An etiological dilemma in osteomyelitis: A case report

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ABSTRACT

Osteomyelitis is an acute or chronic inflammatory process that can involve cortical and trabecular aspects of bone or bone marrow. This case report describes an interesting presentation of chronic suppurative osteomyelitis in a 22-year-old male patient who visited the dental clinic with a chief complaint of facial asymmetry and esthetic concern only. The history, examination, radiographic and histopathological investigations contributed to the diagnosis of chronic suppurative osteomyelitis; however, the etiology remained a dilemma. Treatment included surgical debridement and curettage followed by antibiotics.

Key words: Etiology, facial asymmetry, osteomyelitis, suppuration

Introduction

Osteomyelitis is an inflammation of bone and bone marrow that develops in the jaws usually after a chronic infection.[1] The primary cause of chronic suppurative osteomyelitis (CSO) of the jaws is infection due to odontogenic microorganisms.[2] It may also arise as a complication of dental extractions and surgery, maxillofacial trauma, and the subsequent inadequate treatment of a fracture.[3,4] CSO must be present for at least 1 month before it is termed “chronic,” as this suggests that the disease is refractory to the host defenses or to initial therapy — usually oral antibiotics (as in this case).[5,6]

Case Report

A 22-year-old male patient reported to the dental OPD with a chief complaint of swelling in the right posterior region of lower jaw since 1½ months. Patient gave a history of pustule in the same region 2 months back. He scratched the pustule, which resulted in its increased size and pus discharge. Following this, incision and drainage was done by a physician. One week later, he noticed a swelling over the specific region. There was gradual increase in the size of swelling that caused facial asymmetry. No limitation of mouth opening, paresthesia of the right lower lip and submental area, pain, pressure sensation, difficulty in eating and swallowing was reported. This was his first dental visit. His medical history and family history were non-contributory. The patient also gave a negative history of trauma.

On general physical examination, he was conscious and co-operative, moderately built and nourished, conscious and co-operative, moderately built and nourished,
and well oriented in time, place, and person. All his vital signs were within the normal limits. There were no signs of pallor, icterus, cyanosis, clubbing, and edema. On extraoral examination, a solitary, diffuse, oval-shaped swelling, measuring approximately 4 × 3 cm in size was visible at the angle of mandible on the right side. Swelling extended anteriorly 2 cm anterior and posteriorly 2 cm posterior to the angle of the mandible. It extended from the ala-tragal line superiorly to 2 mm below the lower border and the angle of mandible inferiorly. Skin over the swelling and surrounding area appeared to be normal in color and texture, without any signs of ulceration, ecchymosis, pus, or blood discharge, except for the scar. On palpation, the swelling was non-tender and bony hard in consistency, with diffuse borders. There was a local rise in temperature over the swelling. The swelling was fixed to underlying bone. The overlying skin was pinchable. Fluctuance, reducibility, compressibility, and pulsatility were absent. Right submandibular lymph nodes were palpable, non-tender, and mobile [Figure 1]. Intraoral hard tissue examination revealed occlusal caries seen in relation to 46, 47. The dental caries was not deep enough to cause pulpitis. No buccal vestibular obliteration, sinus, pus, or blood discharge was found [Figure 2]. The oral hygiene index according to Green and Vermillion was poor. The vitality test proved to be positive.

Based on history and clinical examination, CSO in the right side of mandible, dental caries in relation to 46, 47, and chronic generalized gingivitis were given as the provisional diagnosis. The differential diagnosis considered were Garre’s sclerosing osteomyelitis, infected odontogenic cyst, and metastatic carcinoma of the angle of mandible, as the swelling was non-tender and bony hard in consistency, with diffuse borders and fixed to underlying structure. But at the same time, findings such as, young age of the patient, slow growth of the swelling, and absence of paresthesia, deep dental caries, mobility of associated teeth and any pathological fracture, were not in favour of these differential diagnoses. In the radiographic investigations, panoramic radiograph revealed diffuse, oval-shaped radiopacity extending from the distal aspect of 48 along the angle and anterior border of ramus to 1 mm below the sigmoid notch, suggestive of new bone formation. The inferior border of mandible remained intact [Figure 3]. Coronal and axial sections of computed tomography revealed sclerosis of right ramus with minimal cortical irregularity and thickening. Diffuse periosteal calcification extended from the neck of condylar process to the angle on the right side of the mandible, more on the buccal aspect, along with linear lytic tracts suggestive of chronic osteomyelitis [Figures 4 and 5]. Treatment plan included surgical debridement and curettage followed by antibiotics, restoration of decayed teeth, and full mouth oral prophylaxis. Surgical debridement and curettage was done under general anesthesia and the specimens sent for histopathological examination. Sections from the body piece of tissue showed thinned out bony trabeculae surrounded by sinusoidal spaces, few scattered inflammatory cells in the form of neutrophils and macrophages, and areas of fibrosis. Sections from the sinus tract showed skin with deeper connective tissue showing areas of necrosis surrounded by dense acute or chronic inflammatory infiltrate in the form of neutrophils, lymphocytes, and macrophages and thin-walled congested capillaries. Sections from granulation tissue showed bits of necrotic bone tissue and adjacent connective tissue showing large areas of necrosis and dense inflammatory infiltrate in the form of neutrophils, lymphocytes, plasma cells, and macrophages. A final diagnosis of CSO on the right side of mandible was given. On review and recall after 1 month of surgery, the patient reported with no symptoms.

Figure 1: Extraoral view showing right side of the face
Figure 2: Intraoral view showing 46, 47 region
Discussion

This case report demonstrates the typical features of CSO which is a well-described potential complication of chronic odontogenic infections that dentists may encounter frequently. However, this case did not show the usual infection of teeth or any history of past trauma. Peravali et al. in a retrospective analysis carried out in Indian population from 2002 to 2008 on 31 patients who were diagnosed with osteomyelitis of jaws, found that majority of the patients had a definite odontogenic component (74%) as the source of infection. This was followed by maxillary sinusitis (16%) and trauma (6.4%) as the etiological factors. One patient reported with osteomyelitis of the mandible post radiotherapy, with the cause being a non-healed extracted socket prior to radiotherapy. Only one case with a fistula in the roof of the mouth was reported under unknown etiology in their results. Similarly, in this case too, the etiology remained unknown. A unique aspect of this case report is that neither the patient’s history nor the examination contributed to the identification of such foci of infection. Although a possible foci of infection could be an earlier episode of pericoronitis in 48, which however was clinically not evident at the time of examination. Twenty-two out of 31 (70.9%) patients had predisposing associated medical problems as well in Peravali et al.’s study. However, in the present case, no associated medical problems were present.

Conclusion

Although this case was managed successfully, it did not solve the esthetic concern of the patient. Further, there was adequate clinical follow-up to ensure that there was no recurrence of the infection. However, the dilemma persisting behind this case report is the etiological factor which contributed to the extensive inflammation of bone, without any history of contributing factors or signs and symptoms in the clinical examination, in an otherwise healthy individual.

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Conflicts of interest
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References

