

## Peripheral Osteoma Arising from Periodontal Tissue — Case Report —

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**ABSTRACT.** Peripheral osteomas of the jaws<sup>1-3)</sup> are uncommon bony tumors, and there have been few previous reports of osteomas originating from the periodontal tissue. This case report described a clinically epulis-like and bony-hard mass that occurred on the periodontal tissue of a molar region in the mandible.

A 23-year-old Japanese man had a hard mass on the lingual aspect of the first premolar and second molar. A panoramic radiograph revealed a sharply circumscribed, radiopaque mass. CT radiographs showed that the tumor had no continuity with the lingual alveolar ridge. The adjacent teeth were vital and the alveolar bone was absorbed in the same part.

Dense lamellar bone with no medullary component was seen microscopically. Partially acute and partially chronic inflammation was seen in the periodontal tissue of the second molar region.

This case did not seem to be compatible with any ordinary type of osteoma. We propose that it might be diagnosed as osteoma occurring in the peripheral region of the jaw in a broader sense.

**Key words:** peripheral osteoma — epulis osteomatosa — soft tissue osteoma

Exophytic gingival masses are soft or hard in consistency. The soft masses include pyogenic granulomas, peripheral giant cell granulomas, peripheral ossifying fibromas, and irritation fibromas.<sup>4-6)</sup> Compared with the incidence of these masses, that of hard masses is infrequent, and peripheral osteomas of the jaws are a rare condition. Osteomas are benign lesions which show very slow growth and consist of well-differentiated mature bone tissue with a predominantly lamellar structure.<sup>7)</sup> They occur almost exclusively in the bones of the face and skull. Both peripheral and central osteomas of the jaws have been described.

Grossly, peripheral lesions appear on the surface of cortical bone, attached by a pedicle or a sessile stalk. The following definition of a true osteoma proposed by Lucas<sup>8)</sup> helps to differentiate it from other conditions: a growth that consists of cancellous or compact bone and increases in size by continuous formation of bone. In the jaw, the concept of osteomas and other calcifying lesions is confused particularly when they develop peripherally or subperiosteally.<sup>9)</sup>

Multiple osteomas of the jaws occur in association with intestinal polyposis. The syndrome was first reported by Fitzgerald<sup>10)</sup> and by Gardner *et al*<sup>11)</sup> It is known as Gardner's syndrome and it has been described in many

additional reports. However, solitary peripheral osteomas of the jaw have been rarely reported.

#### CASE REPORT

A 23-year-old Japanese man had a hard mass on the lingual aspect of the mandible from the left first premolar to the second molar. The painless mass had been noted by his dentist a few years earlier. He felt contact pain in the left mandible on eating fruit a few days before admission. The pain continued after admission. The lesion was a hard mass pedunculated from the gingiva, and appeared to be a so-called "epulis" (Fig 1). It was ovoid and measured

