RECENT REVIEWS RELATED TO DENTOALVEOLAR TRAUMA

Database: Ovid MEDLINE(R) Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily, Ovid MEDLINE and Versions(R) <1946 to April 25 2018>

Search Strategy:
--------------------------------------------------------------------------------
1  exp *maxillofacial injuries/ or exp *tooth injuries/ (18890)
2  (tooth and (fractur$ or injur$ or avuls$ or replant$)).ti. (1011)
3  ((jaw or maxillofacial or maxilla$ or mandibular$) and (injur$ or fractur$)).ti. (5426)
4  1 or 2 or 3 (20462)
5  limit 4 to english language (14326)
6  limit 5 to ("review" or systematic reviews) (1169)
7  review.ti. and 5 (445)
8  6 or 7 (1326)
9  limit 8 to dentistry journals (828)
10 (dentist$ or dental$).tw. (233117)
11 8 and 10 (367)
12 9 or 11 (905)
13 exp Orbital Fractures/ (3059)
14 (orbital adj2 fracture$).tw. (2124)
15 13 or 14 (3832)
16 maxillofacial.tw. (16308)
17 15 not 16 (3522)
18 12 not 17 (842)
19 exp animals/ not humans/ (4449975)
20 18 not 19 (832)
21 limit 20 to yr="2016 -Current" (91)
22 remove duplicates from 21 (90)

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Title
Imaging of Odontogenic Infections. [Review]

Source

Abstract
Odontogenic infections represent a common clinical problem in patients of all ages. The presence of teeth enables the direct spread of inflammatory products from dental caries, trauma, and/or periodontal disease into the maxilla and mandible. The radiographic changes seen depend on the type and duration of the inflammatory process and host body response. Imaging plays a central role in identifying the source of infection and the extent of the disease spread and in detecting any complications. Many different imaging modalities can be used. The radiographic features associated with acute and chronic inflammatory processes are discussed.

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RECENT REVIEWS RELATED TO DENTAL AND ALVEOLAR TRAUMA

**Title**
Imaging of Dental and Alveolar and Jaw Trauma. [Review]

**Source**

**Abstract**
Prior to the invention of cone beam CT, use of 2-D plain film imaging for trauma involving the mandible was common practice, with CT imaging often recommended for cases of more complex situations, especially in the maxilla and related structures. Cone beam CT has emerged as a reasonable and reliable alternative considering radiation dosage, image quality, and comfort for the patient. This article presents an overview of the patterns of dental and maxillofacial fractures using conventional and advanced imaging techniques illustrated with multiple clinical examples selected from the author’s oral and maxillofacial radiology practice database.

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**Title**
Dental splints: types and time of immobilization post tooth avulsion. [Review]

**Source**

**Abstract**
Avulsion is defined as the complete displacement of the tooth out of its socket with disruption of the fibers of periodontal ligament, remaining some of them adhered to the cementum and the rest to the alveolar bone. This condition is more frequent in young permanent teeth, because the root development is still incomplete. Splints are used to immobilize traumatized teeth that suffered damage in their structures of support, preventing their constant movement. The literature has shown that after replantation, it is necessary to use splints in order to immobilize the teeth during the initial period, which is essential for the repair of periodontal ligament; the use of semi-rigid splint is more indicated than the rigid one, and long periods of splinting showed that substitutional resorption or ankylosis is an expected complication. Thus, the aim of this review is to describe the different types of splints; their time of permanency, and its influence on the process of healing and reparation on the occurrence of substitutional resorption or ankylosis. It is very important to keep gathering knowledge about this content, since it has been proved that the approaches and the protocols keep changing over time.

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**Title**
A Systematic Review of the Survival of Teeth Intentionally Replanted with a Modern Technique and Cost-effectiveness Compared with Single-tooth Implants. [Review]

**Source**

Local Messages
THIS JOURNAL IS AVAILABLE IN THE BDA LIBRARY, BDA MEMBERS CAN ALSO ACCESS THIS JOURNAL ONLINE FROM 2011 TO DATE. Go to www.bda.org/ejournals
INTRODUCTION: The aim of this study was to investigate the survival rate of teeth intentionally replanted with a modern technique and to compare their cost-effectiveness with that of single-tooth implants.

MATERIALS AND METHODS: Four databases were systematically searched for articles that met inclusion criteria published between January 1966 and February 2017. Overall survival rate of intentional replantation was determined through a meta-analysis using a random-effects model. Cost of different procedures was determined from the 2016 American Dental Association Dental Fees Survey. Cost-effectiveness analysis was performed for different treatment modalities.

RESULTS: Six studies met the inclusion criteria. Meta-analysis resulted in a survival rate of 89.1% (95% confidence interval, 83.8%-94.4%). Compared with a single-tooth implant, intentional replantation was more cost-effective even when custom post/core and crown are also needed.

CONCLUSION: The meta-analysis revealed a high survival rate for intentional replantation. Although the survival rate of implants is higher, intentional replantation is a more cost-effective treatment modality. Intentional replantation should be a treatment option discussed with patients, especially because an implant can still be placed if intentional reimplantation is unsuccessful.

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BACKGROUND/AIM: The condylar fracture is among the most frequent facial fractures. Despite all the published studies, its treatment remains controversial. The aim of this retrospective study was to evaluate the epidemiology and complications of mandibular condyle fractures managed by surgical and conservative treatments, over a period of twenty years.

MATERIAL AND METHODS: The files of 262 patients with 318 condyle fractures were included in this study. One hundred and seven patients had conservative management, and 155 had surgical management for the condylar fractures. The outcomes were assessed by reviewing the patient's clinical records.

RESULTS: The prevalence was higher in males and most patients were Caucasians in the third decade of life. The mean age was 30.17 years old. The main causes were motorcycle accidents followed by bike accidents, and the mean follow-up time was 226.5 days. The number of complications found in the two modalities of treatment was low and similar.

CONCLUSION: Both treatments achieved their goals. There was no statistical difference in the complication rate between the two groups.

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Authors:
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Title:
Traumatic dental injury research: on children or with children?. [Review]

Source:

Local Messages:
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Abstract:
BACKGROUND AND AIM: It is widely acknowledged that children should participate in healthcare decisions, service development and even setting research agendas. Dental traumatology is a major component of paediatric dentistry practice and research. However, little is known about young patients' contribution to new knowledge in this field. The aim of the study was to establish the extent to which children are involved in contemporary dental trauma research and to evaluate the quality of the related literature.

MATERIAL AND METHODS: A systematic review of the dental trauma literature was conducted from 2006 to 2014. The electronic databases, MEDLINE and Scopus, were used to identify relevant studies. The selected papers were independently examined by five calibrated reviewers. Studies were categorized by the degree of children's involvement and appraised using a validated quality assessment tool.

RESULTS: The initial search yielded 4374 papers. After application of the inclusion and exclusion criteria, only 96 studies remained. Research on children accounted for 87.5% of papers, and a proxy was involved in 4.2%. Children were engaged to some degree in only 8.3% of studies, and there were no studies where children were active research participants. In the quality assessment exercise, papers scored, on average, 57% (range = 14-86%).

CONCLUSION: There is scope to encourage more active participation of children in dental trauma research in the future. Furthermore, there are some areas where the quality of research could be improved overall.

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Title
Management of Pediatric and Adolescent Condylar Fractures. [Review]

Source

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Title
Plating Options for Fixation of Condylar Neck and Base Fractures. [Review]

Source

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Title
Soft Tissue Trauma in the Temporomandibular Joint Region Associated with Condylar Fractures. [Review]

Source

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Title
Matching Surgical Approach to Condylar Fracture Type. [Review]

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Title
Secondary Treatment of Malocclusion/Malunion Secondary to Condylar Fractures. [Review]

Source

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Title
The Biology of Open Versus Closed Treatment of Condylar Fractures. [Review]

Source

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Title
The Role of Intra-articular Surgery in the Management of Mandibular Condylar Head Fractures. [Review]
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Title
Virtual Surgical Planning and Intraoperative Imaging in Management of Ballistic Facial and Mandibular Condylar Injuries. [Review]
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Title: Anatomy and Biomechanics of Condylar Fractures. [Review]
Publication Type: Journal Article. Review.
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Title: Classification of Mandibular Condylar Fractures. [Review]
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Title: Locking Plate System Versus Standard Plate Fixation in the Management of Mandibular Fractures: Meta-Analysis of Randomized Controlled Trials.
Abstract: PURPOSE: The aim of this meta-analysis was to evaluate the efficacy of the 2.0-mm locking miniplate system in comparison with the standard miniplate system in treatment of mandible fractures.

METHODS: A systematic review was conducted according to PRISMA guidelines, examining Medline-Ovid, Embase, and PubMed databases, eligible studies were restricted to comparative controlled trials. Inclusion criteria were based on humans randomized controlled trials, controlled clinical trials, with the aim of comparing 2 fixation techniques, namely locking miniplate and standard miniplate (nonlocking miniplate) techniques. In addition, the incidence of complications was evaluated.

RESULTS: Nine studies with 380 patients and 551 fracture sites were enrolled into the analysis. The results showed that there were no significant differences in overall complications (odds ratio [OR], 0.64; 95% confidence interval [CI], 0.34-1.22; P = 0.2), postoperative infection (OR, 0.53; 95% CI, 0.23-1.23, P = 0.15), and occlusion discrepancy (P > 0.05) when comparing 2.0-mm locking miniplates with 2.0-mm nonlocking miniplates in treating mandible fractures. However, the use of 2.0-mm locking miniplates had a lower postoperative maxillomandibular fixation rate than the use of 2.0-mm nonlocking miniplates (OR, 0.43; 95% CI, 0.22-0.83; P < 0.0001).

