

# KIN INTERNATIONAL AWARDS

2<sup>ND</sup> INTERNATIONAL COMPETITION OF CLINICAL CASES IN PERIODONTOLOGY AND SURGERY

## Use of PERIOKIN Hyaluronic 1% in the postoperative management of dental reimplantation in the esthetic sector of pediatric patients.

Erick Isaac Baltodano Montalvan

Managua, Nicaragua

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## Abstract

Dental trauma in children is a real challenge for specialists, since many elements are involved that can influence the prognosis, such as the nature of the trauma, the time elapsed, the biology of the tissues, the family and the social environment of the child.

The use of hyaluronic acid in dentistry has emerged as an effective adjunct in various clinical conditions due to its antigenic, anti-inflammatory and healing properties, which regulate the immune response, promote angiogenesis and accelerate healing. Chlorhexidine, due to its substantivity and bacteriostatic properties, is the antiseptic of choice in dentistry, as it reduces the risk of post-surgical infection.

The case of dental reimplantation described below was managed post-surgically with Periokin hyaluronic gel 1% which combines 0.20% chlorhexidine digluconate and 1% hyaluronic acid in its composition.

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## Introduction

Dental trauma is very frequent in childhood and adolescence. It is considered to be the second cause of urgent dental demand after dental caries. Dental trauma in children is a real challenge for specialists, since many elements will be involved that can influence the prognosis, such as the nature of the trauma, the time elapsed, the biology of the tissues, the social and family environment of the child.

The use of hyaluronic acid in dentistry has emerged as an effective complement in various clinical conditions thanks to its antigenic, anti-inflammatory and cicatrizing properties, which regulate the immune response, favor angiogenesis and accelerate healing. Chlorhexidine, due to its substantivity and bacteriostatic properties, is the antiseptic of choice in dentistry, as it reduces the risk of post-surgical infection.

The case of dental reimplantation described below was managed post-surgically with Periokin hyaluronic gel 1% which combines 0.20% chlorhexidine digluconate and 1% hyaluronic acid in its composition.

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## Anamnesis

12 year old patient suffered fall in PLAY AREA, suffering avulsion, parents called the office and were instructed to use an appropriate vehicle for the avulsed piece (image 1).

Complete dislodgement of the dental root of tooth #11 with loss of the osseous table is observed, no fracture of the neighboring dental organs is observed (image 2 and 3).

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Image 2

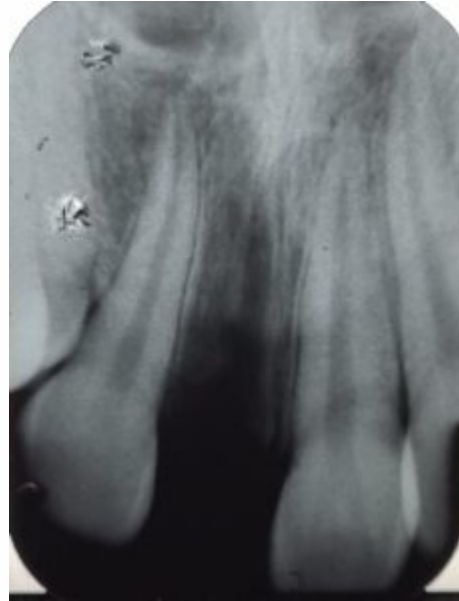


Image 3



Image 1

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## Treatment plan

Radiographic examination

Evaluation of neighboring dental organs

Approach with bone resection

Reimplantation of the avulsed tooth

Ferulization

Pulp treatment-Endodontics

Restorative phase - Direct composite restoration

Radiographic and tomographic follow-up

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## Carrying out the treatment

Assessment of the emotional state of the patient and the patient's companion.

Briefly explain the procedure to be performed

The part was rinsed with a stream of physiological solution.

Radiographic examination

Evaluation of neighboring dental organs

Administer anesthesia to the patient

Locate and evaluate vestibular and palatal or lingual tables

Removing the clot from the alveolus

Removal of bone fragments from the vestibular table (image 1).

-Approach with periodontist to perform bone resection.

-Irrigation of the alveolus with the same physiological solution.

Take the avulsed tooth by the crown and reimplant using digital pressure in a single attempt.

Confirm clinical and radiographic position

-Ferulization with NiTi 014. from first premolar to first premolar #54 and 64.

Resection of fractured vestibular plate (image 2)

-Flap repositioning - Periodontal tissue management

- Prescription of medication and periokin hyaluronic 1% 3 times a day for 14 days and indications for care.

After 15 days

Points are withdrawn

-Reassessment of periodontal tissues

-Reinforcement of hygiene and care instructions.

-Due to the mobility, it was decided to wait to remove the splint and perform the root canal treatment.

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Removal of splinting and monthly clinical and radiographic control.

-Endodontics in piece #11.

