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Case Report

Epidermoid Carcinoma Originating from the Gingival Sulcus

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This paper describes a case of epidermoid carcinoma originating from the gingival sulcular epithelium with proper plane of histopathology. Relevant articles on carcinoma of gingiva are briefly reviewed, and the necessity for early diagnosis of this lesion is emphasised.
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INTRODUCTION

EPIDERMOID CARCINOMA of the gingiva constitutes 4–16% of all oral cancers. It occurs with greater frequency in the mandible and affects men considerably more often than women [1]. The lesion can be recognised early because it is accessible to visual inspection, and may become traumatised by tooth-brushing and by other masticatory irritants. However, the similarity of early cancerous lesions of the gingiva to common dental infections has often led to delay in diagnosis or even to misdiagnosis [2]. Early diagnosis is essential for the most favourable prognosis.

In reviewing the literature, a few case reports of early cancerous lesions of the gingiva have been cited [3–7]. However, there are no available illustrations that show a pertinent relationship between the tumour and adjacent dento-gingival structures. The present report offers an additional case of epidermoid carcinoma of the gingiva, with the plane of histological section, showing origination from the gingival sulcular epithelium.

CASE REPORT

A 68-year-old Japanese woman was referred with swelling and pain of the buccal gingiva of the left mandibular second molar area (Fig. 1). The lesion had been noticed for about 2 weeks as a rough-surfaced and slightly elevated gingival mass (0.6 × 1.2 cm). The adjacent second molar tooth was mobile, and the first molar tooth was missing. The marginal gingiva was normal in colour, but was prone to bleeding when probed. Dental radiographs revealed a slight loss of alveolar cortical bone at the mesial portion (Fig. 2), but no apparent bone erosion was otherwise noted. Regional lymph nodes were not enlarged, and the remainder of the physical examination findings were negative.

Microscopical examination of the initial biopsy material, taken from the second molar area, disclosed a mucosal wedge

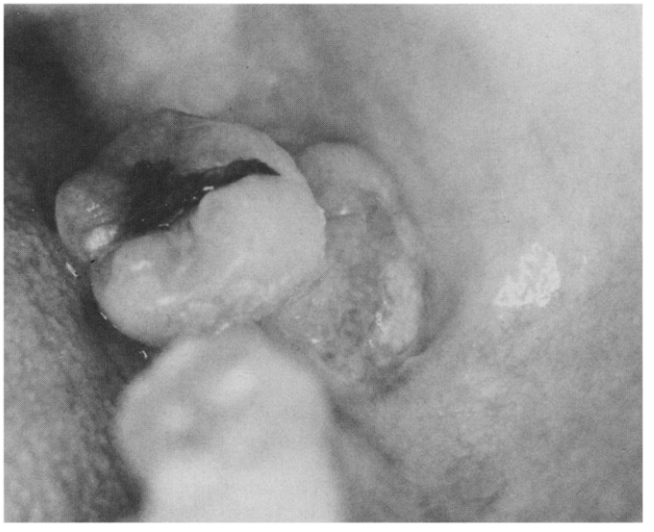

Fig. 1. Intraoral photograph showing the rough-surfaced tumour mass situated at the buccal marginal gingiva of the left mandibular second molar.

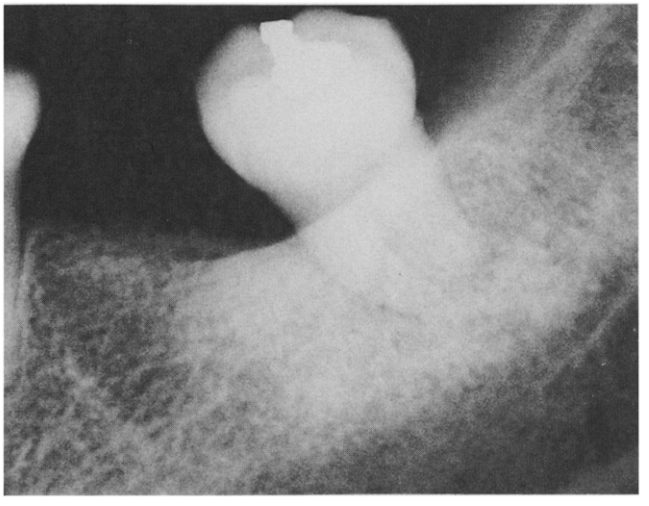

Fig. 2. Preoperative radiograph showing a slight erosion of the cortical alveolar bone at the mesial region, but otherwise no bony destruction can be seen.

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that exhibited foci of basal cell dysplasia with areas of epidermoid carcinoma appearing to originate from the crevicular epithelium. After obtaining the diagnosis of an epidermoid carcinoma, a segmental mandibulectomy including a healthy surgical margin with underlying alveolar bone was carried out.