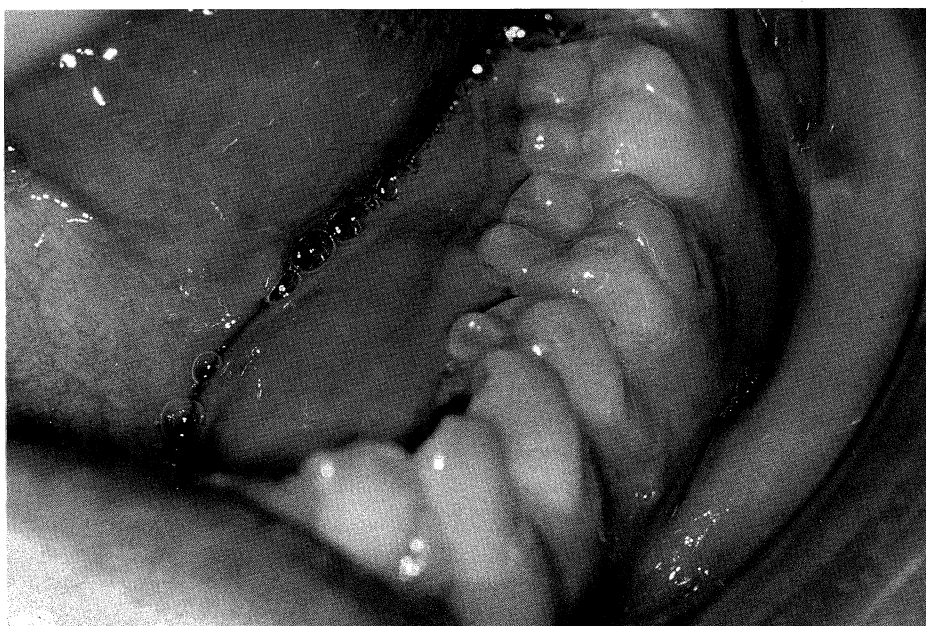


Fig 1. Exophytic gingival hard mass in the left lower jaw

approximately 4.4 cm in length, and appeared to be attached to the interdental papilla between the first and second molars (Fig 2). The surface was smooth and the overlying mucosa was normal in color. There were no other subjective symptoms. A panoramic radiograph of the mandible revealed a sharply circumscribed, radiopaque mass in the left lower alveolus (Fig 3) and the surrounding bone of the mass lacked typical destructive changes. CT radiographs showed that the tumor had no continuity with the lingual alveolar ridge and the same alveolar bone around the first and second molars was partially absorbed (Fig 4).

On September 11, 1996, he was admitted due to growing disturbance of eating caused by the painful mass. On the seventh day after admission, the mass was excised from the patient under general anesthesia, and the first and second molars were simultaneously extracted in order to remove the absorbed

