Management of crown-root fracture tooth by intra-alveolar transplantation with 180-degree rotation and suture fixation.

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Abstract

Teeth with traumatic crown-root fractures extending subgingivally and involving the entire width of the tooth may have problems in endodontic isolation, periodontal maintenance, and restoration. A number of techniques, such as crown lengthening, and orthodontic or surgical extrusion, have been described for treatment of crown-root fractures. However, all of these techniques have limitations in terms of the extended time required for treatment, cost, and esthetic considerations. Intra-alveolar transplantation is an alternative treatment option in the management of complicated crown-root fractures. We describe a case of intra-alveolar transplantation with 180( degrees ) rotation and suture fixation. At 1-year follow-up, the replanted tooth has normal function and no obvious inflammatory root resorption on radiographic examination. Copyright (c) 2010 Mosby, Inc. All rights reserved.

PMID: 19969480 [PubMed - indexed for MEDLINE]
Management of a complicated crown-root fracture in a young permanent incisor using intentional replantation.


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Abstract

The purpose of this case presentation is to review the rationale for and illustrate the clinical procedures involved in intentional replantation of a maxillary central incisor following a complicated crown-root fracture. The treatment of complicated crown-root fractures in children often is compromised by a fracture below the gingival margin and/or bone. This makes isolation difficult and comprises the hermetic seal that is critical for a successful endodontic treatment. Orthodontic or surgical extrusion with gingivectomy has been suggested; however, these approaches can be expensive, time-consuming, esthetically compromising, and unsatisfactory when the fracture line is deep below the gingiva. Our presentation will discuss the treatment options for such cases and introduce the concept of intentional replantation as an option to manage complicated crown-root fractures in young permanent anterior teeth.

PMID: 18173676 [PubMed - indexed for MEDLINE]
Surgical extrusion of a crown-root fractured immature permanent incisor: 36 month follow-up.
Kirzoğlu Z, Karayılmaz H.

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Abstract
Crown-root fracture is defined as a fracture involving enamel, dentin and pulp and can be classified as either complicated or uncomplicated. The tooth with crown-root fracture presents a lot of problems during coronal restorations and extraction was formerly used in many cases. But loss of a permanent incisor in a young patient may create severe emotional problems and alternative treatment approaches must be considered. This report presents the successful results of a surgical extrusion of a complicated crown-root fractured, immature permanent incisor in a 9-year-old boy. Examination 36 months after the trauma indicated that the treatment had provided functional and esthetic results.

PMID: 17991241 [PubMed - indexed for MEDLINE]

Related citations

Publication Types, MeSH Terms

Publication Types:
• Case Reports

MeSH Terms:
• Child
• Follow-Up Studies
• Humans
• Incisor/injuries
• Incisor/radiography
• Incisor/surgery*
A new approach using the surgical extrusion procedure as an alternative for the reestablishment of biologic width.

Kim SH, Tramontina V, Passanezi E.

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Abstract

A modification of the surgical extrusion technique to treat fractured teeth was realized as an alternative periodontal therapy to avoid ostectomy following orthodontic extrusion of teeth with their biologic widths compromised by different etiologic involvements. After delicate luxation and arrested avulsion, the teeth were coronally positioned to allow room for a new biologic width. Clinical and radiographic monitoring showed the ability of the periodontium to adapt function and esthetic recovery. The advantages and disadvantages of this therapeutic procedure for resolution of a periodontal involvement are presented.

PMID: 14984144 [PubMed - indexed for MEDLINE]

Related citations

Publication Types, MeSH Terms

Publication Types:
• Case Reports

MeSH Terms:
• Bicuspid/surgery
• Crown Lengthening/methods*
• Gingival Diseases/etiology*
• Gingival Diseases/surgery
• Humans
• Root Caries/complications*
• Root Caries/surgery
• Tooth Fractures/complications*
• Tooth Fractures/surgery
• Tooth Movement/methods
• Tooth Replantation*
Replantation with intentional rotation of a complete vertically fractured root using adhesive resin cement.

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Abstract

This case describes intentional replantation with rotation of a complete vertically fractured root using adhesive resin cement. The fractured root was fixed with adhesive resin cement extra-orally. The tooth was replanted into the socket with rotation in order to avoid contact with the area where the periodontal ligament of the root surface was lost and the area where the alveolar bone was lost along the fracture line. At follow-up 18 months later, the tooth was asymptomatic and radiographically showed an increase in the density of the alveolar bone, and the periodontal pockets were improved.

PMID: 12656844 [PubMed - indexed for MEDLINE]

Related citations

Publication Types, MeSH Terms, Substances

Publication Types:
• Case Reports

MeSH Terms:
• Alveolar Bone Loss/complications
• Alveolar Bone Loss/surgery
• Bicuspid/injuries
• Boron Compounds/therapeutic use
• Humans
• Male
• Methacrylates/therapeutic use
• Methylmethacrylates/therapeutic use
• Middle Aged
• Periodontal Pocket/complications
• Periodontal Pocket/surgery
• Resin Cements/therapeutic use*
• Root Canal Therapy
• Tooth Extraction
• Tooth Fractures/complications
• Tooth Fractures/surgery*
• Tooth Replantation/methods*
• Tooth Root/injuries*
• Tooth Socket/surgery

Substances:
• Boron Compounds
The combination of a surgical and adhesive restorative approach to treat a deep crown-root fracture: a case report.

