A nonhealing ulcer of mandibular alveolar ridge

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CASE PRESENTATION

A 60-year-old man presented to the oral and maxillofacial surgery clinic at the Pt. B. D. Sharma Institute of Health Sciences, Rohtak, with a chief complaint of painful ulceration in the oral cavity for the past 2 months. A private practitioner extracted his mandibular left posterior teeth ~3 months previously. According to the patient, the extraction wound did not heal even after 3 weeks, and apparently it had been slowly increasing in severity during this period. The patient was then referred to our oral and maxillofacial surgery clinic.

At the initial examination, the patient presented with an ulcerated lesion with indurated rolled margins extending anteroposteriorly from the left mandibular canine region to the first molar region on the crest of the alveolar ridge and laterally, involving the buccal vestibule along its length (Figure 1). The lesion was painful on palpation and was covered with a yellowish pseudomembrane. No cervical lymphadenopathy was noted. The patient was concerned that the lesion in his mouth might be related to a malignancy.

His medical history revealed that he had poorly controlled diabetes treated with insulin injection. He had been treated by the Department of General Medicine with prednisolone (wysolone) 7.5 mg for ~8 months for the treatment of sarcoidosis. The patient did not report dyspnea, cough, nausea, or abnormal bowel movements, although he did report a several-month history of evening rise of body temperature, loss of appetite, increased fatigue, and mild generalized malaise.

Physical examination revealed a thin frail patient with mild hepatosplenomegaly, no associated abdominal tenderness, and no cardiac or respiratory problems. He was seronegative for HIV, HBV, HCV, and tuberculosis.

The laboratory investigations revealed raised angiotensin-converting enzyme (156 U/L), blood glucose levels both fasting (134 mg/dL) and postprandial (288 mg/dL), and glycosylated hemoglobin (8.3%). The complete hemogram and blood biochemistry were within normal ranges. Contrast-enhanced computerized tomography (CECT) for chest and abdomen revealed evidence of mild hepatosplenomegaly, but no evidence of lymphadenopathy. An orthopantomogram revealed bone loss in the region of the mandibular left first and second premolars.

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DIFFERENTIAL DIAGNOSIS

The initial evaluation of this patient involved a detailed history and physical examination, along with examination of appropriate laboratory and radiographic studies. All of these data aided in the compilation of the differential diagnosis, which included squamous cell carcinoma, Wegener granulomatosis, tuberculosis, oral sarcoidosis, syphilis, mucormycosis, and histoplasmosis.

Squamous cell carcinoma

Squamous cell carcinoma of the mucosa of the alveolar ridge can be a potential diagnosis for this patient as presented. Carcinoma of the alveolar ridge usually manifests as a nonhealing ulcerative lesion of alveolar ridge with rolled margins, is usually painless unless secondarily infected, and shows destruction of underlying bone, with defined or irregular margins.[1] Lymphadenopathy is found at later stages of oral disease. Both the clinical and radiographic presentations in the present case were consistent with squamous cell carcinoma.

Wegener granulomatosis

Wegener granulomatosis is a rare chronic disease of unknown origin, although an immunologic mechanism may be involved. Pulmonary and renal involvement are the most common and most severe manifestations of the disease. Oral lesions are fairly common, and they may appear as solitary or multiple ulcers surrounded by an inflammatory zone. Tongue, palate, and buccal mucosa are commonly affected and rarely, an early feature of the disease may be a peculiar gingival enlargement with a rough, red, papillary, and granulomatous surface. Skin lesions occur in half of the patients and are characterized by papules, petechiae, plaques, and ulcers. The diagnosis is confirmed by clinical features, radiographic features, biopsy, and serum investigation for antineutrophil cytoplasmic antibody (ANCA).[2] The painful ulcerative lesion of our patient prompted us to include this condition in the differential diagnosis; however, the typical clinical presentation was absent in our case. Negative serum investigations for c-ANCA and p-ANCA effectively ruled out the condition.