CONCLUSIONS: Mandible fractures treated with 2.0-mm locking miniplates and standard 2.0-mm miniplates present similar short-term complication rates, and the low postoperative maxillomandibular fixation rate of using 2.0-mm locking miniplates also indicates that the 2.0-mm locking miniplate has a promising application in treatment of mandibular fractures.
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RECENT REVIEWS RELATED TO DENTOALVEOLAR TRAUMA

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Title
Influence of third molars in mandibular fractures. Part 1: mandibular angle-a meta-analysis. [Review]

Source

Abstract
The aim of this systematic review was to investigate the influence of the presence and position of mandibular third molars on angle fractures. An electronic search was conducted in the PubMed, Scopus, Web of Science, Cochrane Library, and VHL databases, through January 2016. The eligibility criteria included observational studies. The search strategy resulted in 704 articles. Following the selection process, 35 studies were included in the systematic review and 28 in the meta-analysis. Twenty studies presented a score of <=6 stars in the Newcastle-Ottawa scale assessment, indicating a risk of bias in the analysis. The presence of a mandibular third molar increases the chance of an angle fracture (case-control and cross-sectional studies: odds ratio (OR) 3.83, 95% confidence interval (CI) 3.02-4.85, I<sup>2</sup>=83.1%; case-control studies: OR 3.27, 95% CI 2.57-4.16, I<sup>2</sup>=81.3%). The third molar positions most favourable to angle fracture according to the Pell and Gregory classification are class B (OR 1.44, 95% CI 1.06-1.96, I<sup>2</sup>=87.2%) and class II (OR 1.67, 95% CI 1.36-2.04, I<sup>2</sup>=72.4%). Class A (OR 0.60, 95% CI 0.45-0.81, I<sup>2</sup>=87.4%) and class I (OR 0.51, 95% CI 0.37-0.71, I<sup>2</sup>=89.4%) act as protective factors for angle fracture. The results suggest that the presence of the third molar increases the chance of angle fracture by 3.27 times and that the most favourable positions of the third molar for angle fracture are classes B and II, whilst classes A and I act as protective factors.

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Authors
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Influence of third molars in mandibular fractures. Part 2: mandibular condyle—a meta-analysis. [Review]

Source

Abstract
The aim of this systematic review was to investigate the influence of the presence and position of mandibular third molars in mandibular condyle fractures. An electronic search was conducted in PubMed, Scopus, Web of Science, Cochrane Library, and VHL, through January 2016. The eligibility criteria included observational studies. The search strategy resulted in 704 articles. Following the selection process, 13 studies were included in the systematic review and 11 in the meta-analysis. In terms of the risk of bias analysis, six studies presented <=6 stars in the Newcastle-Ottawa scale assessment. The presence of a mandibular third molar decreased the probability of condylar fracture (cross-sectional and case-control studies: odds ratio (OR) 0.26, 95% confidence interval (CI) 0.17-0.40, I²=87.8%; case-control studies: OR 0.30, 95% CI 0.16-0.58, I²=91.6%). The third molar positions most favourable to condylar fracture according to the Pell and Gregory classification are class A (OR 1.32, 95% CI 1.09-1.61, I²=0%) and class I (OR 1.37, 95% CI 1.05-1.77, I²=32.8%). Class B (OR 0.69, 95% CI 0.49-0.97, I²=56.0%) and class II (OR 0.71, 95% CI 0.57-0.87, I²=0%) act as protective factors for condylar fracture. The results suggest that the presence of a mandibular third molar decreases the chance of condylar fracture and that the positions of the third molar most favourable for condylar fracture are classes A and I, with classes B and II acting as protective factors.

A review of mouthguards: effectiveness, types, characteristics and indications for use. [Review]

Source

Abstract
Participation in sport carries an increased risk of sustaining dental trauma which can be reduced by the use of a mouthguard. Mouthguards work by dissipating the force of impact, thus reducing the force which is transferred to the dentition. There are different types of mouthguard available which vary in design, costs and the level of protection provided. This article aims to review the use of mouthguards in sport, the common barriers to their use and also the different types of mouthguards and their characteristics.

A review of mouthguards: effectiveness, types, characteristics and indications for use. [Review]

Source
Radiographic diagnosis of root fractures: a systematic review, meta-analyses and sources of heterogeneity. [Review]

Source

Abstract
OBJECTIVES: Many studies to evaluate the accuracy of root fracture diagnosis have been conducted. However, there is a scarcity of studies to assess the quality and the sources of heterogeneity in the literature. For this reason, the aim of this study was to conduct systematic reviews and meta-analyses to summarize the available evidence on detection of root fractures by cone beam CT (CBCT) and periapical radiograph (PR) images and the interference of artefact by investigating possible sources of heterogeneity.

METHODS: Studies reporting root fracture detection, from January 2010 to February 2016, were selected. All selected studies were subjected to selection criteria and then, comparative and qualitative analyses by using the quality assessment of diagnostic accuracy studies (QUADAS-2) tool were performed. Pooled sensitivity, specificity and diagnostic odds ratios were calculated. Also, receiver operator characteristics (ROC) curves were built to summarize the results. SROC curve analyses were performed to investigate the heterogeneity among studies.

RESULTS: Initially, 799 articles were selected. After screening titles and abstracts, 743 articles were excluded. After reading the remaining 56 full-texts, 47 relevant articles were included in this study. Diagnostic odds ratio values revealed a wide range of results across the studies and determined a higher heterogeneity for PR compared with CBCT. The analyses of the SROC curves compared CBCT imaging versus PR in the diagnosis of root fracture, favouring CBCT modality.

CONCLUSIONS: CBCT was the imaging exam that rendered a higher diagnostic accuracy for root fractures.
BDA LIBRARY MEDLINE SEARCH

RECENT REVIEWS RELATED TO DENTOALVEOLAR TRAUMA

Status
MEDLINE

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Title
Effect of bisphosphonates on root resorption after tooth replantation - a systematic review. [Review]

Source

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Abstract
BACKGROUND/AIM: Replantation of avulsed teeth may lead to root resorption. Bisphosphonates (BPs), a class of drugs of used to treat resorptive diseases of the bone such as osteoporosis and Paget's disease, have been observed to exert an antiresorptive effect on periodontal bone as well. The antiresorptive properties of BPs could prove them useful in preventing root resorption of replanted avulsed teeth. The aim of this systematic review was to analyze and summarize the currently available literature concerning the use of BPs in preventing root resorption of avulsed teeth.

MATERIALS AND METHODS: PubMed/MEDLINE, Google Scholar, ISI Web of Knowledge, and Embase databases were searched using keywords 'bisphosphonate', 'replantation', and 'tooth'. Quality assessment of each study was carried out. In addition, general characteristics and outcomes of each study were summarized.

RESULTS: After exclusion of 116 irrelevant articles, 10 animal studies were included in this review. The majority of the studies suggest that surface application of zoledronate or alendronate reduces root resorption of replanted teeth in animal models. Surface treatment with etidronate had no significant effect on root resorption, and intracanal etidronate accelerated resorption.

CONCLUSION: Surface application of zoledronate and alendronate reduces root resorption of replanted teeth in animal models. However, the efficacy of intracanal usage of BPs is still debatable.

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Title
The attention-deficit/hyperactivity disorder model for traumatic dental injuries: a critical review and update of the last 10 years. [Review]

Source

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Abstract
It has been more than 10 years since the proposal of attention-deficit/hyperactivity disorder (ADHD) model as an explanatory construct for traumatic dental injuries (TDIs) in children. The aim of this review was to address developments in the study of the issue after 2005-2016. A systematic literature search covering the period from 2005 to 2016 was conducted on PubMed, the Cochrane library and Google Scholar using relevant keywords. Fourteen studies exploring the relationship between ADHD and TDIs from 2005 and onward (including the proposal paper) were identified. Of the 12 controlled studies, nine reported confirming findings for a link with ADHD in the occurrence of TDIs. More than one-third of all children with ADHD may suffer from TDIs. In
ADHD children, the most common types of injury were uncomplicated/complicated crown fractures and subluxation of maxillary central incisors resulting from falls and collisions. There is also evidence that ADHD represents an independent risk factor other than the well-established risk factor of incisor overjet. Over the last 10 years, convincing evidence has accumulated that ADHD is an important and common risk factor for TDIs. Increased awareness and side-by-side work of medical, dental and mental professionals at both clinical and research settings are necessary.

Abstract

Of all mandibular fractures, 25-35% are condylar. Many studies have focused on whether to treat such fractures via open or closed modalities. A uniform protocol for closed treatment is lacking, but such a protocol could ensure good clinical practice. The aims of this systematic review were to provide an overview of the published studies exclusively pertaining to closed treatment and to summarize the existing modalities for closed treatment and their clinical outcomes. Sixteen studies were selected for detailed analysis. The treatments given were highly variable, ranging from doing nothing to applying maxillomandibular fixation with stainless steel wires. The results of the different studies and the treatment modalities used were difficult to interpret; however no clear differences in the outcome measures were seen between the treatment modalities applied. Complications encountered after closed treatment included malocclusion, limited mouth opening, reduced range of motion, and persistent pain. Due to the heterogeneity between groups, high loss-to-follow-up, poor descriptions of the treatments given, and variability in outcome measurement methods, no clear associations between adverse outcomes and the treatments applied could be determined. This review suggests that due to the high level of methodological variability in the relevant studies published to date, there are currently no uniform standards for the closed treatment of condylar fractures that can be expected to yield good clinical results. The establishment of such standards could potentially improve treatment outcomes.
BDA LIBRARY MEDLINE SEARCH

RECENT REVIEWS RELATED TO DENTOALVEOLAR TRAUMA

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Title
Treatment of Extrusive Luxation in Permanent Teeth: Literature Review with Systematic Criteria. [Review]

Source

Abstract
INTRODUCTION: Extrusive luxation is a traumatic dental injury caused by the action of oblique forces, characterized by partial displacement of the tooth out of its socket. The ideal treatment for this type of trauma involves repositioning the tooth in its socket. However, in cases where the tooth cannot be repositioned, different options may be considered, such as intentional reattachment and orthodontic intrusion. The aim is to review the literature on the extrusive luxation of permanent teeth while assessing the risks of complications for two methods of delayed treatment for extrusive luxation.

