754.450.583]

Tumors or cancer of the MANDIBLE.

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