Roeters J, Bressers JP.

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Abstract

Most dental trauma requires immediate action to preserve the affected teeth. Furthermore, the trauma has often a great impact on the appearance and well being of the patient. In this case trauma resulted in a very deep complicated crown-root fracture of one incisor and a complicated crown fracture in another incisor of a 47-year-old woman. A combination of surgical extrusion and adhesive restoration was chosen to provide good prognosis for the teeth as well as an instant esthetic result that was well accepted by the patient. Eleven months after trauma, the treated teeth exhibited good healing and normal function.

PMID: 11921763 [PubMed - indexed for MEDLINE]

Related citations


Vertical root fracture treated by bonding fragments and rotational replantation.

Kawai K, Masaka N.

Department of Restorative Dentistry and Endodontology, Suita, Osaka, Japan.

Abstract
These case reports describe a new treatment method for complete vertical root fractures. This method is composed of two steps. First, the fractured tooth is intentionally extracted atraumatically, and then the separated fragments are bonded with an adhesive resin cement. The restored tooth is replanted by rotating approximately 180 degrees into the original socket and fixing with an orthodontic wire. For both cases reported here, bone regeneration was observed at the 3-year follow-up. Since this modality adopts the respective advantages of both intentional replantation and adhesive treatment, it might be the treatment of choice in cases of vertical root fracture.

PMID: 11841465 [PubMed - indexed for MEDLINE]

Publication Types:
- Case Reports

MeSH Terms:
- Aged
- Bicuspid/injuries
- Female
- Humans
- Incisor/injuries
- Male
- Maxilla
- Middle Aged
- Resin Cements/therapeutic use*
- Tooth Extraction
- Tooth Fractures/therapy*
- Tooth Replantation/methods*
- Tooth Root/injuries*

Substances:
- Resin Cements


Intra-alveolar transplantation of deeply fractured roots after elongation with titanium roots screws.
Bühler H.

Public Dental Health Clinic, Linköping, Sweden.

Abstract
Teeth with deep transverse or oblique fractures have posed severe challenges for treatment in the past. Today, such teeth can be saved by transplantation within the alveolus. In this pilot study, a technique is described by means of which
roots otherwise determined to be too short can be salvaged. Fourteen fractured short roots were extracted carefully, elongated with titanium screws, and subsequently replanted.

PMID: 8940568 [PubMed - indexed for MEDLINE]

Related citations

MeSH Terms, Substances


Surgical extrusion of root-fractured teeth--a follow-up study of two surgical methods.
Kahnberg KE.

PMID: 3251760 [PubMed - indexed for MEDLINE]

Related citations

MeSH Terms

MeSH Terms:

- Adolescent
- Adult
- Aged
- Female
- Follow-Up Studies
- Humans
- Male
- Methods
- Middle Aged
- Tooth Fractures/surgery*
- Tooth Root/injuries*
- Tooth Root/surgery

13.


Clinical evaluation of intra-alveolar transplantation of teeth with cervical root fractures.
Tegsjö U, Valerius-Olsson H, Frykholm A, Olgart K.

Department of Oral Surgery, Eastman Institute, Stockholm, Sweden.

Abstract
Transverse and oblique intra-alveolar fractures constitute a major therapeutic problem, particularly in young dentitions. Very few treatment alternatives apart from extraction have been available. This report is a clinical and roentgenological evaluation of a series of intra-alveolar transplantations which were carried out on 56 teeth with complicated crown-root fractures. The patients ranged in age from 9-33 years and were observed over a period of 4 years. Of the 8 teeth which had to be extracted due to further traumatic/prosthetic complications, 7 were retained for histologic examination. All teeth exhibited successful healing without ankylosis. In 12 per cent of the cases, unhealed resorptions could be observed within the apical area. Two to nine weeks post-operatively, endodontic and/or prosthetic treatment could be carried out, after which the teeth have continued to function well in terms of both aesthetics and performance. No negative effects in the adjacent teeth have been observed. Cases with multiple crown-root fractures and one case with internal resorption have been described. The intra-alveolar transplantation technique provides not only an alternative method of treatment, but also an opportunity for deep root injuries to be diagnosed.

PMID: 3481656 [PubMed - indexed for MEDLINE]


Kahnberg KE, Warfvinge J, Birgersson B.

Abstract
Intraalveolar transplantation of teeth with unfavourable cervical root fractures were performed in 15 patients. The roots were surgically extruded on an average 4.5 mm, and autologous bone transplants were placed above the apical part to support the root. Temporary endodontic therapy was carried out before the transplantation in 10 patients and 3 weeks after transplantation in 2 patients. 3 of the teeth had old root fillings. Postoperative controls were made weekly during the first month, after 3 months, 6 months, 1 and 2 years. The roots had become stable in most cases after 3 weeks. The mobility grade was dependent on the extent of extrusion. Radiographic controls showed formation of a normal periodontal space around the roots after 3 months, but also minor root resorption in the most apical part in 10 of the cases. The resorption was, however, not progressive in nature and was limited to the apical part. Remodelling of the marginal bone contour around the transplanted roots was evident in 11 patients. Periapical destructions were found in 3 patients at the 2-year control. Crown therapy was carried out with due attention to the special prosthetic problems associated with preparation of small remaining root fragments with unfavourable crown/root ratio.