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Reconstructive surgical approach to arsenic trioxide related osteonecrosis of maxilla

Aysenur Uzun, Cakarar S, Can T and Keskin C
Istanbul University, Turkey

Objectives: The aim of the present case is to introduce the undesirable clinical results associated with the use of the arsenic trioxide which is a cytotoxic dental material.

Design: A 35-year-old woman referred to our department complaining of severe pain and gingival recession from her right maxillary lateral incisor. The history revealed that an arsenic devitalizing agent had been applied to the tooth pulp before root canal treatment, in a private dental office. On extraoral examination, there was a light swelling on the labial side. Intraorally, gingival recession, exposed bone and severe mobility were noted on the right first, second and third incisors. Radiographic examination demonstrated large destruction of bone surrounding the teeth. These symptoms leading to the clinical diagnosis of arsenic trioxide related osteonecrosis of the jaw. A 10-day course of oral amoxicillin+clavulanic acid (1 g preparation) and metronidazole (500mg preparation) was given. Analgesic drugs and chlorhexidine mouth rinsing solution were also prescribed. To debride the necrotic bony sequestra in the infected area and improve blood flow, the patient underwent 45 sessions of hyperbaric oxygen therapy. Then, sequestrectomy was performed under general anesthesia and the teeth were extracted. The reconstruction of the defect was provided by autogenous grafts which were harvested from the mandibular symphysis and retromolar area. The surgical site was closed primarily.

Main Results: The patient was symptom-free at five-month recall. Eight months after the bone augmentation, according to the three dimensional radiological examination of the defect, three dental implants (Straumann® Bone Level; BL) were placed and 4 months later, a definitive implant supported fixed prosthesis was applied.

Conclusions: The management of the alveolar necrosis associated with the trioxide arsenic is a challenge regarding to maintain esthetic reconstruction of the hard and soft tissue. Therefore it should be kept in mind that this material has no more places to use in the modern dental practice.

Biography

Uzun A was educated in dentistry at Istanbul University, Turkey and obtained bachelor of dentistry degree in 2012. She presently is a PhD candidate at oral and maxillofacial surgery at the same University. She has attended several international congress and courses, additionally authored numerous scientific lectures and poster publications. She keeps on her researches about oral surgical procedures, dental implants, cysts, tumours, orthognatic surgery and maxillofacial fractures. She is a member of Turkish Association of Oral and Maxillofacial Surgeons, European Association for Cranio-Maxillo-Facial Surgery and European Dental Students Association.