MATERIALS AND METHODS: An electronic search from August 2005 to August 2014 was performed by two reviewers independently, and conflicts were resolved by a third reviewer. The databases used were PubMed and Scopus; the reviewers performed a manual search of the following journals: Dental Traumatology, American Journal of Orthodontics, and Clinical Oral Investigation.

RESULTS: After removing the duplicate studies, 328 articles were found. Out of these, 321 were rejected as not addressing the proposed research topic. In addition, five articles were excluded because apical repositioning was used for treatment. Therefore, four articles formed the basis of the study.

CONCLUSION: Factors, such as root formation, the degree of tooth mobility, and the presence of tooth vitality were decisive for the choice of treatment. However, both treatments were effective and showed favorable results, i.e., without periodontal and root damage.

CLINICAL SIGNIFICANCE: Knowledge of the risks of complications among two methods of delayed treatment for extrusive luxation, as well as other important factors to take into consideration when choosing a treatment assists dentists in improving the prognostic.

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Title
Late mandibular fracture occurring in the postoperative period after third molar removal: systematic review and analysis of 124 cases. [Review]

Source

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Factors associated with the diagnosis, aetiology, and treatment of mandibular fractures occurring during the postoperative period following the removal of a lower third molar are discussed. The following databases were searched using specific key words: PubMed/MEDLINE, LILACS, Embase, and Scopus. The search yielded 124 cases. Sex, age, side, tooth position and angulation, bone impaction, relationship between the tooth and the inferior alveolar nerve, local pathological conditions, aetiology of the fracture, symptomatology, and time between surgery and fracture, as well as any displacement of the fracture and the treatment of the fracture, were evaluated. Data were tabulated and the chi<sup>2</sup> statistical test was applied (P<0.05). Male patients aged >35 years, with teeth in positions II/III and B/C, complete bony impaction, and local bone-like alterations, were found to have a higher frequency of fracture and pericoronitis (P<0.05). Late fractures generally occurred between the second and fourth postoperative weeks (P<0.05). They were generally not displaced and the typical treatment was the non-surgical approach (P<0.05). It is concluded that the risk of mandibular fracture after extraction is associated with excessive ostectomy and/or local alterations. At-risk patients should be thoroughly briefed on the importance of a proper postoperative diet.

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Anteromedial dislocations of the mandibular condyle are frequently reported in the literature, but superolateral dislocation is a rare presentation.

This report outlines a case of superolateral dislocation of an intact mandibular condyle that occurred in conjunction with dental trauma. The association between trauma and dental caries is still controversial in the literature. The aim of this study was to evaluate the possible association between caries and dental trauma through a systematic review with meta-analysis.

A systematic literature search was performed in PubMed, Lilacs, BBO, Scopus, Web of Science, Cochrane Library, and Open Grey databases. The MeSH terms used were 'Tooth injuries', 'Tooth fractures', 'Tooth avulsion', 'Tooth movement'; 'Dental caries'; 'DMF index'; and 'Tooth demineralization'. MeSH synonyms, related terms, and free terms were included. The inclusion criteria comprised clinical investigations of subjects with and without caries that had suffered dental trauma. Quality assessment and bias control were carried out. Meta-analysis was performed using the comprehensive meta-analysis software (version 3.2). Heterogeneity was assessed using the I\(^2\) index, and the odds ratio was also calculated (P < 0.05).

RESULTS: From 1290 abstracts, seven met the inclusion criteria. All studies had high methodological quality and five were included in the meta-analysis. The results demonstrated a positive association (P < 0.001) between dental trauma and dental caries in permanent teeth [OR: 1.490, 95%, CI: 1.209-1.835]. However, for children with primary teeth, the results showed a negative association (P = 0.006) between dental trauma and caries [OR: 0.706, 95%, CI: 0.550-0.906].

CONCLUSIONS: The results demonstrated positive and negative association between the presence of caries and dental trauma in permanent and primary teeth, respectively.

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Abstract
Is caries a risk factor for dental trauma? A systematic review and meta-analysis. [Review]
with an ipsilateral mandibular parasymphysis fracture. A review of the clinical features of superolateral dislocation of the mandibular condyle and the possible techniques of its reduction ranging from the most conservative means to extensive surgical interventions is presented.

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Title

Source

Abstract
Ankylosic root resorption is a serious complication following traumatic dental injuries. The aetiology of root resorption includes acute injury to the cementum and periodontal ligament, and subsequent biological processes that propagate the harm. The aim of the present paper is to present a structured treatment protocol for teeth that have experienced trauma and are at risk of developing ankylosic root resorption, followed by a decoronation protocol for situations in which ankylosic root resorption developed. This protocol provides a structured road map from the primary dental trauma, through the initial development of ankylosis detected radiographically, to the clinical manifestation that results in significant infra-occlusion. The current protocol integrates the best available evidence from the literature and from published guidelines. Ample contradictory data, which mainly consists of case reports related to the treatment of ankylosic root resorption, is available in the current literature. No accepted protocol or uniform guidelines for treatment in these cases exist, and many clinicians prefer avoiding replantation of an avulsed tooth that seems to have an uncertain long-term prognosis, or performing decoronation when infra-occlusion developed. As a result, young patients lose the benefits associated with replantation and decoronation procedures. The option of re-implantation of the avulsed teeth should be considered irrespective of the negative long-term prognosis. Following ankylosis development, the goal of submerging the tooth root (decoronation) is to maintain the horizontal dimension of the alveolar ridge and also to gain vertical dimension, allowing implant placement in the future.

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Title
Traumatically Intruded Permanent Teeth: Three Case Reports and a Review of Current Recommendations. [Review]

Source

Abstract
Intrusion of permanent teeth is not extensively covered in the literature compared to other injuries. Treatment guidelines have been published and clinical data is accumulating to support the current recommendations, which are illustrated in the three cases here. This review evaluates the current information about management of traumatically intruded permanent teeth. As more data accumulates, uncertainties with respect to both treatment recommendations and long-term outcomes can be expected to be elucidated.
Acute dental emergencies are a common chief complaint presenting to emergency departments, and they are increasing substantially in frequency. The diagnosis and management of dental emergencies is a core competency of the emergency clinician, and proper therapeutic strategies can significantly improve cosmetic and functional outcomes for patients. This issue provides a systematic review of the literature on common acute traumatic and atraumatic dental emergencies with a focus on the historical and physical examination findings that must be understood to identify life-threatening infections, relieve pain, salvage natural teeth, and communicate with specialists in the further management of patients after emergency treatment.

Abstract

Denosumab, a bone-modifying agent, reduces the risk of skeletal-related events in patients with bone metastases from solid tumors and is generally well tolerated. However, hypocalcemia, osteonecrosis of the jaw (ONJ) and atypical fracture are potential and important toxicities of denosumab therapy that require attention. In pivotal phase III trials in patients with bone metastases from solid tumors, the incidence of hypocalcemia was 9.6% in denosumab-treated patients, with most events being asymptomatic, grade 2 and resolving by week 4. Established hypocalcaemia requires additional short-term calcium and vitamin D supplementation and, if severe, administration of intravenous calcium. ONJ was reported in 1.8% of patients receiving denosumab over 3 years in these trials. Involvement of an experienced oromaxillary surgeon is important if ONJ is suspected. Atypical fractures were rare in a large study of denosumab using the dose and scheduling approved for the treatment of osteoporosis. To prevent toxicities, patients should maintain calcium and vitamin D supplementation, good oral hygiene and regular dental reviews throughout treatment. This article presents case studies from our clinical practice and discusses the pathophysiology of these toxicities along with guidance on prevention, diagnosis and management.
Complications associated with the treatment of fractures of the dentate portion of the mandible in paediatric patients: a systematic review. [Review]

Comment

Comment in: J Am Dent Assoc. 2017 Jul;148(7):e87; PMID: 28651718

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Abstract

This study aimed to answer the following question: What is the best treatment option for fractures of the dentate portion of the mandible in paediatric patients when considering the occurrence of postoperative complications? A systematic literature review was done using the PubMed, Scopus, and Cochrane Library databases, and 1186 articles on the topic were found. Twelve of these articles were included in the final review after the full texts had been read. A sample of 178 paediatric patients was obtained.

In the six cases in which treatment was surgery with titanium plate fixation, there were no postoperative complications, whereas in the 141 cases in which treatment was surgery with biodegradable plates, there were 12 postoperative complications, and in the 31 cases in which treatment was non-surgical, there were three postoperative complications. A connection between the best treatment and the number of postoperative complications in fractures of the dentate portion of the mandible in paediatric patients could not be established; however, the occurrence of postoperative complications was low for both surgical and non-surgical treatments.

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Title

Predictive Value of Panoramic Radiography for Injury of Inferior Alveolar Nerve After Mandibular Third Molar Surgery. [Review]

Comments


Source

Atrophic mandible fractures: Are bone grafts necessary? An update. [Review]

MATERIALS AND METHODS: We performed a review of the English-language literature looking for atrophic mandibular fractures with or without continuity defects and reconstruction without bone grafts. Included are 2 new patients from our institution who presented with fractures of their atrophic mandibles and had continuity defects and infections. Both patients underwent reconstruction with a combination of a reconstruction plate, recombinant human bone morphogenetic protein 2, and tricalcium phosphate. This study was approved as an "exempt study" by the Institutional Review Board at the University of Kentucky. This investigation observed the Declaration of Helsinki on medical protocol and ethics.

RESULTS: Currently, the standard of care to manage atrophic mandibular fractures with or without a continuity defect is a combination of a reconstruction plate plus autogenous bone graft. However, there is a need for an alternative option for patients with substantial comorbidities. Bone morphogenetic proteins, with or without additional substances, appear to be a choice. In our experience, successful healing occurred in patients with a combination of a reconstruction plate, recombinant human bone morphogenetic protein 2, and tricalcium phosphate.