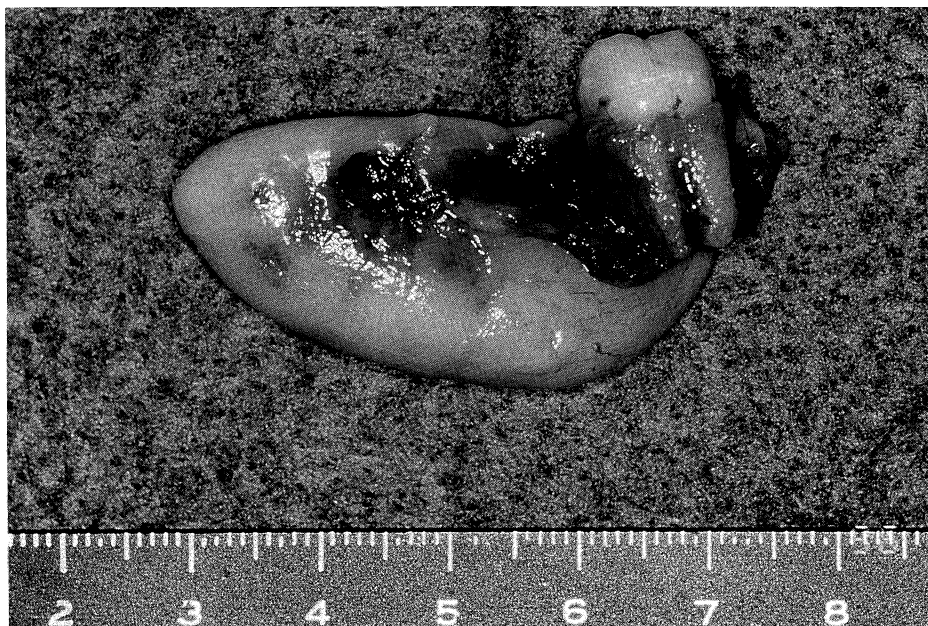


Fig 2. Surgical specimen presenting the lateral aspect of the osteoma

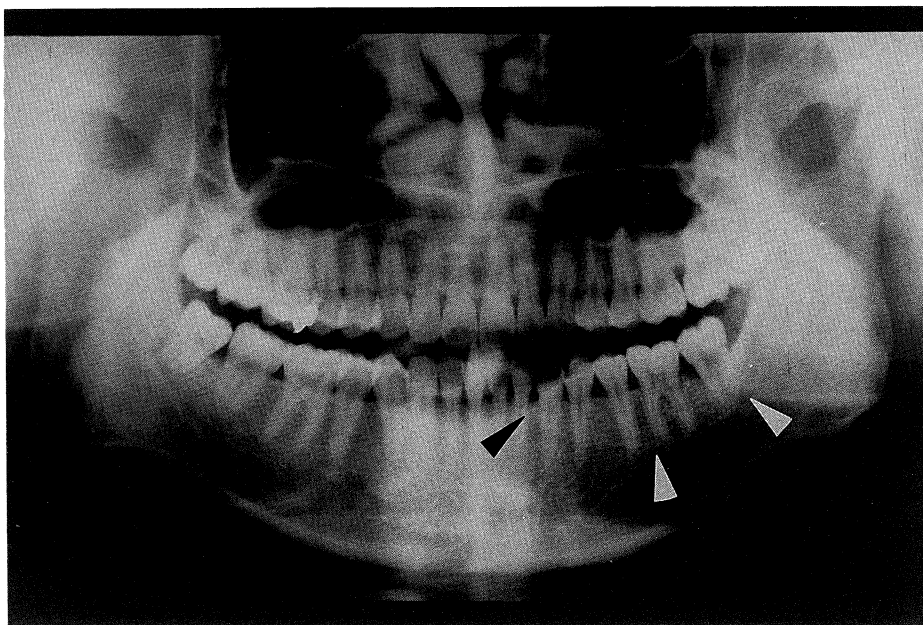


Fig 3. Panoramic radiograph showing an ovoid lesion overlying the left premolars and the molars of the mandible.



Fig 4. CT scanning showing absorption of adjacent alveolar bone, the high density mass was separated from the alveolar bone.

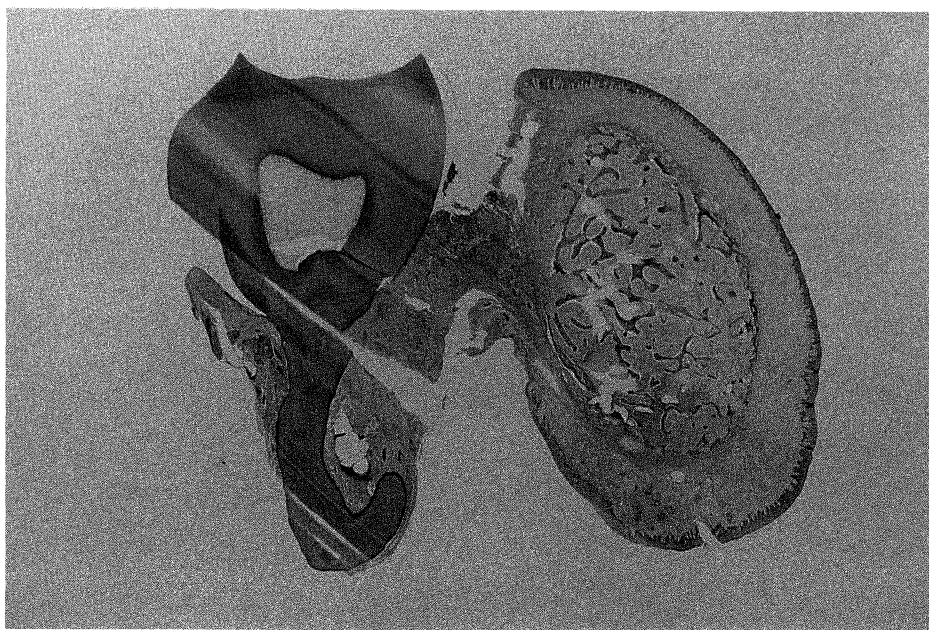


Fig 5. Grossly, a epulis-like mass was connected with the periodontal tissue of the second molar. (H&E  $\times 1$ )



Fig 6A. The mass consisted of lamellar bone. In the interlamellar space, no fat tissue but loose fibrous tissue with many dilated capillaries was seen. (H&E  $\times 60$ )

