



# Periodontal Management of Necrotic Bone Post Endodontic Procedure A Rare Case Report

*Dr. Priyanka Sharma, Pacific Dental College and Hospital, Udaipur, Rajasthan; Dr. Shailja VEDIYA, Pacific Dental College and Hospital, Udaipur, Rajasthan, Dr. Neema Shetty Professor and Head, Department of Periodontics, Pacific Dental College and Hospital, Udaipur, Rajasthan; Dr. Aditi Mathur Professor, Department of Periodontics, Pacific Dental College and Hospital, Udaipur, Rajasthan; Dr. Ashish Bali Senior Lecturer, Department of Periodontics, Pacific Dental College and Hospital, Udaipur, Rajasthan.*  
Corresponding Author: *Dr. Priyanka Sharma, Pacific Dental College and Hospital, Udaipur, Rajasthan*

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**ABSTRACT:** This case report is about periodontal management of necrotic bone post endodontic procedure. A case of alveolar bone necrosis with the cause unknown was seen. Patient had deep periodontal pocket and on radiographic analysis foreign body was found requiring surgical intervention. Histopathological analysis revealed necrotic bone. Bone regeneration was seen 8 month after the surgical intervention.

**KEYWORDS:** Alveolar bone necrosis, root canal treatment, pocket.

## I. INTRODUCTION

Recent classification of periodontal diseases has mentioned accidental, iatrogenic, and traumatic lesions. Iatrogenic trauma can be defined as, "Any trauma that has been induced by dentist's activity, manner, or therapy," usually used for an infection or other complications of treatment.<sup>1</sup>

During dental procedures, various chemical (such as endodontic materials, and retraction agents), instruments (i.e., rotary or vibrating handpieces, electrosurgical units, and lasers), and

## II. CASE REPORT

A 27-year old male patient reported to the department of periodontics at Pacific Dental College & Hospital Udaipur, and was referred from the Department of Prosthodontics for opinion and treatment regarding the presence of deep periodontal pocket distal to 16 and mesial to 17. Patient's past dental history revealed root canal treatment done irt 17 approximately 4 months back and was in the process of getting a crown placed.

On Intraoral examination a deep periodontal pocket of 6mm was found in relation to distal to 16 and mesial to 17. As a conservative approach curettage (Gracey universal curette) was done irt 16, 17 under local anaesthesia. After administration of local anaesthesia, curettage was

removable appliances (partial dentures and orthodontic appliances) come in close contact with oral cavity. Negligence while handling these chemicals or appliances may cause harm to the patient instead of benefit. Treatment of such cases depends upon the severity as well as extent of damage to the periodontal tissues. It also depends on how long the substance was in contact. Not much data is there as in how to manage these injuries. Although, in most cases, eliminating the offending agent along with symptomatic therapy are sufficient, but in severe cases where the damage has resulted in permanent defects formation, regenerative therapy as an adjunct to periodontal surgery would be the treatment of choice.

Not much literature is available regarding the damage caused due to these iatrogenic causes and how to manage them. This report presents a case where due to iatrogenic cause (accidental seepage of devitalizing agent or sodium hypochlorite into the interdental space) the necrosis of underlying bone occurred.

done irt tooth no. 16 and 17 using curette. Patient was recalled after 7 days for re-evaluation. On re-evaluation it was found that attachment of papilla was not there and pocket was still persisting. Radiographically radiolucency was seen in interdental region, bone was present apical to the defect and coronal to the defect, bone like structure was seen (fig.1).

Based on the clinical and radiographic findings periodontal flap surgery was planned. After administration of local anaesthesia, Crevicular incision was placed using no. 15 blade extending from distal papilla of 15 to mesial papilla of 18 on buccal and palatal side. Full thickness mucoperiosteal flap was elevated revealing good amount of granulation tissue in the



interdental area between 16 and 17. Once the granulation tissue was removed a yellowish grey bone like mass was seen that was wedged in the interdental area which was mobile (fig.2). This bone like mass (fig.3) was assumed to be necrotic bone and was sent for histopathological evaluation. After the removal of the bone like mass, an uneven horizontal defect was left behind, so instead of placing bone graft in the defect area fresh bleeding was induced into the defect area to jump start the regeneration process. Next, the flap was approximated back to its position and sutures were placed. Patient was recalled after 7 days for suture removal.

The histopathological examination (fig. 4) confirmed that the bone like mass was necrotic

### III. DISCUSSION

In spite of limited harm in dental practice, there is growing concern regarding the medico-legal problems amongst dental practitioners as more amount of population is being hyper aware of legal options as well as due to the influence from the internet. Other than known complications of periodontal treatments, unforeseen injury of oral tissues is caused due to trauma during or after procedure.