CONCLUSIONS: Whereas primary reconstruction of atrophic mandibular fractures with reconstruction plates supplemented with autogenous bone graft is the standard of care, in selected cases in which multiple comorbidities may influence local and/or...
systemic outcomes, bone morphogenetic proteins and tricalcium phosphate can be used as a predictable alternative to autogenous grafts.

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Title
How Is Third Molar Status Associated With the Occurrence of Mandibular Angle and Condyle Fractures?. [Review]

Source

Abstract
PURPOSE: Third molars (M3s) have been hypothesized to be associated with the risk of mandibular angle fracture and mandibular condylar fracture. The authors systematically estimated the relative risk (RR) of M3 status for the development of mandibular angle fracture and mandibular condylar fracture through a meta-analysis of cohort studies.

MATERIALS AND METHODS: In this systematic review, the PubMed, EMBASE, and Cochrane Library databases were searched from inception to October 2016. The predictor of risk was the presence or absence of M3s. The primary outcome was the RR of mandibular angle or condylar fracture. A fixed- or a random-effects model was applied to evaluate the pooled risk estimates. Sensitivity analysis also was performed to identify the potential sources of heterogeneity. Publication bias was assessed by the Begg and Egger tests.

RESULTS: Overall, 13 retrospective cohort studies were included. Of these, 13 reported the association between M3s and mandibular angle fracture, and 5 reported the association with mandibular condylar fracture. Patients with M3s had an increased risk of mandibular angle fractures (RR = 2.63; 95% confidence interval [CI], 2.15-3.21) but a decreased risk of mandibular condylar fractures (RR = 0.47; 95% CI, 0.25-0.86). Substantial heterogeneity in the risk estimates was found. No evidence of publication bias was found.

CONCLUSION: The present meta-analysis provides further evidence associating the presence of M3s with an increased risk of mandibular angle fractures and a simultaneously decreased risk of mandibular condylar fracture. Because of potentially more serious complications associated with condylar fracture, clinicians should carefully consider the decision to remove M3s to decrease the risk of mandibular angle fracture.
Dental and Orofacial Injuries. [Review]

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Abstract
Oral and facial injuries are very common in sport, and can be very expensive to treat. Many of these injuries are preventable with proper pre-competition assessment and suitable well-designed protection. Prompt sideline identification and management of orofacial injuries and appropriate follow-up are crucial to successful outcomes. There have been significant recent advances in both trauma management and mouth guard design and fabrication techniques. Athletes have a unique set of challenges-including collisions, finances, travel and training, dehydration, sport beverages, and high carbohydrate diets-that may compromise their oral health.

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Open Reduction With K-Wire Stabilization of Fracture Dislocations of the Mandibular Condyle: A Retrospective Review.

Authors
Haghighi K; Manolakakis MG; Balog C.

Abstract
PURPOSE: The aim of this study was to determine the feasibility of direct transcortical stabilization of fracture dislocations of the mandibular condyle (FDMCs) using narrow-diameter non-threaded Kirschner wire (K-wire).

RESULTS: Three patients had bilateral FDMCs and 9 had unilateral FDMCs (age range at time of injury, 14 to 72 yr; mean age, 32 yr). Postoperative follow-up ranged from 6 weeks to 2 years. Four patients required removal of K-wire hardware for different reasons. K-wires were removed because of infection in 1 patient. Another patient required removal because of migration of the pin into the joint space. One pin was removed electively and another was removed for nonspecific postoperative symptoms that resolved after pin removal. Persistent facial nerve deficit was observed in 1 patient.

CONCLUSION: Open reduction with transcortical K-wire stabilization can achieve satisfactory outcomes for the treatment of FDMC. Further investigation is needed in determining the efficacy of this fixation technique in the management of FDMC.
that orbital exploration and repair, when undertaken to manage diplopia, can resolve (75%), improve (7.14%), stabilize (7.14%)

used to assess each of these variables and their potential relationship to the occurrence of diplopia.

MATERIALS AND METHODS: We undertook a retrospective cohort study with a review of the records of 126 consecutive patients who had undergone repair of an orbital floor fracture under the maxillofacial surgery service at John Hunter Hospital (Newcastle, NSW, Australia). The primary predictor variables were a number of demographic, etiologic, and operative factors that might influence the occurrence of diplopia. The secondary outcome variable was diplopia. A descriptive statistical analysis was used to assess each of these variables and their potential relationship to the occurrence of diplopia.

RESULTS: Of the 126 patients included in our study, 84 (66.6%) were treated for diplopia and 42 (33.3%) for dystopia. We found that orbital exploration and repair, when undertaken to manage diplopia, can resolve (75%), improve (7.14%), stabilize (7.14%), or
CONCLUSIONS: Diplopia is a common occurrence that results from orbital floor fracture. It can resolve, persist (improve, remain stable, or worsen), or be induced after repair of such an injury. In addition to the known myogenic cause (entrapment) of diplopia, both trauma and surgical manipulation have been shown to have the capacity to compromise ocular motor nerve function and possibly result in the development of neurogenic causes of diplopia. It has also been noted that several intraorbital adherence syndromes can potentially contribute to the development of diplopia. This is an area that requires further research.

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OBJECTIVE: Various techniques have been employed from time to time to achieve maxillomandibular fixation. Although arch bars provide an effective and versatile means of maxillomandibular fixation, their use is not without shortcomings. However the introduction of intermaxillary fixation screws (IMF) has eliminated many of these issues of arch bars. The aim of the present study was to compare the advantages and disadvantages of intermaxillary fixation screws over the Erich arch bars in mandibular fractures.

MATERIALS AND METHODS: Sixty dentulous patients who reported to Department of Oral and Maxillofacial Surgery, Al-Ameen Dental College and Hospital, Bijapur with mandibular fractures and required intermaxillary fixation as a part of treatment plan followed by open reduction and internal fixation under GA were selected and randomly divided into 2 groups of 30 patients each that is Group A and Group B. Group A included patients who received intermaxillary fixation with Erich arch bars. Group B included patients who received intermaxillary fixation with IMF Screws. The parameters compared in both the groups included, surgical time taken, gloves perforation, post-operative occlusion, IMF stability, oral hygiene, patient acceptance and comfort and non-vitality characteristics.

RESULTS: The average surgical time taken and gloves perforations were more in Group A, the patient acceptance and oral hygiene was better in Group B, there was not much statistically significant difference in postoperative occlusion and IMF stability in both groups. Accidental root perforation was the only limitation of IMF Screws.

CONCLUSION: Intermaxillary fixation with IMF screws is more efficacious compared to Erich arch bars in the treatment of mandibular fractures.
OBJECTIVE: The aim of this systematic review and meta-analysis was to search for scientific evidence regarding the factors associated with traumatic dental injury (TDI) in the primary dentition.

METHODOLOGY: An electronic search addressing factors associated with TDI was conducted in the PubMed, ISI, LILACS, Cochrane Library, and Embase databases. Data were extracted and analyzed regarding risk factors, statistical test, effect measures, and study design.

RESULTS: The online search strategy led to the initial retrieval of 2566 articles. After evaluating the titles and abstracts, 24 papers were selected for complete review and data collection. TDI was associated with males (OR: 1.24; 95%CI: 1.09-1.41), inadequate lip coverage (OR: 1.81; 95%CI: 1.50-2.17), overbite (OR: 1.438; 95%CI: 0.94-2.19), and age (1 vs 2 years - OR: 0.47; 95%CI: 0.31-0.69).
CONCLUSIONS: Males, older children, and those with inadequate lip coverage, overbite, or overjet are more likely to have TDI in the primary dentition.
The use of three-dimensional strut plates for the management of mandibular angle fractures: a retrospective analysis of 222 patients.

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Title
Bad splits in bilateral sagittal split osteotomy: systematic review of fracture patterns. [Review]

Source

Abstract
An unfavourable and unanticipated pattern of the mandibular sagittal split osteotomy is generally referred to as a 'bad split'. Few restorative techniques to manage the situation have been described. In this article, a classification of reported bad split pattern types is proposed and appropriate salvage procedures to manage the different types of undesired fracture are presented. A systematic review was undertaken, yielding a total of 33 studies published between 1971 and 2015. These reported a total of 458 cases of bad splits among 19,527 sagittal ramus osteotomies in 10,271 patients. The total reported incidence of bad split was 2.3% of sagittal splits. The most frequently encountered were buccal plate fractures of the proximal segment (types 1A-F) and lingual fractures of the distal segment (types 2A and 2B). Coronoid fractures (type 3) and condylar neck fractures (type 4) have seldom been reported. The various types of bad split may require different salvage approaches.
BDA LIBRARY MEDLINE SEARCH

RECENT REVIEWS RELATED TO DENTOALVEOLAR TRAUMA

MEDLINE

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Title
Dental avulsions: Review and recommendations. [Review]

Source

Abstract
Tooth avulsion injuries are common. This article will review causes of tooth avulsion and provide management guidelines. Recommendations for NP education and practice will be reviewed.

Publication Type
Journal Article. Review.

Year of Publication
2016

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27649719

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Title
Management of maxillofacial fractures within three years of empirical findings. [Review]

Source

Abstract
OBJECTIVES: To investigate which treatment of maxillofacial fractures is more effective and what type of complications is the most common after observed treatment. The second aim is to explore relationship between treated facial bone fractures and temporomandibular joint (TMJ) pathology.

MATERIAL AND METHODS: Cases with TMJ pathology in Lithuanian University of Health Sciences (LUHS) in the Department of Maxillofacial Surgery (MS) during 2012-2014 were analysed to research the occurrence of TMJ disorders after facial bone fracture treatment. Moreover, the clinical data of patients that were treated in LUHS in the Department of MS during 2012-2014 was collected and analysed.

