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# Surgical removal and immediate reattachment of coronal fragment embedded in lip

Pasini S, Bardellini E, Keller E, Conti G, Flocchini P, Majorana A. Surgical removal and immediate reattachment of coronal fragment embedded in lip. © Blackwell Munksgaard, 2006.

Abstract – This case describes a patient with a traumatic crown fracture of an upper incisor, associated with a laceration wound in the lower lip, showing local oedema. While palpating the tissues of the lower lip we felt the presence of a foreign body. This was confirmed by a radiograph of the lip that showed a radiopaque material, being similar to the coronal fragment of the fractured incisor. It was successfully surgically removed and immediately reattached using a composite adhesive technique. At the follow-up of 1 year later the vitality test on the teeth was positive and neither one of the two traumatized teeth showed any sign of discoloration.

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Key words: soft tissues trauma; dental fragment reattachment

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After a traumatic injury a thorough examination of the damaged tissues must include an accurate evaluation of hard tissues (teeth and bone), by means of an objective examination based on clinical and radiographs as well as pulp vitality, percussion and mobility tests (1, 2). In addition, the examination of intra and extra-oral soft tissues is mandatory, especially if there is a laceration wound where foreign bodies may be lodged (1, 2). In our clinical experience, of 1835 cases of dental trauma observed from 1999 to 2003, we found an 89% had soft tissues involvement. We also made a distinction in this sample between intra-oral and extra-oral soft tissues, finding the latter was involved in 46% of the cases. When observing the soft tissues, it is necessary to examine the extra-oral area and then the intra-oral soft tissues (lip, gingiva, cheeks, tongue, oral mucosa on plate). Open and swollen or haemorrhagic tissues must always be X-rayed to evaluate for any foreign bodies, after being cleaned.

The following case report describes a patient with dental trauma in which the fractured crown fragment of an upper lateral incisor was found in the lower lip. It was surgically removed from the soft tissue and then immediately reattached with a microfilled composite resin.

## Case report

A.F., an 18-year-old woman, suffering from drug-controlled epilepsy, came to the University Dental Clinic of Brescia because of a dental trauma, which had occurred at home 36 h earlier. The dental examination revealed a crown fracture on the upper right lateral incisor (Fig. 1), without pulp exposure and with a positive pulp vitality test, and a subluxation on the upper right central incisor, which moved slightly and responded only sparingly to the pulp vitality test. The percussion test was positive in both teeth. About 1 cm of the right lower lip was lacerated, showing local oedema (Fig. 1). The patient was unable to find the tooth fragment when the trauma occurred.

Radiographic examination showed neither radicular nor alveolar fractures of the traumatized area, confirming the diagnosis of the clinical examination. While palpating the tissues of the lower lip we felt the presence of a foreign body. This was confirmed by a radiograph of the lip that showed a radiopaque material, being similar to the coronal fragment of the fractured incisor (Fig. 2). After the diagnosis was made and informed consent was obtained, we decided to immediately surgically remove the tooth

*Fig. 1.* Clinical appearance of fractured lateral incisor and lacerated lower lip.

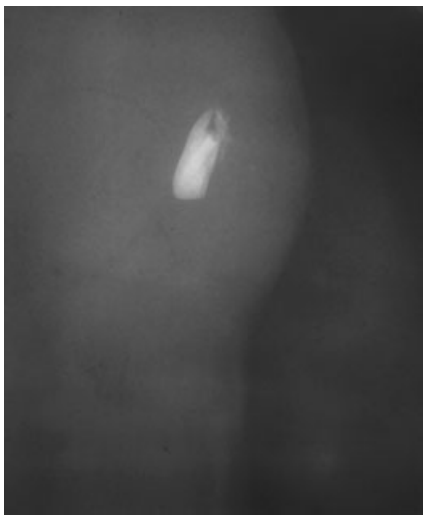

*Fig. 2.* Radiograph of the lower lip. The tooth fragment is seen embedded in the lip.

fragment. With local anaesthesia, a superficial semilunar incision was made in the site of lesion using a cold-blade scalpel (Figs 3–4).

