

A Unique Bone Osteotome Technique for Extraction of Palatally Inclined Maxillary Impacted Tooth: A Technical Note

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Abstract

Background: There have been reported about impacted tooth[1,2,3], but a very few literature about extraction technique using bone osteotomy. Bone osteotome is routinely used in various oral surgeries. We describe a technique of a unique bone osteotome technique for extraction of palatally inclined maxillary impacted tooth.

Methods: We occasionally encounter the patient with tooth crown of impacted tooth inclined from the buccal site toward the palatal site. When the use of an elevator and forceps is difficult due to the palatal tilted and interference of neighboring teeth, tooth extraction is a challenge. Using this osteotome from the buccal site causes the canine to easily rise out of the socket in the palatal direction.

Results and Conclusion: This bone osteotome technique for extraction of palatally inclined maxillary impacted tooth was very useful and convenient. This is because the impacted canine can be removed with a bone osteotome, a minimally invasive surgical instrument. No appreciable disadvantages are noted with this bone osteotomy.

Keywords: Unerupted Tooth; Impacted Canine; Supernumerary Teeth

Background

Bone osteotome is a simple and practical instrument used in maxillofacial, plastic, and orthopaedic surgery to minimize bone separation and remove the bone. It is widely used in clinics and hospitals. Therefore, dental professionals are familiar with its use. Especially, the tip of a bone osteotome used for haemostasis has an uneven and square surface to crush the bone and stop bleeding during intraoperative oozing from bone surface (Figure 1). If this specific bone osteotome for haemostasis is unavailable, a routine bone osteotome can be used. The aim of this article is to introduce a unique bone osteotome technique for extraction of palatally inclined maxillary impacted tooth.

Methods

Impacted canine inclines from the buccal to the palatal site (Figure 2). After induction of local anaesthesia, an incision is made along the cervical line of the palatal site from the central incisor to the first premolar. The palatal flap is raised to reveal a completely imbedded canine, which necessitates bone removal to expose it. First, a tooth extraction was attempted from the palatal site with an elevator instrument. When this approach failed,

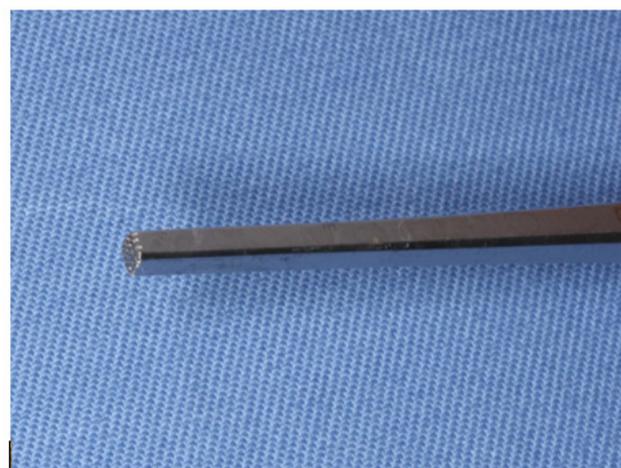


Figure 1: The tip of bone osteotome.

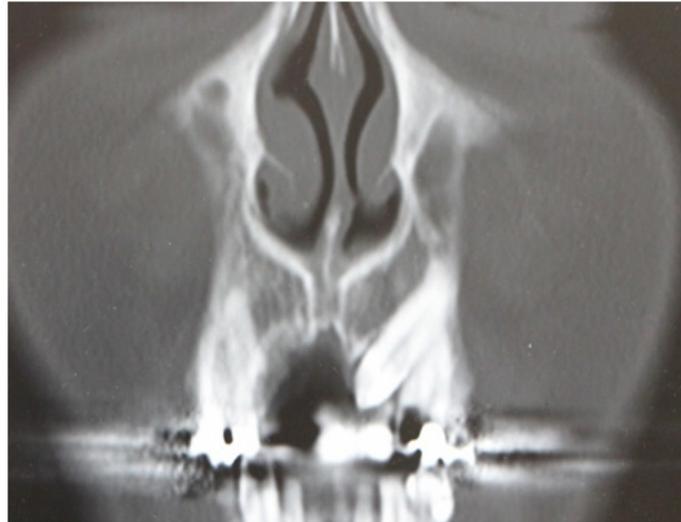


Figure 2: Computed tomography image reveals a lingually inclining maxillary impacted canine.

the buccal gingiva was incised and the mucoperiosteum was elevated to expose the tip of the canine root. Thereafter, the bone osteotome is firmly placed on the root tip of the canine as parallel as possible to the long axis of the canine. The hammer is tapped on the osteotome with short, consistent, and intermittent power, while watching the crown of the canine tooth (Figure 3). Using an osteotome from the buccal site causes the canine to rise out of the socket in the palatal direction (Figure 4).



Figure 3: The root of the maxillary impacted canine is hammered from the buccal site



Figure 4: The crown of the maxillary impacted canine can be seen rising out.

Results

The palatally inclined maxillary impacted tooth could be easily extracted with this technique. Our technique could reduce the risk of tearing and damage to the mucoperiosteal flap as compared with conventional techniques such as the splitting of the tooth crown and its root using a rotary drill, bur, or dental turbines.

Discussion

Unerupted or impacted canine is a frequently encountered clinical problem in oral maxillofacial surgery[1,2,3]. Impacted teeth are more common in the maxilla than the mandible. Impacted canine represents the highest proportion of all impacted maxillary teeth, followed by the second premolars and central incisors. Often, impacted canines must be removed as they can delay eruption or impede other teeth, particularly then maxillary incisors and premolars[4,5]. Removal of this impacted canine needs careful surgical technique to minimize risk of damage to the adjacent roots of neighboring erupted teeth. The advantages of this bone osteotome technique includes easy availability, time-efficiency, and reduced risk of damages.

Indication of this osteotome technique is the following:

- 1) Palatally inclined maxillary impacted tooth that tooth crown is located in the palatal site and its root is in the buccal site.
- 2) Its tooth axis is horizontally inclined toward the palatal site.
- 3) A single and straight root

Thus, this technique must also be indicated for the removal of deeply impacted premolars, supernumerary teeth, and odontoma in the maxillary alveolar bone.

Conclusion

We highlighted the benefits of using this simple, easy-to-use, widely available bone osteotome tool during tooth extraction. We recommend its use in routine oral and maxillofacial surgical procedures

Ethical approval

All procedures performed in studies involving human participant were in accordance with the ethical standards of institutional and or national research committee and the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent

The patient's permission and consent have been obtained.

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