RESULTS: Male patients had higher fracture ratio (zygomatic and maxillary - 84%, mandibular - 89.72%). Complications occurred in 6% of the patients in a zygomatic and maxillary fractures group, mainly as an infraorbital nerve injury. Closed reduction and indirect fixation were performed for mandibular patients 49.7%. The ratio of complications for mandibular fractures was 6.1%. There were complications in group with the open reduction and direct fixation (24.2%, mostly osteomyelitis), when in the closed reduction and indirect fixation group (42.4%, mostly bone healing complications). There were no patients with TMJ pathology as a complication after facial bone fracture treatment.

CONCLUSIONS: Fractures treatment technique differs in all cases because of individual characteristics and treatment variations. In the open reduction and direct fixation group complications occurred in fewer cases than in the closed reduction and indirect fixation group. Well-timed fracture bone treatment leads to non-occurrence of TMJ complications.

Publication Type
Journal Article. Review.

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2016

Unique Identifier
28826467

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Institution
Adult Dental Trauma: What Should the Dental Practitioner Know? [Review]
Source
Primary Dental Journal. 5(3):70-81, 2016 Aug 01.

Abstract
The management of adult dental trauma can be a daunting challenge for practitioners at any level. Like medical emergencies, initial management can have a large influence on prognosis. It is important that practitioners understand the basic principles of managing the acute presentations of dental trauma. This article aims to illustrate a step-by-step approach in order to improve the management within general dental practice for better outcomes for patients.

Comment in: J Chin Med Assoc. 2017 Dec;80(12):808; PMID: 29033115
Source

BACKGROUND: Perioperative dental injury (PDI) is a common adverse event associated with anesthesia that can easily lead to medicolegal litigation. A quality improvement program was conducted with the electronic, standardized dental chart to document dentition before anesthesia and dentist consultation when necessary. This study aimed to reduce PDIs through execution of a quality improvement program.

METHODS: We reviewed the 42-month interval anesthetic records of 64,718 patients who underwent anesthesia. A standardized electronic dental chart was designed to identify any dental prosthetics, fixed and removable dentures, and degree of loose teeth. The incidence of dental injuries associated with anesthesia was separated into three time periods: baseline, initiative (Phase I), and execution (Phase II). Primary outcome measurement was the incidence of PDIs related to anesthesia.

RESULTS: The overall incidence of dental injury related to anesthesia was 0.059% (38/64,718 patients). During the baseline period, the dental injury rate was 0.108% (26/24,137 patients), and it decreased from 0.051% in the initiative period (10/19,871 patients) to 0.009% in the execution period (2/20,870 patients) during implementation of the quality improvement program. Most dental injuries were associated with laryngeal mask airway (42.1%) and laryngoscopy (28.9%). The most commonly involved teeth were the upper incisors.

CONCLUSION: Dental injury incidence was significantly reduced and remained at low levels after implementation of the quality improvement program. We suggest the implementation of a standardized dental examination into the preoperative evaluation system adding pathologic teeth fixed or protected devices to minimize dental injury associated with anesthesia.
BACKGROUND: Mandibular fractures are common facial injuries and treatment may be complicated by post-operative infection. Risk of infection from contamination with oral flora is well established but no consensus exists regarding antibiotic prophylaxis. The purpose of this study is to assess risk factors and perioperative antibiotics on surgical site infection (SSI) rates following mandibular fracture surgery.

METHODS: Retrospective medical record review was completed for trauma patients of any age surgically treated for mandibular fractures at a Level I Trauma Center from September 2006 to June 2012. Outcomes analysis was performed to determine SSI rates related to perioperative antibiotic use and other risk factors that may contribute to SSI.

RESULTS: 359 patients met inclusion criteria for analysis. 76% were male. Mean age was 30.5 years. Thirty-eight patients developed SSI (10.8%). SSI rate was lower in closed versus open surgery (3.2% vs. 16.3%, p=0.0001), and in closed versus open fractures (1% vs. 14%, p=0.0005). SSI rate increased in patients with tobacco, alcohol, and drug use (14.6%, 13.2%, 53.6%, p<0.0001), traumatic dental injuries (19.6%, p=0.0110), and patients in motor vehicle crashes (12.2%, p=0.0062). SSI rates stratified by Injury Severity Score (ISS) less than or equal to 16 (23/255 [9%]) versus ISS greater than 16 (15/104 [14%]) trended toward more severely injured patients developing SSI, p=0.1347. SSI rate was similar in patients who did and did not receive operative antibiotic administration, and duration between injury and surgery did not effect SSI rate.

CONCLUSIONS: Findings suggest that following surgical treatment of mandible fractures, open surgery, open fractures, and risk factors including substance abuse, traumatic dental injury, and mechanism of injury significantly increase SSI rates, while post-operative antibiotics do not appear to provide additional benefit compared to pre-operative antibiotics alone.

LEVEL OF EVIDENCE: Therapeutic study, level IV.

Source

Abstract
Traumatic injuries to the primary dentition present special problems and the management is often different as compared with the permanent dentition. The International Association of Dental Traumatology (IADT) has developed a consensus statement after a review of the dental literature and group discussions. Experienced researchers and clinicians from various specialties were included in the task group. In cases where the data did not appear conclusive, recommendations were based on the consensus opinion or majority decision of the task group. Finally, the IADT board members were giving their opinion and approval. The primary goal of these guidelines is to delineate an approach for the immediate or urgent care for management of primary teeth injuries. The IADT cannot and does not guarantee favorable outcomes from strict adherence to the guidelines, but believe that their application can maximize the chances of a positive outcome.

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Source

Abstract
Avulsion of permanent teeth is one of the most serious dental injuries, and a prompt and correct emergency management is very important for the prognosis. The International Association of Dental Traumatology (IADT) has developed a consensus statement after a review of the dental literature and group discussions. Experienced researchers and clinicians from various specialties were included in the task group. The guidelines represent the current best evidence and practice based on literature research and
Guidelines for the Management of Traumatic Dental Injuries: 1. Fractures and Luxations of Permanent Teeth

Traumatic dental injuries (TDIs) of permanent teeth occur frequently in children and young adults. Crown fractures and luxations are the most commonly occurring of all dental injuries. Proper diagnosis, treatment planning and followup are important for improving a favorable outcome. Guidelines should assist dentists and patients in decision making and for providing the best care effectively and efficiently. The International Association of Dental Traumatology (IADT) has developed a consensus statement after a review of the dental literature and group discussions. Experienced researchers and clinicians from various specialties were included in the group. In cases where the data did not appear conclusive, recommendations were based on the consensus opinion of the IADT board members. The guidelines represent the best current evidence based on literature search and professional opinion. The primary goal of these guidelines is to delineate an approach for the immediate or urgent care of avulsed permanent teeth.
Policy on Intraoral/Perioral Piercing and Oral Jewelry/Accessories. [Review]

Source

Abstract
PURPOSE: Iatrogenic fracture of mandible (IFM) associated with exodontia though rare, they do occur with an incidence ranging from 0.0034 to 0.0075 %. Most of the data is in the form of case reports or a small case series. This is an attempt to amass the data available in literature since the last 62 years. The purpose of this meta-analysis is to identify the etiologies and risk factors leading to IFM associated with exodontia and also the measures to minimize the complication.

METHODS: Articles published between 1953 and 2015 were searched in Medline database. Data was collected and analyzed based on age, gender, extracted tooth, status of dentition, pathological bone lesion adjacent to the tooth, type of impaction, angulation of the impacted third molar, site of fracture, side of fracture, time of fracture, and treatment of fracture.

RESULTS: A review identified 200 documented cases of IFM associated with the removal of teeth. The reasons for its occurrence found to be multifactorial with a higher incidence in the fifth decade of life with male prevalence. Risk factors more commonly identified were removal of the third molar, fully dentate patient, associated pathology, impacted tooth, angle region, left quadrant, and time interval of 3 weeks postoperatively.

CONCLUSIONS: IFM related to the removal of teeth is a rare complication. Identifying and addressing the risk factors will enable the surgeon to avoid the complication of IFM associated with exodontia.
RECENT REVIEWS RELATED TO DENTOALVEOLAR TRAUMA

BDA LIBRARY MEDLINE SEARCH

Status
MEDLINE

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Title
Three dimensional versus standard miniplate fixation in management of mandibular fractures: A systematic review and meta-analysis. [Review]

Source

Abstract
PURPOSE: The aims of the present study were to 1) evaluate clinical outcomes between standard and three-dimensional (3D) miniplate fixation in the management of mandibular fractures and 2) determine which fixation method is the best option for the treatment of mandibular fractures.

MATERIALS AND METHODS: A comprehensive electronic search language without date was performed in July 2015. Inclusion criteria were studies in humans, including randomized controlled trials, controlled clinical trials, and retrospective studies, with the aim of comparing the two techniques. In addition, the incidence of complications was evaluated.

RESULTS: Seventeen publications were included: nine randomized controlled trials, three controlled clinical trials, and five retrospective studies. The meta-analyses showed statistically significant differences for the incidence of hardware failure, malocclusion, and postoperative trismus. There were no significant differences in the incidence of postoperative infection, wound dehiscence, non-union/malunion, and paresthesia. The cumulative odds ratio was 0.48, meaning that the use of 3D miniplates in the fixation of mandibular fractures decreases the risk of the event (postoperative complication) by 52%.

CONCLUSION: The results of this meta-analysis showed that the use of 3D miniplates was superior to the two-miniplate technique in reducing the incidence of postoperative complications in the management of mandibular fractures.

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Title
Total Alloplastic Joint Reconstruction in a Patient With Temporomandibular Joint Ankylosis Following Condylar Dislocation Into the Middle Cranial Fossa. [Review]

Source

Abstract

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27566458

Title
Total Alloplastic Joint Reconstruction in a Patient With Temporomandibular Joint Ankylosis Following Condylar Dislocation Into the Middle Cranial Fossa. [Review]

Source

Abstract
RECENT REVIEWS RELATED TO DENTOALVEOLAR TRAUMA

PURPOSE: Traumatic dislocation of the mandibular condyle into the middle cranial fossa is an extremely rare complication of maxillofacial injury. Management case of the of dislocation of the mandibular condyle complicated by bilateral temporomandibular joint ankylosis is presented.