*Fig. 3.* Semi-lunar incision of the lip in order to remove the fragment.

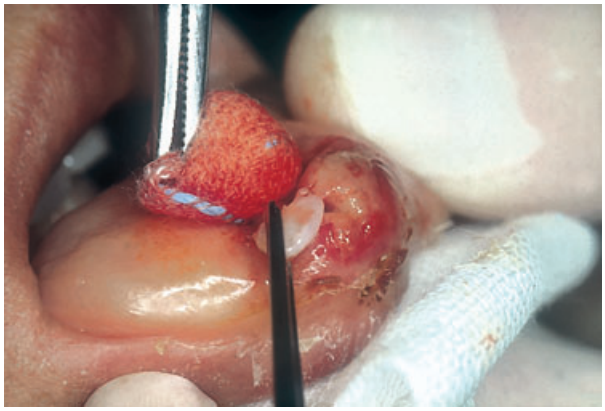

*Fig. 4.* Surgical removal of fragment.

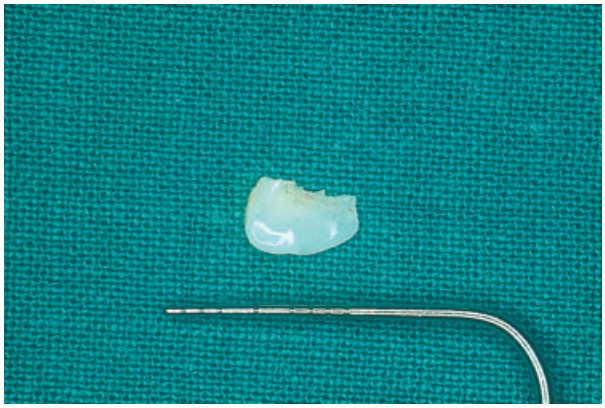

*Fig. 5.* The tooth fragment.

Once the fragment was located, it was removed (Fig. 5) and placed in a physiological solution for preservation. Then, the lip was sutured using a 3.0 silk suture. The radiopaque body inside the lower lip was identified as the missing coronal fragment of the fractured tooth. Its lingual side was perfectly intact while the facial aspect of it presented a slight loss of enamel. The fragment was reattached by a composite adhesive technique (Fig. 6). Both surfaces of

*Fig. 6.* Fragment reattached with flowable composite resin.

*Fig. 7.* One-month follow-up: lower lip shows good healing.

the tooth were etched and primed. Flow resin was placed to match both tooth fragments, filling up the facial gap with a resin composite micro-filled, and then polymerized.

Finally, it was polished with rubber points and polishing discs.

Follow-up was scheduled at 2–4 weeks and 3–6 and 12 months to evaluate the aesthetic-functional integrity of the traumatized teeth. At a one month follow-up visit the lip showed good healing (Fig. 7) and the repaired tooth looked aesthetically good. At the follow-up of 1 year later the vitality test on the teeth was positive and neither one of the two showed any sign of discoloration (Fig. 8).

## Discussion

Coronal fracture after dental trauma is extremely frequent, occurring in the permanent dentition with prevalence between 15% and 90% (3–7). This kind of lesion is often complicated by involvement of the soft oral and perioral tissues. Management of the traumatic event must include simultaneous treatment of both hard and soft tissues (1, 2, 4). The first choice of treatment for coronal fractures is the immediate reattachment of the fractured fragment, if available, using the composite adhesive technique with different materials and tooth preparations (8, 9–22).

The medium of dental fragment conservation is very important in order to maintain fragment hydration. The best medium is physiological solution but milk, saliva ( in the mouth) or at least water (11, 15, 17, 18) are acceptable. This case shows an unusual but appropriate conservation of the dental fragment in an organic medium. It also points out the multi-disciplinary nature of (1, 2, 11, 12, 16, 17, 21, 22) dental trauma management.

*Fig. 8.* One-year follow-up: aesthetic and functional integrity of the tooth is maintained.

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