Occupational Nonspecific Granulomatous Osteomyelitis of Third Metacarpal Bone as a Sequel to Percutaneous Injury on Left Hand Due to Sharp Dental Bur: A Self Reported Case

Sir,

Dental professionals are prone to percutaneous injury secondary to handling needles and sharp instruments in dental practice. It was observed that the most percutaneous injuries were bur-related and there was no statistically significant difference between the dental unit design (European and the conventional dental units) with respect to the incidence of percutaneous injury. This letter addresses an occupational injury occurred in the life of a dental surgeon and stresses the importance of educating the dental surgeons during handling and sterilizing sharps in dental practice.

The author is a 38-year old male dental surgeon reported with a two-week history of pain and swelling in the dorsal aspect of the left hand (Figure 1). Three months back, the author had a pinpoint percutaneous injury on dorsal aspect of left hand while sterilizing a sharp used dental bur. Physical examination revealed signs of inflammation. The swelling over the third metacarpal was also tender. Investigations such as routine blood investigations, routine urine investigations, HIV test, HbsAg test and chest X-ray and the results were non-contributory. X-ray left hand AP (Figure 2) and lateral view revealed cortical erosion along the radial aspect of distal shaft of third metacarpal bone with mild periosteal reaction. Similar radiographic changes were also noted in plain CT scan of left hand. The possibility of osteomyelitis of the radial aspect of distal shaft of third metacarpal bone was considered on the basis of clinical findings. The lesion was surgically curetted and the specimen was subjected to histopathological examination and culture and sensitivity.

Culture and sensitivity showed false negative results. Microscopically the lesion showed fibrocollagenous tissue heavily infiltrated by lymphocytes, plasma cells, few eosinophils and occasional macrophages. Periphery of the lesion showed bony trabeculae separated by fibrocollagenous tissue with inflammatory cells. One area showed necrosis surrounded by inflammatory cells with small granuloma composed of macrophages. Based on the conventional microscopy a diagnosis of nonspecific granulomatous osteomyelitis was made. No recurrence of the lesion has been found till date.

The prevalence of occupational hazards among the dental professionals in India is recorded as needle prick injuries (49.5%) and sharp bur injuries (27.4%) as per comprehensive questionnaire survey. In the present case the nonspecific granulomatous osteomyelitis lesion is induced by the dentist's activity as a sequel to percutaneous injury.

Percutaneous injury is the second most common occupational health problems of dentists in the United Arab Emirates and the prevalent study among dentists in the United Arab Emirates emphasize the importance of continuing education in all clinical and research symposia to avoid percutaneous exposure. More recently, a case of percutaneous injury in a paediatric dentist by a contaminated instrument was reported. Therefore, the dental professionals should adapt the Occupational Safety and Health Administration (OSHA) and the Centers for Disease Control and Prevention (CDC) guidelines to prevent occupational injuries during dental practice.

REFERENCES


Thorakkal Shamim  
Department of Dentistry, Government Taluk Head Quarters Hospital, Malapparam - 676519, India.  
Correspondence: Dr. Thorakkal Shamim, “Shangrila”, Parappanangadi-676303, India.  
E-mail: shamu3duad@rediffmail.com  
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