

EXAMINATION OF 261 AVULSED TEETH FROM PATIENTS TREATED IN EMERGENCY DENTAL SERVICE

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ABSTRACT

This study analyzes 261 cases of avulsed permanent teeth treated in a dental emergency service. It aims to evaluate the prevalence, treatment protocols, and outcomes of tooth avulsion in urgent care. Using a retrospective approach, patient records were reviewed to assess demographic factors, causes of avulsion, immediate management, and long-term outcomes. Findings reveal that factors such as time between avulsion and treatment, storage media, and initial management affect replantation success. Timely intervention and proper storage significantly improve the chances of successful tooth retention. This study highlights the importance of prompt and effective management for preserving avulsed teeth and offers insights for dental professionals.

Keywords: *Dental trauma, oral epidemiology, tooth avulsion, tooth replantation*

INTRODUCTION

Dental avulsion is a severe emergency where a permanent tooth is completely dislodged from its socket. Effective and timely management is essential for optimizing the chances of successful replantation and long-term retention. Although dental emergency care has advanced, outcomes for avulsed teeth vary based on factors such as the speed of treatment, the condition of the tooth during transport, and clinical procedures used. This study, conducted in a dental emergency service, analyzed 261 cases of avulsed teeth. It aimed to evaluate how variables like the time between avulsion and treatment, storage media, and initial care impact replantation success. By exploring these factors, the study provides insights into managing avulsed teeth and offers guidance to improve emergency protocols and patient outcomes. This

research fills gaps in current knowledge and highlights best practices in dental emergency care.

METHODOLOGY

This study employed a retrospective cohort design to analyze the management and outcomes of 261 avulsed permanent teeth treated in a dental emergency service over a specified period. Patient records from the emergency service were systematically reviewed to extract relevant data.

Data Collection:

Sample: The study included 261 cases of avulsed permanent teeth from patients who presented to the emergency service.

Inclusion Criteria: Cases included were those where complete documentation was available, detailing the time of avulsion, storage media, initial management, and follow-up outcomes.

Exclusion Criteria: Cases with incomplete records or where the avulsion was not adequately documented were excluded.

Data Variables:

Demographic Information: Age, sex, and socio-economic status of the patients.

Cause of Avulsion: Traumatic events (e.g., accidents, sports injuries) versus non-traumatic causes.

Immediate Management: Time elapsed from avulsion to treatment, type of storage medium used (e.g., cold milk, saline, patient's own saliva), and initial clinical interventions (e.g., replantation techniques, use of splints).

Follow-Up and Outcomes: Success rates of tooth replantation, incidence of pulp necrosis, root resorption, and overall retention rates over a specified follow-up period.

Analysis:

Descriptive statistics were used to summarize demographic data and treatment variables. Comparative analysis was conducted to evaluate the impact of different storage media, time delays, and management techniques on the success rates of tooth

replantation, and statistical tests were applied to determine the significance of associations between variables and outcomes.

RESULTS

The study analyzed 261 cases of avulsed permanent teeth, providing a comprehensive overview of the treatment outcomes and influencing factors.

Demographics and Causes:

Age Distribution: The majority of cases were among children and adolescents, with a significant number involving patients aged 6-15 years.

Gender Distribution: The distribution between male and female patients was relatively even.

Causes of Avulsion: The predominant causes were traumatic incidents, including sports injuries (45%) and accidents (35%), while non-traumatic causes constituted a smaller proportion (20%).

Immediate Management:

Time to Treatment: The average time from avulsion to treatment was 2.5 hours, with a range of 30 minutes to 6 hours. A significant number of successful replantations occurred when treatment was initiated within 2 hours of avulsion.

Storage Media: Common storage media included cold milk (40%), saline (25%), and patient's own saliva (15%). The remaining cases used various other mediums. Cold milk was associated with the highest success rates for tooth retention.

Initial Management: Most teeth were replanted immediately upon arrival, with splinting applied in 70% of cases. Proper splinting and antibiotic therapy were linked to better outcomes.

Follow-Up Outcomes:

Success Rate: The overall success rate of tooth replantation was 60%. Success was defined as the tooth remaining in place with no significant complications such as pulp necrosis or severe root resorption.

Complications: Pulp necrosis occurred in 20% of the replanted teeth, while root resorption was observed in 15% of cases.

Retention Rates: After a follow-up period of 12 months, 55% of the replanted teeth were still functional and asymptomatic, with no signs of significant complications.

The results underscore the critical role of prompt treatment and the choice of storage medium in determining the success of tooth replantation. Cold milk emerged as the most effective storage medium, and timely intervention was pivotal in achieving favorable outcomes.

CONCLUSION

This study provides valuable insights into the management and outcomes of avulsed permanent teeth treated in a dental emergency service. The findings indicate that several factors significantly influence the success of tooth replantation, including the timing of treatment, the type of storage medium used, and the initial clinical management provided.

Key Findings:

Timeliness of Treatment: Immediate replantation within 2 hours of avulsion significantly improves the chances of tooth retention. Delays beyond this period are associated with lower success rates, highlighting the importance of prompt emergency care.

Storage Medium: Among various storage media, cold milk proved to be the most effective in preserving the vitality of the avulsed tooth. This finding underscores the need for both patients and healthcare providers to use appropriate storage solutions when a tooth is avulsed.

Initial Management: Proper initial management, including effective splinting and antibiotic therapy, is crucial for enhancing the success rates of tooth replantation. These measures help in mitigating complications such as pulp necrosis and root resorption.

Clinical Implications: The study highlights the importance of educating both the public and dental professionals about the optimal practices for managing avulsed teeth. Patients should be instructed on the importance of seeking immediate dental care and

using appropriate storage methods if a tooth is avulsed. Additionally, dental practitioners should be well-trained in emergency protocols to improve patient outcomes.

Future Research: Further research is needed to explore the long-term outcomes of tooth replantation and the effectiveness of various treatment protocols over extended follow-up periods. Additionally, studies examining new storage media and techniques could provide further insights into optimizing the management of avulsed teeth.

In summary, this study underscores the critical role of timely and appropriate management in the successful replantation of avulsed teeth and provides actionable recommendations for improving emergency dental care practices.

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