

## Fracture of the Alveolar Process in a 2-year-old Child: A Report of an Unconventional Immobilization

Wilson Denis Martins, DDS, PhD, OMFS;  
Daniela Martins Fávaro, DDS



### Abstract

This is a report of fracture of the maxillary anterior segment of the alveolar process of an energetic 2-year-old child. The fracture was reduced under general anesthesia, and the fractured segment was immobilized using only 2-0 chromic gut in order to avoid a second surgical episode to remove traditional fixation after healing. The patient was followed for one year and healed well with no evidence of the lack of vitality of the involved teeth.

**Keywords:** Dentoalveolar trauma, child dental trauma, maxillofacial surgery

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### Case Report

A 2-year-old girl had fallen from her bed and sustained dentoalveolar trauma. She was admitted to the emergency maxillofacial unit of a hospital. A general examination disclosed an otherwise healthy child, with no other clinical or neurological problems.

Maxillofacial examination disclosed an en bloc fracture of the maxillary alveolar process involving the right central and lateral primary incisors. Both teeth were not extruded from their respective alveolus (Figure 1).

Under general anesthesia, the dentoalveolar fracture was carefully reduced and a stable position of the alveolar fragment was obtained (Figure 2). The gingival lacerations were repaired with 4-0 resorbable sutures.

During the procedure pragmatic issues had to be considered regarding the immobilization of the alveolar fragment. To leave the fragment without any immobilization in spite of the reasonably stable position of the fragment was considered too risky since the patient is an extremely active 2-year-old child and very difficult to control. A conventional semi-rigid immobilization would require removal after a period of time, creating the need to subject the child to sedation or general anesthesia again.

To avoid these surgical challenges, 2-0 chromic gut suture material was used for immobilization. The sutures were placed crossing the mucosa from buccal to lingual and vice-versa, and the knot was tied in the midline to form a sling to stabilize the fractured segment (Figure 3).

This configuration provided an effective semi-rigid fixation. The sutures dissolved by the 15<sup>th</sup> post-operative day. The patient was followed for one year following the surgery. The fracture healed well, the fragment remained in good position, and there were no signs of lack of vitality of the involved teeth.

### Summary

The use of chromic gut as an emergency unconventional ligature was recently described.<sup>1</sup> In spite of the clinical situations being completely different in that report (an adult patient



Figure 1. Maxillary anterior segment upon initial examination.

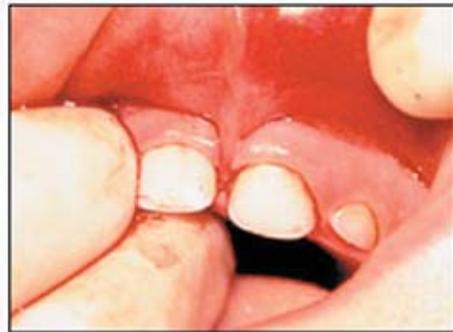


Figure 2. Reduction of the fracture under general anesthesia.



Figure 3. Placement of the 2-0 chromic gut suture for immobilization of the fractured segment.

and a child; an avulsion and an alveolar fracture) the acquired experience with the use of chromic gut ligatures was helpful in the management of this case.

Other suture materials have been used in the past, i.e., silk<sup>2</sup> that could have been indicated in this case. However, silk is not a resorbable material and would require removal which would lead to the same problems describe previously for the use of conventional immobilization.

## References

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## About the Authors

### Wilson Denis Martins, PhD, DDS, OMFS



Dr. Martins is an Oral and Maxillofacial Surgeon and a Professor of Stomatology at the Catholic University of Paraná (PUCPR) in Curitiba, Brazil.

e-mail: [w.denis@pucpr.br](mailto:w.denis@pucpr.br)

### Daniela Martins Fávaro, DDS



Dr. Fávaro is an Orthodontist in private practice in Paranavaí, PR, Brazil.