MATERIALS AND METHODS: A 17 year old male patient presented to the outpatient clinic complaining of inability to open his mouth following a motor vehicle accident 6 months prior. Examination revealed bilateral TMJ ankylosis following left condylar head fracture and dislocation of the right condylar head into the middle cranial fossa. Bilateral total alloplastic TMJ reconstruction was performed.

RESULTS: MIO at a three-year follow-up was 35mm, occlusion was intact and the patient was functioning optimally.

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Publications


BACKGROUND: There are several treatment approaches for mandibular condyle fractures. Type of fracture, clinical experience, and preference of the operating surgeon dictate the approach. Given this highly varied outcome, this manuscript intends to document the treatment experience of 75 patients with extracapsular condyle fractures using author's modification of the traditional endaural approach in the region.

MATERIALS AND METHODS: A retrospective chart review was performed on patients with mandibular condylar fractures who visited the author's center between 2004 and 2014. For the surgical reduction and fixation, an endaural (ear) approach via the author's modification of Al-Kayat Bramley's incision in the superficial temporal region was used. Postoperative clinical parameters were evaluated which include the degree of mouth opening, chin deviation during mouth opening, occlusal relationship, temporomandibular joint function, radiographic stability, and other postoperative complications of condylar fractures such as infection, plate fracture, and permanent paralysis of facial nerve. Adolescence/adult patients with unilateral/bilateral condylar fracture who underwent open reduction with the follow-up of at least 1 year were included in the study. Edentulous and patients <15 years who underwent closed treatment were excluded from the study.

RESULTS: The study group consisted of 75 cases of mandibular condyle fractures, of which 55 cases were of unilateral condyle fractures and 20 cases were of bilateral condylar fractures. Postoperative follow-up of patients ranged from 1 to 10 years with the mean of 3.04 +/- 1.93 years. The occlusal relationships were excellent in all with the mean degree of mouth opening of 40.11 mm (maximum 4.5 cm and minimum 2.9 cm), of which four patients reported restricted mouth opening. Orthopantomogram and computed tomography showed complete anatomical reduction of the condyle fracture in all patients. Nine out of 75 patients developed transient facial weakness, with no other postoperative complications of condylar fractures such as infections, plate fracture, and permanent paralysis of facial nerve were noted. The overall success rate was 92%.

CONCLUSION: Surgery for mandibular condyle fractures with modified approach allows direct vision of the fracture and reduces surgical trauma to the site while avoiding permanent facial nerve injury. Hence, the author's modified Al-Kayat Bramley incision via endaural approach could be considered as the best approach for open reduction and internal fixation of condylar neck and subcondylar mandibular fractures.
CONCLUSION: The published data suggest that approximately 30% of patients receiving parenteral bisphosphonates and having sustained an AFF could develop comorbid MRONJ.

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Publication Type: Journal Article. Review.
Year of Publication: 2016

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Status: MEDLINE
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Pinholt, Else Marie. Professor, University of Southern Denmark, Faculty of Health Sciences, Institute for Regional Health Sciences, University of Southern Denmark Hospitals, Hospital of South West Denmark, Esbjerg, Denmark.
Title: Intermaxillary Fixation Screw Morbidity in Treatment of Mandibular Fractures - A Retrospective Study.

Abstract: PURPOSE: The aim of the present retrospective study was to investigate the morbidity of screws used for intermaxillary fixation (IMF) in the treatment of mandibular fractures. A review of the published data was also performed for a comparison of outcomes. Our hypothesis was that the use of screws for IMF of mandibular fractures would result in minimal morbidity.

MATERIALS AND METHODS: Patients treated for mandibular fractures from 2007 to 2013, using screws for IMF, using the international diagnosis code for mandibular fracture, DS026, were anonymously selected (Department of Oral and Maxillofacial Surgery, Rigshospitalet, University Hospital of Copenhagen, Copenhagen, Denmark). The fracture type, radiographic findings, treatment modality, screw type and number, and root damage were recorded. For the outcome comparison, a review of the published data regarding iatrogenic dental root damage caused by screw fixation was performed in May 2015.

RESULTS: A total of 156 patients had undergone IMF with screws. The total number of screws was 793. The incidence of root lesions was 0.25% centrally and 0.88% peripherally. The incidence of screw loss was 0.13% and that of screw loosening was 1.89%. In the review, 737 related reports were identified in a search of PubMed and the Cochrane Library. Of these, 25 were considered suitable for inclusion. A lack of valid evidence resulted in a descriptive analysis, because a meta-analysis of the data was not possible.

CONCLUSIONS: The results of the present retrospective study have shown that the use of screws is a valid choice for IMF in mandibular fracture treatment with minimal morbidity. The 793 screws used for IMF resulted in a negligible amount of central and peripheral tooth root trauma.

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Authors: Rosen E; Beitlitum I; Tamse A; Taschieri S; Tsesis I.
Authors Full Name: Rosen, Eyal; Beitlitum, Ilan; Tamse, Aviad; Taschieri, Silvio; Tsesis, Igor.
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Implant-associated Vertical Root Fracture in Adjacent Endodontically Treated Teeth: A Case Series and Systematic Review.

INTRODUCTION: This study aimed to report a possible effect of the presence of an adjacent implant on the development of a vertical root fracture (VRF) in endodontically treated teeth.

METHODS: A series of 8 cases in 7 patients with teeth diagnosed with VRF after the placement of implants in the adjacent area is described and analyzed. In addition, a comprehensive literature search with strict inclusion and exclusion criteria was undertaken to identify additional clinical studies that assessed this clinical scenario.

RESULTS: The case series analysis revealed that the time from implant placement to the diagnosis of VRF was between 5 and 28 months (average = 11 months). The majority of cases occurred in female patients who received 2 or more implants. Six of the 7 patients were older than 40 years, with an average age of 54 years. The majority of teeth with VRF were premolar or mandibular molar teeth (6/8 teeth). All fractured teeth had been restored with a crown and had a post present, and the quality of the root canal filling was determined to be adequate. The systematic review revealed that implant-associated VRF has not been investigated or reported in the literature yet.

CONCLUSIONS: Based on a systematic review of the literature, this case series, although limited in its extent, is the first clinical report of a possible serious adverse event of implant-associated VRF in adjacent endodontically treated teeth. Additional clinical studies are indicated to shed light on this potential phenomenon.
RESULTS: Of the 156 patients identified, most were boys (87%) and the mean age was 13.5 years (standard deviation, 4.9 yr; interquartile range, 12 to 17 yr). The most common mechanism of injury was assault (48.1%). Mandibular fractures (40.7%) were most common. Multiple fractures occurred in 26.9% of patients. Concomitant injuries occurred in 73.7% of patients, most commonly concussions (39.1%). Intracranial hemorrhages were associated with panfacial (P = .005), frontal (P = .001), and orbital (P = .04) fractures. Most patients (91.7%) were admitted, and nonoperative repair was undertaken in 57.1%. There was an independent association of surgical intervention with age older than 14 years and with mandibular fractures (P < .01).

CONCLUSIONS: Assault was the most common mechanism of injury and mandibular fracture was the most commonly encountered. Concomitant nonfacial injuries occurred in most patients. Patients sustaining panfacial, frontal, and orbital fractures should provoke an evaluation for other intracranial injuries. Children older than 14 years and those with mandibular fractures should prompt mobilization of resources for operative repair.

Clinical implications:

1. Assault was the most common mechanism of injury.
2. Mandibular fractures were commonly observed.
3. Concomitant nonfacial injuries were frequent.
4. Surgical intervention was associated with age and mandibular fractures.

Abstract:

Clinicians face numerous challenges when managing psychiatric patients who self-inflict injuries within the maxillofacial region. In addition to a complex clinical examination, there are both surgical and psychiatric factors to consider, such as the risk of damaging vital structures, the exacerbation of the patient's psychiatric status, and the long-term psychosocial and esthetic sequelae. We present 2 cases of adolescents who repeatedly self-inflicted wounds and/or inserted foreign bodies (FBs) into the face, scalp, and neck. The different treatment modalities were based on full evaluation of the patient's clinical, medical, and diagnostic test findings coupled with a psychiatric assessment. The decision for conservative management or surgical intervention was made according to the presence and location of the FBs, degree of hemorrhage, signs and symptoms of infection, and unpleasant scars that could lead to long-term psychological impairment. In most cases, the FBs were removed and the wounds were toileted and closed under local or general anesthesia. We advocate a holistic approach via a multidisciplinary team, which is deemed essential to provide the highest quality of care for patients to reduce the risk of further relapses. Lastly, a satisfactory esthetic outcome is always paramount to achieve long-term psychological and physical welfare.
BDA LIBRARY MEDLINE SEARCH

RECENT REVIEWS RELATED TO DENTOALVEOLAR TRAUMA

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Title
Reduction of isolated zygomatic arch fractures using dental instrument: Report of 2 cases and review of the literature. [Review]

Source

Abstract
To assess the effectiveness of a dental instrument for reduction of isolated zygomatic arch fractures. Two patients were admitted to our clinic representing isolated unilateral zygomatic arch fracture. The common presenting complaints were pain, swelling and difficulty in mouth opening. Fractures were confirmed with plain radiography and computerized tomography. The fractures were reduced with upper buccal sulcus approach by dental instrument. Patients achieved satisfactory maximum mouth opening within 10 days. At follow up after 6 months, there was complete healing without any complication. This procedure is cost effective, time saving, safe and effective to manage isolated zygomatic arch fractures under local anaesthesia with satisfactory outcomes.

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Case Reports. Journal Article. Review.

