Post-traumatic damage of the teeth. First aid, clinical procedure

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Introduction: Damage of the teeth, both decidous and permanent, occurs very often. The most common reason is trauma. Tooth damage usually occurs during downfalls (30%), bicycle riding (27%), acts of violence (22%) and sport (10%). Appropriate first aid, as well as a proper clinical procedure performed by a dentist, determines the success of further treatment.

Aim of work: The purpose of this study is to show different types of tooth damage and first aid and describe the nature of dental emergency in several clinical cases.

Material and methods: Based on dental literature and personal clinical experience, schedule of clinical procedures in emergency cases was made.

Conclusions: Trauma to the primary teeth occurs most often at the age of 2-3, while that of permanent dentition at the age of 9-10. This study is helpful in health education, to GDPS and people who deal with trauma damages. Selection of the most efficient procedure leads to best results in post-injury treatment.

First aid in oral surgery

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Introduction: Emergency conditions develop incidentally during dental treatment. The only person responsible for the patient's life in oral surgery is the dentist. When the patient's life is at risk, the dentist himself should offer a professional first aid.

Aim of work: The aim of this study is to present the most common emergency conditions (fainting
53%, hyperventilation 12%, hysteric attack 9%, asthmatic attack 8%, epilepsy 6%, heart attack 5%, hypoglycemic coma 4%, others 3%) and to give a brief description of clinical procedures applicable in those cases.

Material and methods: Based on medical literature, we prepared a schedule of clinical procedures used in emergency states.

Conclusions: Knowledge of first aid procedures, especially ABC, is essential for every dentist. It can save GP's nerves and, most importantly, the patient's life.

The prevention of pain in ambulatory practice

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Introduction: Painkillers are usually prescribed for the symptomatic treatment of postsurgical pain. The patient takes them on his own depending on the need and usually according to his own reasoning. The treatment frequently is limited to 2-3 days after surgery. The medicine is often not suited properly to the patient's needs and the dose tends to be inappropriate, which results in complications of the treatment and the patient's discomfort.

The aim of the study: The aim of the study was to collect the necessary information and to compare painkillers available on the market. It will enable us to use them better and to conquer pain, the main post—surgical complication, more effectively.

The method: In our work we used the information placed on the packaging of each medicine and data taken from the literature. A comparison of the characteristics of each medicine enabled us to classify them. We prepared a survey in which a patient could present his view on the treatment and painkillers, and to rate their effectiveness. Moreover, the patients were able to rate the pain felt during the treatment and afterwards using a 10—grade scale.

Results: The survey was conducted on 183 patients from The Dental Surgery Clinic, 53 % of whom were women. Post—surgical pain was felt by 38% patients, half of whom took painkillers. The results of the survey suggested that the majority of patients did not know the rudimentary rules of taking painkillers. 6% of the surveyed came to the Clinic because of post—surgical pain.

Conclusions: Painkillers are used too rarely and their inappropriate assessment improves the patient's comfort to a very limited extent. The selection of the right medicine makes it possible to minimize pain or eliminate it completely, which improves the patient's comfort and facilitates the healing process.

Detection of the HPV virus in patients with oral cancer

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Background: HPV 16 infection has been reported very often as one of the risk factors in the development of oral cancer. The goal of our study was to evaluate the incidence of HPV infection associated with cancer in the oral cavity. Additionally, we evaluated tobacco as a risk factor.

Material and methods: 24 patients with squamous cell carcinoma of the oral cavity. The patients were observed for 6-22 months. 10 were male and 14 female, with age ranging from S5 to 60 years. 8 patients did not have a previous history of tobacco use and 16 were heavy smokers. The tumor sites were: the tongue (12 patients), the floor of the mouth (5 patients), the inferior gingiva (5 patients), the buccal mucosa (1 patient) and the retromolar area (1 patient). Biopsies taken from 24 patients with oral cancer were confirmed by histopathology. For a subsequent DNA extraction, the biopsies were stored of —70°C until processing. HPV detection was performed using polymerase chain reaction (PCR).

Results: The presence of HPV DNA was detected in 9 out of 24 patients (36%), all of them with HPV 16. 9 patients were positive for HPV DNA in the tumor tissue. 8 patients were male and 1 was female. They were all heavy smokers. 3 patients had tongue carcinoma, 3 patients had floor of mouth carcinoma, 2 patients had inferior gingival carcinoma and 1 patient had buccal mucosa cancer. The most commonly detected HPV types were HPV16,6, 11, 18, 31, 33.

Conclusions: An early detection of the HPV virus may prevent the development of oral cancer, especially in heavy smokers, alcohol abusers and patients with bad oral hygiene. The presence of HPV DNA in 9 out of 24 patients stimulates further investigation to determine the role of HPV as a risk factor for oral cavity carcinoma.

The expression of the BMPs in human odontogenesis

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Introduction: Bone morphogenetic proteins (BMPs) are a family of signalling molecules critically involved at various stages in the formation of a variety of tissues and organs, including bones and teeth. Recombinant BMPs (-2, -4, -5, —6, -7) are osteogenic, dentinogenic and cementogenic. In order to deliver them, special carriers are needed. The design and selection of an ideal BMPs carrier is based on several criteria. The sources reveal collagen to be the optimal delivery system for BMPs. Collagen fibers are also known to serve as a scaffold for tissue repair. The BMPs influence apoptosis, cell proliferation and cell differentiation. BMP—2 and/or BMP—4 have been shown to mimic some of the signalling functions of the dental epithelium and mesenchyme during tooth initiation. The corresponding proteins are involved in the mediation of epithelial-mesenchymal interaction which triggers tooth formation.

Purpose: The aim was to demonstrate the influence of the BMPs during the early stadia of tooth formation as important markers able to mediate between the tissues and support odontogenesis. Knowledge of their impact in the process of tooth formation is a step forward in gaining the capacity to culture teeth in vitro.

Material and method: The material were the paraffin sectioned samples of the epithelium covering the oral mucosa, received from five 15-week—old human foetuses taken from the collection of the Department of Anatomy, Universita degli Studi di Sassari. The hematoxylin — eosin staining and the immunohistochemical reactions were used as methods for BMPs detection. Immunohistochemical reactions allow to localise the BMPs by dyeing them yellow.

Results: At the bud stage, immunostaining was intense in the condensing mesenchyme and epithelium. At the cap stage, the antibodies reacted with the primary enamel knot. To the bell stage immunostainingforthe BMPs increased in the pulp. At the late bell stage it has decreased in the pulp, becoming more pronounced at the basal and apical poles of the inner dental epithelium cells and in the stratum intermedium.

Discussion: There are just a few signalling molecules like the BMPs, having an influence on odontogenesis. The important ones include the sonic hedgehog (shh), the marker of odontogenic epithelium (pitx2), B—catenins and the fibroblast growth factor (fgf). Recent research reveals that tooth formation is due to a direct apposition between an epithelial signalling centre at the oral/aboral boundary and the underlying mesenchyme of the oral cavity. This position and the molecules are presumptive to be able to onset odontogenesis in vitro.