The gross specimen consisted of a segment of the mandible including the second molar tooth. The alveolar mucosa and bone, except for the mass situated on the buccal side of the marginal gingiva, appeared normal on gross inspection. Multiple microscopic (cross) sections from the body of the mandible revealed an apparently pedunculated mass arising from the inner sulcular gingival mucosa with development of well-differentiated squamous cell carcinoma (Fig. 3). The extensive neoplastic epithelium was in contact with the crevicular surface, and appeared to be arising from it. The underlying alveolar bone appeared to be normal. Immunoperoxidase investigations with carcinoembryonic antigen (CEA) (Fig. 4a) and cytokeratin (Fig. 4b) demonstrated the neoplastic and well-differentiated nature of the sulcular epithelium.

The postoperative course was uneventful. Five years after the operation, the patient was well, with no evidence of recurrence or metastasis of the tumour.

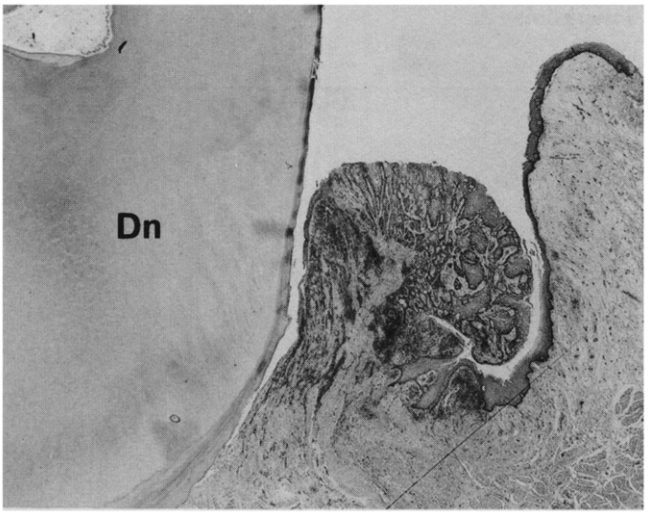

Fig. 3. Low-power photomicrograph of cross section of the specimen after segmental mandibulectomy. The tumour presents as a pedunculated mass that is apparently originating from the sulcular epithelium. The other areas of gingiva and periodontal ligament around the tooth (Dn) appear normal (haematoxylin and eosin × 5).

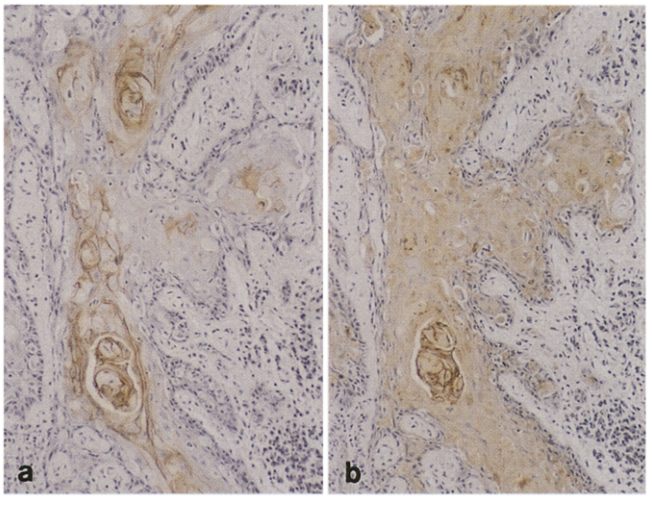

Fig. 4. (a) Immunohistochemistry of CEA. The antibody immunolabelling is seen at plasma membrane of the carcinoma cells (×25). (b) Immunohistochemistry of cytokeratin demonstrating a well-differentiated nature of the carcinoma cells (×25).

DISCUSSION

Carcinoma of the gingiva is not infrequently seen by oral and maxillofacial surgeons. In a series of 347 squamous cell carcinomas of the gingiva reported by Soo *et al.* [8], more than three-quarters of the lesions involved the lower gingiva. They found that about 80% of primary tumours in 310 previously untreated patients were staged as T_1 or T_2, with a 77% 5-year survival rate with stage I and stage II patients. In early stages, the lesion often closely simulates advanced periodontitis [3] and may be found accidentally after extraction of a tooth [9]. In the latter context, one-third of the patients with gingival cancer seen first by a dentist had extraction of teeth as the initial treatment [10]. It must be pointed out that clinically (or even microscopically), inflammatory and neoplastic changes in the gingiva may be confused and an incorrect diagnosis made [11].

A number of factors play a determining role in the prognosis of gingival carcinomas: size and site of the tumour, the nature of bony involvement, the presence or absence of metastasis, and stage of the disease [1]. Our case presented here is not an uncommon disease, and disclosed conventional histology of epidermoid carcinoma, as seen elsewhere in the literature. However, this case serves to demonstrate the importance of early diagnosis of the disease, in order to provide the patient with the most conservative treatment and the best prognosis. X-rays did not conclusively reveal evidence that the cancer had invaded bone. However, it should be noted that the absence of detectable roentogenographic changes does not completely exclude the possibility of bony invasion [1]. Therefore, as suggested by Heller *et al.* [7], histological examination of all dental tissues may be beneficial, and provide the opportunity for early diagnosis of gingival cancer.

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