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2016

<71>

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Title
Management of incompletely developed teeth requiring root canal treatment. [Review]

Source

Abstract
Endodontic management of the permanent immature tooth continues to be a challenge for both clinicians and researchers. Clinical concerns are primarily related to achieving adequate levels of disinfection as ‘aggressive’ instrumentation is contraindicated and hence there exists a much greater reliance on endodontic irrigants and medicaments. The open apex has also presented obturation difficulties, notably in controlling length. Long-term apexification procedures with calcium hydroxide have proven to be successful in retaining many of these immature infected teeth but due to their thin dentinal walls and perceived problems associated with long-term placement of calcium hydroxide, they have been found to be prone to cervical fracture and subsequent tooth loss. In recent years there has developed an increasing interest in the possibility of ‘regenerating’ pulp tissue in an infected immature tooth. It is apparent that although the philosophy and hope of ‘regeneration’ is commendable, recent histologic studies appear to suggest that the calcified material deposited on the canal wall is bone/cementum rather than dentine, hence the absence of pulp tissue with or without an odontoblast layer.

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Status
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Title
The restoration of traumatized teeth. [Review]
Source

Abstract
The restoration of a traumatized tooth may require minimally invasive or more extensive treatment options. The majority of injuries occur in the younger population, so management should consider the long-term outcome, failure and future treatment needs over the course of, often, many decades. The aim should be to provide a tooth-restoration complex that closely mimics the functional and aesthetic qualities of an intact tooth for as long as possible. This narrative review will assess the relevant literature pertinent to restoration of traumatized teeth in order to provide guidance for the practising clinician.

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Title
Splinting of teeth following trauma: a review and a new splinting recommendation. [Review]
Source
Local Messages
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Abstract
With advances in the understanding of healing processes of the periodontium, pulp and alveolar bone following various injuries, the role of splinting has become relatively well defined. This is generally reflected in the guidelines for trauma management published by the International Association of Dental Traumatology. While the widespread use of composite resin as an adhesive in various functional/flexible splinting systems has over many years allowed ease of application, removal of the material is not only time consuming but more seriously accompanied by minor or major iatrogenic damage to enamel. Dental materials science has continued to provide new materials and amongst them the development of resin activated glass-ionomer cement suitable for orthodontic bracket cementation has allowed the development of an alternative simplified splinting regimen for traumatized teeth which offers ease of application and removal with minimal or no iatrogenic damage to enamel.

Title
Responses of the pulp, periradicular and soft tissues following trauma to the permanent teeth. [Review]
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Local Messages
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Abstract
Trauma to the permanent teeth involves not only the teeth but also the pulp, the periodontal ligament, alveolar bone, gingiva and other associated structures. There are many variations in the types of injuries with varying severity and often a tooth may sustain more than one injury at the same time. In more severe trauma cases, there are many different cellular systems of mineralized hard and unmineralized soft tissues involved, each with varying potential for healing. Furthermore, the responses of the different tissues may be interrelated and dependent on each other. Hence, healing subsequent to dental trauma has long been known to be very complex. Because of this complexity, tissue responses and the consequences following dental trauma have been confusing and puzzling for many clinicians. In this review, the tissue responses are described under the tissue compartments typically involved following dental trauma: the pulp, periradicular and associated soft tissues. The factors involved in the mechanisms of trauma are analysed for their effects on the tissue responses. A thorough understanding of the possible tissue responses is imperative for clinicians to overcome the confusion and manage dental trauma adequately and conservatively in order to minimize the consequences following trauma.
Emergency assessment and treatment planning for traumatic dental injuries. [Review]


Abstract
Trauma involving the dentoalveolar region is a frequent occurrence which can result in the fracturing and displacement of teeth, crushing and/or fracturing of bone and soft tissue injuries including contusions, abrasions and lacerations. This review describes the assessment of patients with these injuries, not in a didactic sense by repeating excellent already published classifications and treatment options, but by addressing questions that arise during assessment. It covers trauma first aid, examination of the patient, factors that affect treatment planning decisions, and the importance of communicating treatment options and prognosis to traumatized patients.

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Epidemiology and outcomes of traumatic dental injuries: a review of the literature. [Review]

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Abstract
Dental trauma is a significant public health problem because of its frequency, impact on economic productivity and quality of life. It is not a disease and no individual is ever at zero risk of sustaining these potentially life-changing injuries. The aim of this article was to review the literature on the prevalence, incidence, aetiology, prognosis and outcomes of dental trauma. The importance of standardized reporting, oral health policy, adjunctive research methods, prevention and education will also be discussed. A search for relevant articles appearing in databases such as Medline, Cochrane and SSCI formed the basis of this review. Epidemiological studies indicate the annual incidence of dental trauma globally is at about 4.5%. Approximately one-third of children and toddlers (primary teeth) and one-fifth of adolescents and adults (permanent teeth) sustained a traumatic dental injury. The majority involved the maxillary central incisors, mainly from falls in toddlers at home and contact sport in adolescents. Despite these trends, there is considerable variation between studies within and across jurisdictions. There is a need to standardize research with a consistent approach to reporting, classification and methodology. This will improve research and form a greater basis for predicting prognosis. This research basis will assist in consent and clinical management.

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**RECENT REVIEWS RELATED TO DENTOALVEOLAR TRAUMA**

**Title**
Multiple mandibular fractures. Treatment outlines. [Review]

**Source**

**Abstract**
Multiple mandibular comminuted fractures usually occur in high energy traumas. The authors describe the management and treatment of multiple mandibular fractures in a young patient after a suicide attempt.

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**Title**
Decision Making for Retention of Endodontically Treated Posterior Cracked Teeth: A 5-year Follow-up Study.

**Source**

**Abstract**
**INTRODUCTION:** The study aimed to investigate the 5-year survival of root-filled posterior cracked teeth and its related factors.

**METHODS:** Two hundred patients who had root canal-treated posterior cracked teeth at the National Dental Centre were recalled for a 5-year review. Eighty-four patients who met the inclusion criteria were included in this study. The cases were managed following the treatment protocol for cracked teeth at the center. The data for analyses were obtained from the patients' clinical records. Statistical analyses were performed using SPSS 21.0 (SPSS Inc, Chicago, IL). The outcome measure was the presence of tooth at the time of the review.

**RESULTS:** At 5 years, 77 teeth “survived” (92%), and 7 teeth (8%) were extracted. Patient demographics, tooth type and location, existing restoration, number and location of cracks, presence of pretreatment signs and symptoms, and initial pulpal and periapical diagnosis did not significantly affect the survival of the teeth. Univariate analysis showed that teeth with extension of the cracks onto the pulpal floor were more often extracted (odds ratio = 4.5, P = .07). Multivariable analyses found that extension of cracks onto the pulpal floor independently increased the odds of tooth loss by 11-fold (odds ratio = 11, P = .033), with other factors being held constant. The 5-year survival estimate in the absence and presence of crack extension onto the pulpal floor was 99% and 88%, respectively.

**CONCLUSIONS:** Coronal cracks may be predictably treated, whereas radicular cracks increased the odds of the tooth being extracted.
The incidence of fractures of styloid process, either in isolation or association with mandibular fractures, is rare, and frequently overlooked. When present, they pose clinical dilemma in diagnosis and management. Proper management of styloid fractures is essential, not just to alleviate the patients’ symptoms, but also to prevent potential complications like post-traumatic styloid syndrome and injury to adjacent vital structures. This article features a review of literature on ‘styloid fracture concomitant with mandibular fracture’ along with a case report. The article explores the biomechanics resulting in styloid fracture especially when co-existing with mandibular fractures. The article also enumerates the clinical features of this unusual clinical phenomenon and aims at rationalizing the need for its medical or surgical management. A simple protocol for the management of ‘stylo-mandibular complex’ fracture has been proposed.

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INTRODUCTION: The detection of vertical root fractures (VRFs) is a significant challenge for clinicians. Cone-beam computed tomographic (CBCT) imaging has been used recently in this field with high accuracy and sensitivity. Research results about its superiority over periapical radiographs (PRs) are mixed and inconclusive. The aim of this review and meta-analysis was to provide evidence about the accuracy of CBCT imaging in diagnosing VRFs in human teeth with and without endodontic treatment compared with conventional/digital radiography and to establish optimal imaging parameters for accurate VRF detection using CBCT imaging through a systematic approach.

METHODS: A search for eligible studies was conducted from January 1990 to November 2013 in PubMed, Embase, and Cochrane Central Register of Controlled Trials. The Quality Assessment of Diagnostic Accuracy Studies 2 and the Preferred Reporting Items for Systematic Reviews and Meta-Analysis checklists were used to assess the quality of the included studies. Statistical pooling of sensitivity, specificity, and the diagnostic odds ratio were calculated using random effects meta-analysis model and depicted through paired forest plots. The presence of heterogeneity of the included studies was also estimated.
RESULTS: Eleven studies qualified for systematic review, and 4 studies were considered for meta-analysis. Pooled sensitivity, specificity, and the diagnostic odds ratio of CBCT imaging and PR in filled and unfilled teeth were as follows: CBCT imaging (filled): 0.752, 0.652, and 5.527; PRs (filled): 0.242, 0.961, and 8.586; CBCT imaging (unfilled): 0.776, 0.946, and 94.26; and PRs (unfilled): 0.425, 0.939, and 14.42, respectively. Overall, studies presented heterogeneity varying from moderate to high.

CONCLUSIONS: Results showed better sensitivity and specificity of CBCT scans than PRs in the detection of VRFs in unfilled teeth, particularly when a voxel size of 0.2 mm was used. Low pooled sensitivity and specificity of CBCT imaging was noted in detecting VRFs in endodontically treated teeth.

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Title
Cone-beam Computed Tomography for Detecting Vertical Root Fractures in Endodontically Treated Teeth: A Systematic Review.