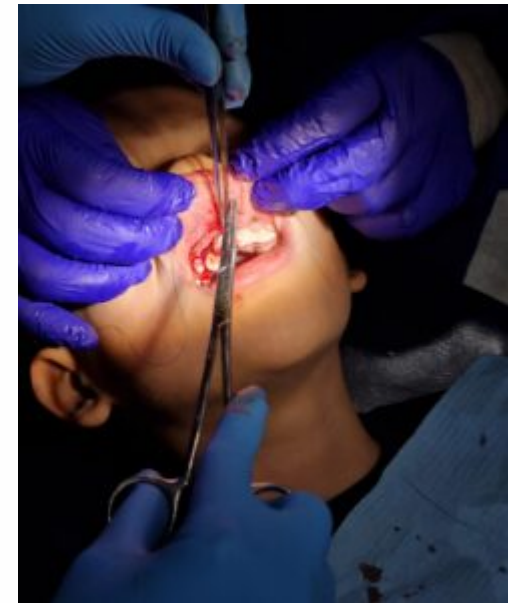
-Aesthetic restoration with direct composite



Patient evaluation



Removal of bone fragments from the vestibular table



Flap repositioning

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IMMEDIATE END



Periokin Hyalurionic Application



IMMEDIATE END

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Endodontics on tooth #11



Endodontics on tooth #11



RESTORATIVE PHASE - DIRECT COMPOSITE ON #11

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## Follow up

CLINICAL AND RADIOGRAPHIC CONTROL AT THREE MONTHS

-Mobility decreased considerably, another control will be performed in 3 months to send tomography and evaluate vestibular bone table and the need or not of INJERTO.

CLINICAL AND RADIOGRAPHIC CONTROL AT SIX MONTHS

-Evaluation of the tooth 1.1 to 6 months, asymptomatic. Clinically without alterations and radiographically a slight resorption is observed at the level of the middle third of the root in mesial, which coincides with the finding in control rx of the 3rd month. Homogeneous bone trabeculation, and LP space and lamina dura without alterations. Physiological mobility.

ACT scan was indicated to evaluate bone grafting.

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15-day follow-up appointment



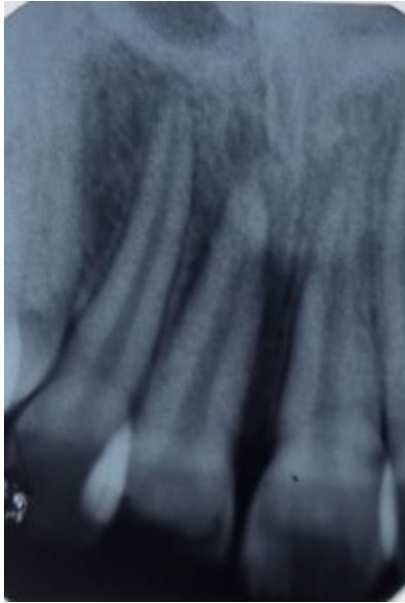
15-day follow-up appointment



Removal of splinting and monthly clinical and radiographic control.

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Removal of splinting and monthly clinical and radiographic control.



THREE-MONTH RADIOGRAPHIC CONTROL



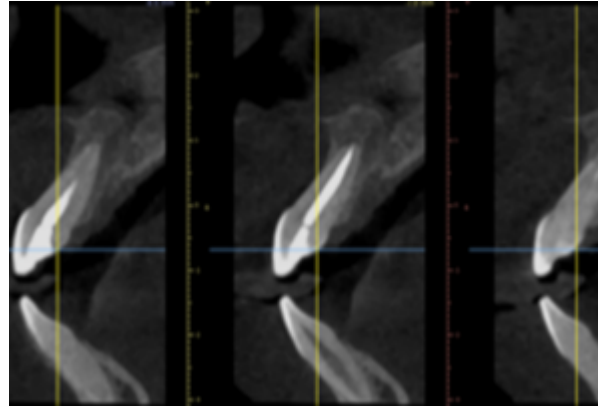
SIX-MONTH RADIOGRAPHIC CONTROL

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SIX-MONTH CLINICAL CONTROL



TAC 8 months

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### Discussion

Avulsions represent between 8 and 12 years of age 16% of trauma in the permanent dentition and 3% of all dental injuries, being more frequent in males. The treatment of choice is immediate reimplantation, however it is not always possible due to conditions related to the general health of the patient, the poor condition of the tooth or lack of cooperation.

To improve the prognosis of the tooth to be implanted, a protocol should be followed that includes correct handling of the tooth to be implanted.

In immature teeth with incomplete apices, having been reimplanted immediately or with short oral overtime and good transport means, revascularization is possible. Hyaluronic acid is also a very useful resource in oral surgery because it is able to accelerate the healing process by decreasing the inflammation of the affected area. Having a faster healing after surgery, reduces the risk of infection significantly, so it should accompany the postoperative recovery with hyaluronic acid as an adjuvant, in this case it would be Periokin Hyaluronic 1%.

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### Conclusion

Each trauma is unique and different, and the biological responses it produces are different for each person; therefore, pre-established rules are not always useful. However, the decision making process involves dental knowledge related to pulp and periodontal diagnosis, management of dental materials, growth and development of the child, endodontics, surgery and maintenance of spaces, with a social and psychological reference that allows to contain each traumatic situation.

If it is reimplanted 60 minutes after the accident, the prognosis is favorable since in 90% of the cases it evolves to ankylosis. It is considered that if the piece remains more than 60 minutes in a dry medium there will be no periodontal cell viability. Ideally, parents, caregivers, teachers, general dentists, doctors on duty, physical education teachers, etc., should be informed so that immediate reimplantation can be performed at the site of the accident to avoid time lapsing. Clinical and radiographic controls should be carried out at 1 month, 3 months, 6 months, 12 months and then annually for 5 years.

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