Tuberculosis

Oral tuberculous lesions may be either primary or secondary in occurrence. Primary lesions are uncommon,

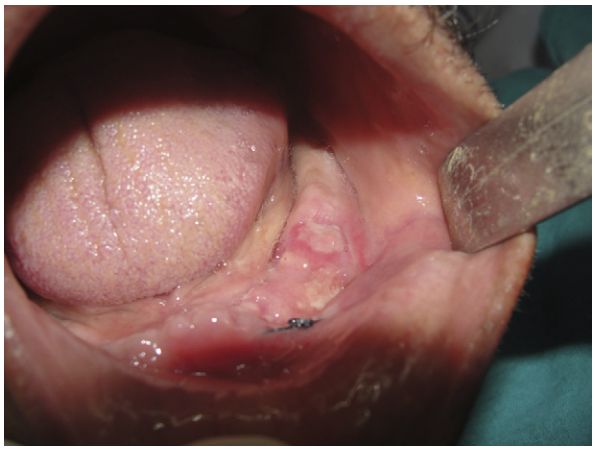

Fig. 1. Clinical photograph of the patient, showing the ulcerative lesion of left mandibular alveolar ridge. There was attempted surgical exploration by a private practitioner, as indicated by a suture at the anterior margin of the lesion.

seen in younger patients, and present as a single painless ulcer with regional lymph node enlargement. Secondary lesions are common, often associated with pulmonary disease, and usually present as a single, indurated, irregular, painful ulcer covered by inflammatory exudate in patients of any age group, but relatively more commonly in middle-aged and elderly patients.[3] Oral tuberculosis may occur at any location on the oral mucous membrane, but the tongue is most commonly affected. Oral lesions may present in a variety of forms, such as ulcers, nodules, tuberculomas, and periapical granulomas. The typical presentation is that of a single indurated painful ulcer with irregular borders covered by inflammatory exudates; however, atypical cases with multiple lesions or asymptomatic ulcers have also been described.[1] The identification of a tuberculous lesion in any location in the mouth is an unusual finding, and its discovery is usually indicative of underlying pulmonary disease. In the present patient, an indurated painful ulcer with irregular borders, covered with necrotic slough, pointed toward a tuberculous lesion, but the absence of a primary site of the disease made it less likely.

Oral sarcoidosis

Sarcoidosis is a systemic disease of unknown etiology that may affect any organ and can cause significant morbidity and even death. Clinically evident oral manifestations in sarcoidosis are uncommon, if salivary gland and lymph node involvement are excluded. The most frequently affected intraoral site is the buccal mucosa, followed by gingiva, lips, floor of mouth, tongue, and palate. If oral lesions are present, they manifest as a submucosal mass, an isolated papule, an area of granularity, or an ulceration. The diagnosis is established by the clinical and radiographic presentations, histologic features, and the presence of negative findings with both special stains and cultures for organisms. Elevated angiotensin-converting enzyme levels and appropriate documentation of pulmonary involvement strongly support the diagnosis.[4] Because our patient had a diagnosed case of systemic sarcoidosis, there was high suspicion that the oral lesion represented an oral manifestation of oral sarcoidosis.

Syphilis

Syphilis is a worldwide chronic infection produced by the bacterium *Treponema pallidum*. The oral lesion in primary syphilis presents as a painless clean-based ulcer (chancre) or, rarely, as a vascular proliferation resembling a pyogenic granuloma, more commonly occurring on the lips. The clinical features and location make primary syphilis unlikely in our patient. In secondary syphilis, red maculopapular areas may be found orally, with subsequent superficial epithelial necrosis leading to sloughing and exposure of underlying connective tissue. However, this is also associated with systemic symptoms such as malaise, painless lymphadenopathy, sore throat, headache, weight loss, and musculoskeletal pain.[4] These features were not noted in our patient. The tertiary stage, with oral gumma formation and possible perforation into the nasal cavity, along with other systemic problems, was considered to be less likely in our patient.

Mucormycosis (zygomycosis)

Mucormycosis is an opportunistic, frequently fulminant, fungal infection that is caused by normally saprophytic organisms of class Zygomycetes. Rhinocerebral mucormycosis is the most common form, and it typically involves the nose and sinuses.[5] If the maxillary sinus is involved, the initial presentation may be seen as intraoral swelling of the maxillary alveolar process, the palate, or both. Massive tissue destruction may result if the condition is not treated. Radiographically, opacification of maxillary sinuses may be observed in conjugation with patchy effacement of the bony wall of the sinuses. The immune-compromised state of our patient due to long-term steroids and diabetes may have predisposed him to mucormycosis. However, the site of lesion makes it less likely, because mandibular involvement is rare.

Histoplasmosis

Histoplasmosis, the most common systemic fungal infection in the USA but rare in India, is caused by the organism *Histoplasma capsulatum*. Histoplasmosis is clinically classified as a primary acute pulmonary form that is usually asymptomatic, a chronic pulmonary form