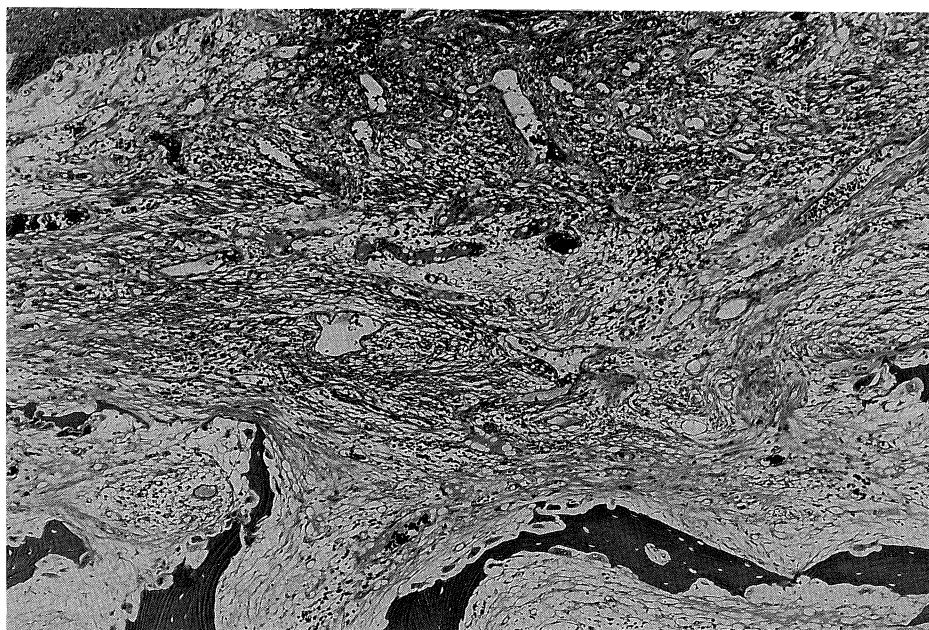


Fig 6B. Acute inflammation was seen in the periodontal tissue of the second molar region. Lamellar bone was absorbed by osteoclast-like cells. (H&E  $\times 60$ )

lingual alveolar bone for radical resection of the mass.

Macroscopically, a epulis-like mass, in which there was a distinct pattern of compact or ivory osteoma, was connected with the periodontal tissue of the second molar (Fig 5). Dense lamellar bone with no medullary component was seen microscopically (Fig 6A). Partially acute and partially chronic inflammation was seen in the periodontium of the second molar region (Fig 6B). The stroma consisted of loose fibrous tissue with inflammatory infiltrates.

Postoperatively, there were few problems and he was discharged about two weeks later.

### DISCUSSION

Osteomas are bony, oval or hard lumps with a smooth surface, and in their growth they may be attached to the bone by a broad base or a slender stalk.<sup>12)</sup> Soft tissue osteomas of the oral cavity, on the other hand, occur almost exclusively in the tongue, although in occasional cases they have been found in the buccal mucosa. Thoma<sup>13)</sup> is of the opinion that the tumor is found more frequently as a peripheral lesion than as a central lesion. Histopathologically, this case was compatible with an osteoma from the point of tumorous bone formation, but there was no continuity with the cortical bone, although well-demarcated remarkable formation of lamellar bone was seen without marrow tissue in the fibrous tissue. It did not seem to be compatible with any ordinary type of osteoma.

The osteoma in our case was located in the tooth-bearing area of the jaws and its clinical appearance was consistent with an epulis with no apparent bony stalk. Incidentally, the term "epulis" is described as a clinical term rather than a pathological one for a benign localized mass of the gum. The origin of epulides as neoplastic or reactive is controversial, and among oral pathologists and clinicians, the definition and the classification of epulides has been under discussion. From histology alone, it might be difficult to clearly distinguish epulis-like lesions from others. The case reported by Fletcher, which was palpated as a stony-hard swelling, was a fibrosarcomatous epulis<sup>14)</sup> in the region of the lower left premolars. The histological diagnosis of the epulis was peripheral fibrosarcoma, and because of the rarity of the condition it was reported. Our case was similar to the previous case<sup>14)</sup> in condition. Bernick stated that in his survey of 864 growths of the gingiva and the palate malignant tumors constituted 1.2 per cent of all gingival growths.<sup>15)</sup> Attention should therefore be paid that metastatic tumors from other organs to the gingiva which have been reported as epulis-like conditions.<sup>16,17)</sup>

Use of the term "epulis" is convenient for explaining the clinical feature of our case. We propose that histologically this case might be diagnosed as a peripheral osteoma in a broader sense, but it should be considerable as an epulis osteomatosa with regard to growth pattern and clinical condition. However, in this case, whether the growth was a peripheral osteoma, a soft tissue osteoma or an epulis osteomatosa, it is rare.

Symptomatic lesions with such symptoms as facial asymmetry, oral dysfunction and pain has consisted of surgical removal, whereas the treatment of asymptomatic lesions have required no therapy.<sup>18,19)</sup> The osteoma in this case with complaints of contact pain and swallowing pain was surgically



removed. The prognosis was good because no recurrence was seen after surgical removal. As far as we could determine from a search through the literature, the present case is a rare condition.

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