

Katedra i Klinika Chirurgii Stomatologicznej i Szczękowo-Twarzowej AM w Lublinie  
Katedra i Zakład Stomatologii Zachowawczej AM w Lublinie  
Department and Clinic of Dental and Maxillofacial Surgery,  
Medical University of Lublin  
Chair and Department of Conservative Dentistry, Medical University of Lublin

MANSUR RAHNAMA, TERESA BACHANEK,  
TOMASZ TOMASZEWSKI

*A delayed replantation of permanent upper incisors*

---

Późna replantacja stałych górnych siekaczy

Replantation means the reinsertion of a tooth in its own alveolar socket with or without endodontic therapy, after its post-traumatic loss (3, 10). Accidents during sports and play, falls and traffic accidents are almost equally listed as the cause of fractures and loosening of teeth. Today, replantation has been widely accepted as an effective technique of preserving a tooth knocked out (1, 5, 6).

Many factors have led to a success of this procedure: the time interval between loss of teeth and replantation, the condition of the teeth during the extraoral period, the vitality of the pulp and the condition of the supporting structures of the tooth and of the alveolar bone, the kind of teeth (deciduous or permanent), the age of patient, the type and period of stabilization of replanted teeth and, of course, the experience of a dentist (4, 8, 9, 11).

The aim of this study was to present the case of delayed replantation of upper incisors in an 11 years old girl with a description of treatment following injury.

CASE DESCRIPTION

A child K. S., eleven years, was admitted to the Children's Hospital in Lublin because of injuries caused by falling over bicycle handlebars. As a result of trauma the anterior upper teeth were avulsed. The girl was hospitalized for ten days, but besides medical

conservative treatment, only preservation of two upper incisors in NaCl solution was done. After discharge from hospital mother and child were present in our clinic asking if the replantation of the teeth could be made, because they heard about it. Due to mother's request, although it was long time after the accident, we undertook the surgical treatment on her responsibility.

Replantation was performed by means of a conventional technique. In this case the roots of the incisors were fully formed. The procedure included cleansing the tooth surfaces in a physiologic saline solution containing an antibiotic, pulpectomy and root canal filling with gutta-percha and apicoectomy. Thereafter, under local anaesthesia, the replacement of so prepared teeth into alveolar socket and retention with splinting was made. The period of stabilization of the teeth was 8 weeks. During this time the patient was given an antibiotic and a soft diet and local biostimulation with soft laser therapy was recommended. The replanted teeth were under clinical and radiologic examination for 12 months. During this period no symptoms of resorption were found.

## DISCUSSION

Most of the replanted teeth are lost after a certain period of time because of root resorption. This root resorption is the major factor to determine the durability of replanted teeth. In our case the root resorption was not observed during 1 year after replantation. Analogous findings are reported by *Andreasen* and *Hjorting-Hansen* (1). *Mahajan* and *Sidhu* - are confirmed that the removal of the periodontal membrane raised the success rate of tooth replantation (7). In our case the periodontal membrane had to be scraped off from the root surface because of the long time interval between loss of the tooth and replantation. *Andreasen* and *Kristerson*, however, found that the removal of the periodontal membrane led to the development of ankylosis resulting from replacement resorption (2).

The period from loss of the tooth to replantation and the conditions under which tooth was kept during this period were the most critical factors affecting the prognosis of surgery. In the analysis of *Andreasen* and *Hjorting-Hansen* some teeth showed no root resorption despite a long extra oral period (1). In our case, the two avulsed maxillary incisors that had been out of the mouth for ten days revealed no symptoms of roots resorption after 1 year after replantation.

## CONCLUSIONS

1. Replantation always should be made to preserve the teeth lost by trauma, because the failure of this procedure is minimal.

2. Positive results of our treatment encouraged us to carry out the replantation despite a long, unfavourable time after the loss of teeth due to the accident.

#### REFERENCES

1. Andreasen J. O., Hjørting-Hansen E.: Replantation of teeth. Radiographic and clinical study of 110 human teeth replanted after accidental loss. *Acta Odontol. Scan.*, 24, 263, 1966.
2. Andreasen J. O., Kristerson L.: The effect of limited drying or removal of the periodontal ligament. *Acta Odontol. Scan.*, 39, 1, 1981.
3. Grossman L. I.: Intentional replantation of teeth. *JADA*, 72, 1 H 1, 1966.
4. Halczy-Kowalik L. et al.: Replantacja czterech górnych zębów siecznych u 15-letniego chłopca - opis przypadku. *Czas. Stomat.*, 53, 244, 2000.
5. Jarzab G.: Ergebnisse der Replantation im Frontzahnbereich bei Jugendlichen. /Biochemische Untersuchungen/. Transplantationen im Kiefer-Gesichtsbereich, Magdeburg 1973.
6. Komorowska A., Jarzab G.: Intraalveoläre Reposition der oberen Frontzähne. *Stomatol., DDR* 37, 224, 1987.
7. Mahajan S. K., Sidhu S. S.: Periodontal ligament, extraoral period, and use of fluorides in replantation of teeth. *Indian J. Med. Res.*, 75, 441, 1982.
8. Piątowska D., Ciesielski P.: Resorpcja zewnętrzna w replantowanym kle. Złamanie poprzeczne korzenia zęba siecznego bocznego. Opis przypadku. *Czas. Stomat.*, 48, 703, 1995.
9. Szpringer-Nodzak M.: Urazowe uszkodzenia zębów u dzieci. *Biblioteka Stomatologa Praktyka*, 1993.
10. Wallace J. A. et al.: Epithelial rests' function in replantation: Is splinting necessary in replantation? *Oral Surg. Oral Med. Oral Pathol.*, 70, 644, 1990.
11. Wieczorek P.: Replantacja całkowicie zwichniętych zębów. *Przegląd piśmiennictwa. Nowa Stomatologia*, 2, 13, 1997.

Otrz.: 2000.08.30

## STRESZCZENIE

W pracy autorzy opisują przypadek możliwości replantacji dwóch zębów siecznych u 11-letniej pacjentki po 10 dniach od urazu. Zwichnięte zęby przetrzymywane w roztworze soli fizjologicznej przygotowano do zabiegu poza jamą ustną. Po usunięciu ozębnej i dokładnym oczyszczeniu zębów wypełniono kanały korzeni gutaperką i odcięto wierzchołki korzeni. Następnie w znieczuleniu miejscowym wykonano replantację, wprowadzając tak przygotowane zęby do zębodołów i unieruchomiono je ligaturą i szyną z polimeru. Po zabiegu podano pacjentce antybiotyk i zastosowano miejscowo na okolicę wierzchołków korzeni replantowanych zębów naświetlanie laserem biostymulującym.

Przeprowadzone badania kontrolne kliniczne i radiologiczne po 3, 6, 9 i 12 miesiącach od zabiegu nie wykazały śladów resorpcji korzeni ani ruchomości replantowanych zębów.