Idiopathic osteonecrosis of the mandible in a 49 healthy male patient: A rare and interesting case report

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AIM

Osteonecrosis of the jaw (ONJ) is identified as 'non-healing exposed necrotic bone in the maxillofacial region'. In the past years ONJ has received much diffusion in the dental literature owing to its induction via various identified medications (e.g. bisphosphonates). There remain other causes but these are uncommon; various local or systemic phenomena may take part in ONJ pathogenesis: trauma (e.g. physical), infections (e.g. bacteria), neoplasia (e.g. bone tumours), nutritional (e.g. malnutrition), vascular (e.g. ischaemia), immunological (e.g. hypersensitivity reaction), genetic (e.g. Gaucher disease), metabolic (e.g. altered lipid metabolism), endocrine (e.g. long-term steroid use), periodontal disease (e.g. gingivitis), drugs (e.g. bisphosphonates), radiation, cocaine abuse, iatrogenic, idiopathic[1]. Mucosa covering the lingual cortex of mandible is thin and vulnerable to trauma, particularly the posterior supra mylohyoid region. Injury to this region may lead to full thickness ulceration and subsequent exposure of the cortical bone. Furthermore, prominent mylohyoid ridge or mandibular tori place this area at a high risk of traumatic ulceration[2]. The exposed lingual bone invariably endures ischemic necrosis and possibly sequestration. In addition, poor vascularization of this anatomical site prolongs the healing process from a week to several months[3]. The aim of this paper is to report a spontaneous case of osteonecrosis of the mandible with idiopathic origin in a healthy male patient.

MATERIALS AND METHODS

A 49-year-old healthy man, with no relevant medical and social history, was referred to our sector of Oral Medicine (University Hospital "Policlinico Paolo Giaccone" Palermo, Italy) with a chief complaint of one-year non-healing exposed bone in the left mandible. The lesion was asymptomatic and it was firstly noticed by the dentist during a follow up appointment. Extra-oral examination revealed no swelling, tenderness or regional lymphadenopathy. Intraoral examination revealed lingual mucosa ulceration of about 1 cm in diameter with cortical yellowish bone above mylohyoid ridge in the left side of the mandible. The lesion was close to tooth 36, above a mandibular tori; tooth 35 was absent due to a previous extraction. Computerized tomography showed three adjacent exophytic bone lesions that were consistent with the diagnosis of mandibular tori. After obtaining consent from the patient, mandibular nerve block anesthesia was performed and the lingual necrotic bone was removed by a piezosurgery device down to the vascularized bone layer. Bone fragments and spikes were eliminated to obtain a smooth surface in order to avoid local traumatisms and to facilitate soft tissue healing over the surgical site. Tooth 36 was extracted; the surgical sites were abundantly rinsed with Rifampicin. Wound closure was obtained by a tension-free mucosal flap sitting passively over the bone with silk suture. All surgical specimens underwent histopathological examination. In the postoperative period non-steroid anti-inflammatory drugs, chlorhexidine and gel made by a combination of amino-acids and sodium hyaluronate three times a day, were recommended. Prophylactic antibiotics were administered for 7 days from the day of surgery. The sutures were removed 7 days after surgery.

RESULTS

The histological examination showed a non-specific inflammation with no evidence of malignancy. There were no signs of local or systemic infection to indicate osteomyelitis. A diagnosis of ischemic osteonecrosis of the mandible of unknown cause was made by exclusion. Patient underwent a follow up visit 3 months after the surgery and the lesion was completely healed.

DISCUSSION

Traditionally, ONJ has been usually correlated with radiotherapy due to head and neck malignancies and biphosphonate intake either for treatment of malignant diseases or osteoporosis. Usually, factors that lead to ONJ are known, however, there have been some case reports in the literature where no known factors for the ONJ onset could be identified. Necrosis of the mandible is rare even though mandible is prone to trauma and infections. Symptoms are not specific because lingual mucosal ulceration and associated osteonecrosis are presented clinically with absent to moderate symptoms; imaging is contributive late in its evolution. There might be an iatrogenic cause, nevertheless, in many cases there is no obvious attributable factor, making the etiology and the diagnosis quite challenging. In the absence of clear sequestration, removal of the necrotic surface layer provides better and quicker healing environment. In the present case, the presence of mandibular tori represents an additional anatomic risk factor in the pathogenesis of ONJ other than the presence of a thin and vulnerable mucosa covering the lingual cortex of mandible. The periodic health examination by general dentist is a really important primary prevention tool: healthy patients with anatomical risk factors must be aware that in the future they can be more vulnerable to ONJ if other risk factors will show up.

Keywords: osteonecrosis, bone disease, ONJ, cortical necrosis, mandiblar bone

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