Although much relevant data for this particular case is not available, one such case report was presented by Sajjan et al<sup>2</sup> where the hard and soft tissue necrosis was seen due to improper handling of Sodium hypochlorite. The accidental seepage of NaOCl in soft tissue occurred during irrigation of the root canals. Since rubber dam was applied during the procedure, the seepage was unnoticed causing necrosis of gingiva and underlying bone. Patient was unaware of seepage of NaOCl solution probably due to anaesthesia.

In current case scenario since the carious lesion was present proximally and the root canal was already done, there is a possibility that the pulp devitalizing agent might have leached through the interdental spaces and caused the bone necrosis. Patient might have not been able to differentiate between the pain due to ongoing root canal

### IV. CONCLUSION

Dentists practice in a relatively small area by using potentially hazardous instruments and agents. Therefore, the skill, experience, and up-to-date knowledge of dentists are the main factors to prevent possible iatrogenic traumas. Although "To err is human," careful practice is very important for the principle "Primum non nocere" ("First do

no harm"). In the present case proper diagnosis and immediate treatment execution by surgical intervention helped in achieving a favourable outcome, with bone regeneration.

bone. On re-evaluation after 1-week satisfactory healing was found, sutures were removed. Periapical radiograph (fig. 5) was taken after suture removal to assess the defect left behind after the removal of the necrotic bone. Patient was referred to Department of Prosthodontics for crown fabrication irt 17 and was kept under Follow up. During 8 month follow up patient was asymptomatic; and favourable clinical and radiographic healing with a reduction in probing pocket depth from 8 mm (after removal of necrotic bone) to 5 mm was found. Radiographically Bone formation was evident in the interdental region between 16 and 17 when compared with the periapical radiograph taken 8 months' prior (fig. 6).

treatment. Hence it was unnoticed until a deep periodontal pocket was formed due to necrosis of bone and loss of attachment. However once the necrotic bone was removed and through debridement of the defect followed by inducing fresh bleeding in the defect area to jump start the regeneration was done, the bone showed good amount of bone regeneration at the end of 8 months.

Early studies observed that bone filling was possible with radicular scraping and planing treatment, followed by strict hygiene (Rosling).<sup>3</sup> These techniques are based on the principle that a biocompatible radicular surface and a strict hygiene control favour the development of the innate regenerative capacity of the periodontal tissue.

Prichard<sup>4</sup> was the first author to focus on the morphology of bone defect, and on the importance of its careful debridement. Numerous studies have used debridement techniques as a control against other regenerative therapies. In a study published by Lang et al<sup>5</sup>, an average increase of 1.78 mm in the clinical attachment level and 1.55 mm in bone filling was calculated, highlighting the effect on both parameters of following a strict protocol for professional control of postsurgical plaque.

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FIGURE 1

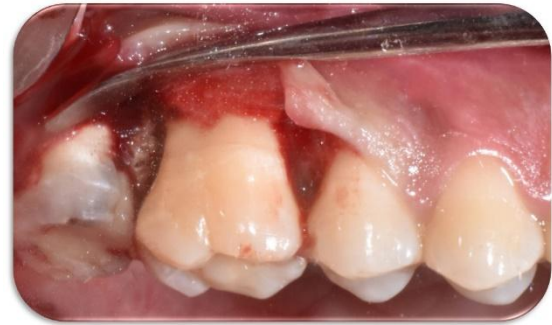


FIGURE 2

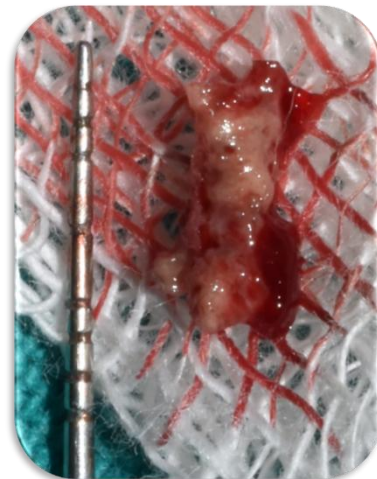


FIGURE 3



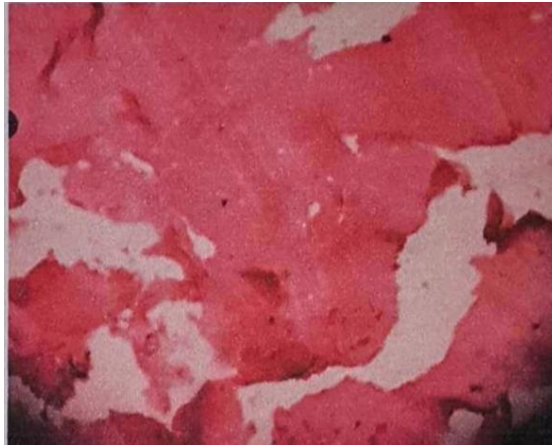


FIGURE 4



FIGURE 5



FIGURE 6