

Summary

Injuries of the permanent teeth represent extensive and serious problems of dentistry. With the exception of the hard dental tissues, gingiva, periodontium, dental pulp and alveolar bone are often affected.

The healing of injured teeth depends upon different factors, such as the stage of root development, the presence of bacterial infection in oral cavity and the possible penetration of bacteria or their toxins through the dentinal wall. These factors as well as incorrect treatment can cause posttraumatic complication, which appear immediately after dental trauma or up to several years later.

In this study the evaluation of 384 patients with injuries of the permanent teeth was performed. All these patients were treated in the Dentistry Department of the Faculty Hospital in Pilsen. The aim of the clinical part of the study was the analysis of the epidemiologic data and of the occurrence of posttraumatic consequences in every group of dental injuries. The investigated dates were compared with the dates in the literature. The relation between patient's age, stage of root development, treatment of dental trauma and occurrences of posttraumatic complications has been investigated.

The main findings of this study agree with the data in the literature. Dental injuries occur more frequently in children at the age of 8 to 14 years, although lately an increase in prevalence of dental injuries has been reported among patients at the age of 15 and 25 years. In all age groups, males suffered accidental injuries more frequently than females and the maxillary incisors are the most affected teeth. The main etiological factors of dental injuries were different physical leisure activities, traffic accidents and increased physical aggression among some groups of the population.

Post-traumatic consequences occurred in all types of dental traumas and pulp necrosis was the most frequent complication. The best prognosis of pulp survival was found in teeth with uncomplicated crown fractures. Delays in treatment can have an adverse effect on long-term outcomes of pulp survival in fractured teeth. Insufficient post-traumatic check-ups and delayed diagnosis of post-traumatic pulp necrosis often result in additional complications, such as chronic periodontitis, fistulae or external root resorption. Post-traumatic resorption of the root hard tissues represents quite a serious complication. The development of external inflammatory root resorption is directly related to the extent of damage of the periodontium at the time of trauma and to the presence of bacteria within the root canal and dentinal tubules.

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During endodontic treatment with calcium hydroxide, we observed an arrest of the inflammatory root resorption of the damaged teeth. In case of replanted teeth, a quick process of inflammatory root resorption was seen in the patients with malhygiene.

The experimental study confirmed a possibility of dye penetration through the dentinal wall and demonstrates the pattern of the possible way of bacterial root canal contamination after injuries of periodontal ligaments.

Early and correct treatment after dental trauma is necessary for the prevention of posttraumatic

consequences. Long term clinical and radiographic check-ups of injured teeth are essential crucial for patients. The patient's collaboration and good hygiene influence the successful therapy of dental trauma.