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RECENT REVIEWS RELATED TO DENTOALVEOLAR TRAUMA

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Title
Damage control surgery and combat-related maxillofacial and cervical injuries: a systematic review. [Review]
Source
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Abstract
Damage control surgery involves rapid assessment, life-saving resuscitation, and abbreviated surgery for a patient with severe injuries. Traditionally the concept of damage control surgery has been restricted to penetrating abdominal injuries, but more recently it has been expanded to areas outside of the abdomen including the maxillofacial and neck regions. However, we know of little evidence that, when applied to injuries to the face and neck, it changes outcomes. We systematically reviewed published papers to identify those that discussed damage control in the context of combat-related trauma of the face and neck. We identified three papers that discussed the principles of managing combat-related maxillofacial injuries, all three of which were review articles that advocated the use of damage control principles in facial injuries either in isolation or as part of a multisystem approach. Anecdotal experience and opinion indicates that the concept of damage control is applicable when managing combat-related injuries of the face and neck, but no outcomes were confirmed. Further studies are required to validate the concept.

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Title
Treatment Algorithm for Intracranial Intrusion Injuries of the Mandibular Condyle. [Review]
Source
Local Messages
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Abstract
PURPOSE: Traumatic injuries of the mandible resulting in intrusion of the condyle into the middle cranial fossa are rare and treatment is often based on anecdotal experience. The objective of this study was to develop an algorithm for the management of condylar intrusion injuries by identifying factors that influenced the treatment decision of closed versus open reduction of the condyle.

MATERIALS AND METHODS: This study was a systematic review of the literature on intracranial intrusion injuries of the mandibular condyle. A thorough search of the PubMed and Cochrane databases and individual maxillofacial and craniofacial journal databases was conducted using the Medical Subject Heading terms condylar impaction, condylar dislocation, condylar intrusion, and middle cranial fossa and condyle without date and language restriction. Quantitative data on the patient's age, gender, etiology of injury, and time from injury to diagnosis were analyzed using descriptive statistics. The authors studied how the predictor variables of age, etiology, time from injury to diagnosis, and associated neurologic injuries influenced the outcome variable of closed versus open reduction of the condyle.

RESULTS: Forty-eight of the 62 retrieved case reports, case series, and review articles were published in the English-language literature from 1963 to 2015. Data on 51 patients with these injuries showed that 38 (75%) were female and younger than 30 years. The most common etiology of injury was motor vehicular accidents, occurring in 25 of 51 patients (49%). The mean time from injury to diagnosis was 31.2 days (0 to 108.4 days). Forty of the 51 patients (78%) were diagnosed within the first 2 weeks of
injury. A good proportion of patients underwent open reduction (63%) and 18 of the 51 of patients (35%) underwent closed reduction.

CONCLUSIONS: Predictor variables that influenced the treatment decision of open versus closed reduction were age of the patient, etiology of injury, and time from injury to diagnosis. Based on the present results, younger patients (0 to 15 yr old), patients who sustain condylar intrusion injuries from bicycle accidents, and those diagnosed within the first 2 weeks of injury are more likely to benefit from closed reduction. The treatment algorithm emphasizes the importance of assessment of associated neurologic injuries and an interdisciplinary approach for the management of these injuries.

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Title
A Review of Hard Palate Fracture Repair Techniques. [Review]
Source
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Abstract
PURPOSE: Hard palate trauma is a relatively infrequent occurrence compared with other craniofacial injuries. Several techniques of hard palate fracture repair have been described. To date, there is no consensus on the optimal management of this type of fracture. The purpose of this study was to compile and analyze studies describing hard palate fracture repair techniques with outcomes data.

MATERIALS AND METHODS: A systematic review of the Medline, Scopus, and Web of Science databases was performed for articles describing hard palate fracture repair techniques.

RESULTS: Eight articles were ultimately included in the review. Of the collective 310 fractures reported, postoperative malocclusion occurred in 21 of 235 cases (8.9%) and other complications occurred in 13 of 299 cases (4.3%). The most important variability in technique was the method of palatal vault stabilization. Three studies described wiring techniques, 3 described internal fixation techniques, and 2 described external fixation techniques. Studies describing internal fixation techniques reported higher rates of wound complications. Proponents of rigid internal fixation believe that this technique provides better fracture reduction. External fixation techniques appear to impart low rates of wound complications, but their overall effectiveness remains in question.

CONCLUSIONS: Hard palate fractures are associated with high rates of malocclusion and wound complications. The most established methods of palatal vault stabilization are closed reduction with wiring and internal plate fixation. Depending on the fracture type, patient comorbidities, and associated injuries, either technique might be preferable in a given circumstance.

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RECENT REVIEWS RELATED TO DENTOALVEOLAR TRAUMA

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Title
Inaugural Survey on Practice Patterns of Orbital Floor Fractures for American Oral and Maxillofacial Surgeons. [Review]

Source

Abstract
PURPOSE: In recent years, several studies have reported on practitioners' preferences for the treatment of orbital floor fractures, showing widely varying practice patterns. The purpose of the present study was to identify the practice patterns among oral and maxillofacial surgeons involved in the management of orbital floor fractures in the United States and compare them with the available published data.

MATERIALS AND METHODS: An anonymous survey was created and electrically mailed to surgeons. We also reviewed the published data on orbital floor fractures using a PubMed and MEDLINE search. The responses to the survey were analyzed using descriptive statistics.

RESULTS: The factors that had the greatest influence on the surgeon's decision to operate were a defect size > 2 cm², enophthalmos, entrapment, and persistent diplopia. The most common surgical approach reported was a preseptal transconjunctival approach (32.0%), followed by the subciliary (27.9%) and postseptal transconjunctival (26.2%) approaches. The most commonly reported implant for orbital reconstruction was titanium (65.4%), followed by Medpor (43.7%) and composite Medpor and titanium (26.4%). The review of the published data showed a consensus among many of the operative indications mentioned, including a large defect size, enophthalmos, clinical entrapment, and persistent diplopia.

CONCLUSIONS: Oral and maxillofacial surgeons in the United States have a wide range of practice habits in the management of orbital floor fractures. Although the quality of the available evidence is poor, it supports a consistent approach to the management of orbital floor fractures in terms of the indications and surgical approach. The choice of reconstructive material and timing of repair remain more controversial. A clear need exists for improvement in the available data to help guide and set standards of care for the specialties managing orbital floor fractures.

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Title
Unusual Presentation of Guillain-Barre Syndrome After Mandibular Fracture Treatment: A Review of the Literature and a New Case. [Review]

Source

Abstract
Guillain-Barre syndrome (GBS) is a multifactorial and lethal inflammatory demyelinating neuronal disorder with concurrent polyradiculopathy and polyneuropathy presentations. This rare syndrome affects the peripheral nerve myelin sheath and is...
characterized by ascending muscle weakness and paralysis. There have been rare reports of GBS after head or brachial plexus trauma, general anesthesia, neurosurgery, orthopedic surgery, cesarean section, laparoscopy, and general surgery, and the occurrence of GBS after oral and maxillofacial surgery is not common. A review of the related literature and a new case of GBS after maxillofacial surgery are presented.

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Title
Regeneration or replacement? A case report and review of literature. [Review]
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Title
Detection accuracy of root fractures in cone-beam computed tomography images: a systematic review and meta-analysis. [Review]
Source

Abstract
The aim of this review was to evaluate whether CBCT is reliable for the detection of root fractures in teeth without root fillings, and whether the voxel size has an impact on diagnostic accuracy. The studies published in PubMed, Web of Science,
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ScienceDirect, Cochrane Library, Embase, Scopus, CNKI and Wanfang up to May 2014 were the data source. Studies on nonroot filled teeth with the i-CAT (n = 8) and 3D Accuitomo CBCT (n = 5) units were eventually selected. In the studies on i-CAT, the pooled sensitivity was 0.83 and the pooled specificity was 0.91; in the 3D Accuitomo studies, the pooled sensitivity was 0.95 and pooled specificity was 0.96. The i-CAT group comprised 5 voxel size subgroups and the 3D Accuitomo group contained 2 subgroups. For the i-CAT group, there was a significant difference amongst the five subgroups (0.125, 0.2, 0.25, 0.3 and 0.4 mm; P = 0.000). Pairwise comparison revealed that 0.125 mm voxel subgroup was significantly different from those of 0.2, 0.25 and 0.3 mm voxel subgroups, but not from the 0.4 mm voxel subgroup. There were no significant differences amongst any other two subgroups (by alpha' = 0.005). No significant difference was found between 0.08 mm and 0.125 mm voxel subgroups (P = 0.320) for the 3D Accuitomo group. The present review confirms the detection accuracy of root fractures in CBCT images, but does not support the concept that voxel size may play a role in improving the detection accuracy of root fractures in nonroot filled teeth.

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Title
The incidence of complications associated with lip and/or tongue piercings: a systematic review. [Review]

Abstract
OBJECTIVE: This review determines the incidence of complications associated with lip and/or tongue piercings based on a systematic evaluation of the available literature.

MATERIAL AND METHODS: MEDLINE-PubMed, Cochrane-CENTRAL and EMBASE databases were comprehensively searched through June 2014 to identify appropriate studies. The incidence of complications, as established by a dental professional associated with oral and peri-oral piercings, was evaluated in populations with lip and/or tongue piercings. The quality of the case-control studies was assessed using the Newcastle-Ottawa Scale. For case series studies, the risk of bias was assessed using the National Institute for Health and Clinical Excellence scale.

RESULTS: An independent screening of 1580 unique titles and abstracts revealed 15 publications that met the eligibility criteria. The incidence of gingival recessions appeared to be 50% in subjects with lip piercings and 44% in subjects with a tongue piercing. Tooth injuries were observed in 26% individuals with lip piercings and in up to 37% of individuals with tongue piercings. Subjects with a lip piercing were 4.14 times (P = 0.005) more likely to develop gingival recession than those without a lip piercing. Subjects with a tongue piercing were more likely than non-pierced subjects to experience gingival recession (relative risk (RR) 2.77; P = 0.0001) and tooth injuries (RR 2.44; P = 0.003).

CONCLUSION: Both lip and tongue piercings are highly associated with the risk of gingival recession, and tongue piercings are also associated with tooth injuries.

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