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# Displacement of a Mandibular Incisor – An Infrequent Complication of Mandibular Fracture

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## ABSTRACT

*A case of a mandibular fracture with an unusual complication is reported. A 13-year-old boy was admitted four years after conservative treatment of a symphyseal fracture. He complained of recurrent swelling. A radiographic evaluation showed a horizontally laid permanent mandibular left lateral incisor (PMLLI) that had probably slid into the fracture line and provoked repetitive infection episodes. After a surgery, a clinical and radiological analysis showed satisfactory healing.*

**Key words:** displacement, mandibular incisor, mandibular fracture

## Introduction

Mandibular fractures represent the most common maxillofacial fractures<sup>1</sup>. Reduction of mandibular fractures, followed by immobilization of the fracture fragments either by internal fixation or intermaxillary fixation are the accepted standard treatments for this type of injury<sup>2</sup>.

Lamphier et al. reported infection as the most frequent postoperative complication of mandibular fractures, followed by nonunion and wound dehiscence<sup>3</sup>. They also showed that complication rates remain higher with open reduction than with closed reduction.

Among the infrequent complications regarding the teeth in the fracture line Mitchell reported a displacement of a permanent mandibular canine caused by a mandibular fracture through the developing crypt<sup>4</sup>. Furthermore, Shah presented a six-year-old boy with an extraoral eruption of a permanent mandibular canine and a loosely attached lateral incisor in the labial vestibule three months following a trauma to the chin<sup>5</sup>.

Here, we present an unusual complication of the mandibular fracture caused by the PMLLI that, most probably, slid into the fracture line and provoked repetitive infection episodes.

## Case Report

A 13-year-old, otherwise healthy, boy was referred to the Department of Oral and Maxillofacial Surgery at the Dubrava University Hospital complaining of recurrent swelling of the left side of mandibular body. In the past medical history, four years earlier, he had been treated in his hometown hospital in Bihać, Bosnia and Herzegovina, for the mandibular fracture of the left side of the mandible. According to the patient's statement no operation was performed. Most probably intermaxillary fixation was used.

Clinically, he appeared with a functionally satisfactory occlusion. The PMLLI was missing, the buccal cortex was distended in the region of the permanent mandibular left canine and the mandibular left first premolar and could not be impressed. The canine appeared rotated. A panoramic radiograph demonstrated a horizontally laid PMLLI surrounded by a radiolucent zone extending almost to the lower mandibular border in the region of the canine, first and second premolar (Figure 1). The laboratory finding was within the physiological limits and we decided to perform an exploration and removal of the incisor under general anaesthesia.

A mucoperiosteal flap was reflected, the incisor was approached by removing the buccal cortex using a han-



Fig. 1. Panoramic radiograph showing a horizontally laid lower left second incisor surrounded by a radiolucent zone at the level of apices of the left lower canine, first and second premolar.



Fig. 2. The extracted incisor with an irregularly resorbed crown and root surface.



Fig. 3. Panoramic radiograph 1 month postoperatively showing a new layer of bone formed within the defect, previously occupied by the displaced incisor.

dpiece and a round bur and the tooth was removed together with the surrounding soft tissue. The surface of the crown and root of the removed incisor showed resorption due to the repetitive inflammation episodes (Figure 2). The flap was replaced and secured with 3–0 resor-

bable sutures. Postoperatively, we administered a 16mg single dose of dexamethasone and clindamycin (300mg three times a day) due to the alleged allergy to penicillin, non-steroidal anti-inflammatory analgesics and an antimicrobial mouthwash for a week. Due to the reported left mental nerve paresthesia B-complex vitamin was additionally prescribed. The clinical and radiological evaluation a month later showed an uneventful healing at the operation site with a new orthopantomogram showing a new layer of bone formed in the defect (Figure 3). The mental nerve paresthesia diminished. No further clinical and radiological controls were performed because the patient did not appear for them.

## Discussion

A detailed clinical evaluation and radiographic examination play a crucial role in the diagnosis of mandibular fractures. Furthermore, precise reduction and adequate immobilisation is the fundamental principle of fracture management and the prerequisite for normal healing<sup>6</sup>.

Nonetheless, infection appears to be the most common postoperative complication of a mandibular fracture<sup>3,7</sup>. Occasionally, it appears due to the tooth in the fracture line when an insufficient stability of the fracture parts is present<sup>8</sup>.

The circumstances regarding the patient's treatment before coming to our department remain puzzling. However, by analysing the medical history we concluded that he had been treated in the hometown hospital in the midst of war time in Bosnia. In those conditions, clinical evaluation was done most probably in a hurry and without a thorough radiographic examination. This may explain the fact that the absence of PMLLI in the dental arch was neglected and that only intermaxillary fixation was performed. Moreover, one could speculate that other patients were admitted to the hospital at the same time, with life-threatening war injuries, whereupon the medical staff might have given little importance to the mandibular fracture. Eventually, the tooth slid into the fracture line and consequently provoked infection episodes. Still, it remains unclear why there was no clinical and radiographic intervention after the fixation removal since the patient had been complaining of recurrent swelling during the four-year period. The postoperative follow-up at our department was also a challenge because the patient was not entirely cooperative.

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## **POMAKNUĆE SJEKUTIĆA U PRIJELOMNOJ PUKOTINI – RIJETKA KOMPLIKACIJA PRIJELOMA DONJE ČELJUSTI**

### **S A Ž E T A K**

Prikazujemo slučaj rijetke komplikacije prijeloma donje čeljusti. Trinaestogodišnji dječak javio se četiri godine nakon konzervativnog liječenja prijeloma simfize donje čeljusti. Žalio se na ponavljajuće oticanje u spomenutoj regiji. Radiološka analiza pokazala je horizontalno položeni trajni lijevi lateralni sjekutić donje čeljusti koji je najvjerojatnije bio skliznuo u prijelomnu pukotinu i uzrokovao ponavljajuća upalna zbivanja s oticanjem. Nakon kirurškog zahvata odstranjenja sjekutića, klinički i radiološki nalaz pokazali su zadovoljavajuće cijeljenje.