

ACUTE PURULENT DIFFUSE PULPITIS ORIGIN, ETIOLOGY AND
TREATMENT METHODS

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Annotation: Dental pulp represents a specialized connective tissue enclosed by dentin and enamel, the most highly mineralized tissues of the body. Consequently, the direct examination as well as pathological evaluation of dental pulp is difficult. Within this anatomical context, our study aimed to evaluate the correlation between dental pulp lesions and clinical diagnosis.

Keywords: Dental pulp, Pulp pathology, pulpitis, dental, Acute.

Introduction

Pulp pathology is the generic term used in the description of pulp diseases as a morphofunctional ensemble. The clinical diagnosis relies on the correlation of information regarding the inflammatory state of dental pulp described by the patient through clinical symptoms, mainly pain, which together with other paraclinical data (dental radiographies) provide the basis for a therapeutic decision. Dental pulpitis represents a separate class of endodontic pathology initiated, in most cases, by a progressive dynamic process of dental caries. Acute or chronic inflammatory reactions of the pulp, occurring as a result of exposure of the pulpodentinal tissue, are caused by various invasion modalities involving or not the dentinal tubules - Most often, infections in the caries bucket enter the posterior - posterior pulp cavity of the dentin ducts, resulting in inflammation.

- Hematogenic inflammation of the pulp has also been observed. For example in influenza, osteomyelitis and other diseases.

- Injury the opening of the tooth cavity due to the fracture of a certain part of the tooth, the opening of the tooth cavity in the process of caries bucket processing and formation - injury, the opening of the pulp chamber when sharpened to put a metaloceramic coating from artificial coatings on the tooth.

- When performing surgical treatment in parodont.

- Under the influence of chemicals (some fillers).

- Under the influence of temperature (when the tooth tissue is sharpened in order to process the caries bucket and put an artificial coating).

Classification of pulpitis:

I. Acute pulpitis.

(A) in part,

b) general.

II. Chronic pulpitis.

(a) fibrosis,

b) gangrenosis,

d) hypertrophic.

III. Chronic pulpitis snoring.

Each type of pulpitis has its own clinical signs. The diagnosis is made based on subjective and objective signs.

Pulpitis with a sharp hearth. In acute furnace pulpitis, the patient complains of pain, which is strained due to a short mud - dat, intrusive thermal effect. The interval between pains is continuous. At night, the pains strain. Pain is strained by mechanical, chemical and thermal effects. The external examination is unchanged. The patient clearly indicates the tooth to which he is suffering. When an examination is carried out in the oral cavity, it is determined that there is a deep caries bucket, when probing, the pulp cavity is closed, and the bottom of the bucket is painful. Pain from cold and hot exposure does not stop, and the pain lasts 10-20 minutes. The electrical sensitivity of the pulpitis will be reduced.

Acute common pulpitis. In acute general pulpitis, the patient complains of persistent, traumatic pain, which is formed by himself. The interval between pains is reduced. Pain is transmitted along the tertiary nerve branches, and as a result, the patient cannot clearly indicate the tooth that is bothering. When probed, the pulp cavity is closed. Thermo-metria is painful from the heat, and there is a decrease in pain from cold exposure. The electrical sensitivity of the pulp will be reduced in all dumps of the tooth. Percussion is painful in some cases. At night, the pains strain.

Methods

The study group consisted of 59 patients (30 males and 29 females), aged between 18 and 67 years old (i.e., 38.83 mean age), registered in the interval of 2011–2014 for diagnosis and treatment at the “M. Kogălniceanu” Dentist Medical Learning Base, University of Medicine and Pharmacy “Grigore T. Popa” of Iași, Romania. From the 59 patients, 54 were diagnosed with acute and chronic irreversible pulpitis, on which pulpectomies were performed. The remaining 5 patients, with no dental caries or periodontal diseases, benefited from orthodontic extractions, with preceding pulpectomies; they represented the control group.

The study was approved by the Ethical Committee of the University of Medicine and Pharmacy “Grigore T. Popa” of Iași on the basis of the written informed consent of the patients relative to the usage of biological material harvest through pulpectomies (protocol number 10353). The research was conducted in full accordance with the World Medical Association Declaration of Helsinki.

Therapeutic Protocol of the Vital Extirpation of Pulp Tissue (Pulpectomy)

In accordance with the pulpectomy procedure the following stages were performed: locoregional anesthesia (Ubistesin Forte 4%, 3M ESPE), isolation of operative field with dam and application of saliva evacuator, antisepsis of operative field with 2% sodium hypochlorite (Chloraxid 2%, Cerkamed, Poland), and preparation of the access cavity to the selected place, specific for the approached tooth. The working length was set at 1 mm from the radiologic apex detected on a digital dental radiography and compared with the length identified by the apex locator Root ZX II (J. Morita, USA). Permeation of the endodontic space was performed with a Kerr file needle (Sendoline-Poldent, Poland) in order to generate an area for the excision of the connective tissue with Tire Nerf needles (Sendoline-Poldent, Poland).

After the removal of the pulp tissue, the enlargement of the root canal (manual needles Protaper, Dentsply, USA), irrigation with antiseptic substances (2% sodium hypochlorite, Chloraxid 2%, Cerkamed, Poland, and 3% oxygenated water, Tis Farmaceutic, Romania), and definitive filling (Sealapex, Kerr Corporation, USA, and gutta-percha sticks Protaper, Dentsply, USA) were performed in the same therapeutic session.

Results

Clinical versus Pathological Diagnosis

Relying on the criteria applied for the clinical diagnosis, 19 cases (37.26%) had acute pulpitudes and 32 cases (62.74%) had chronic pulpitudes.

From the 19 cases clinically diagnosed as acute pulpitudes, 7 cases were confirmed by the pathological exam. For the 32 cases with the clinical diagnosis of chronic pulpitudes, the pathological exam confirmed 28 cases. Consequently, we obtained the clinical and morphological correspondence for 35 cases (68.62%), the inconsistency between the clinical and pathological diagnosis being recorded in 16 cases (31.38%). The discrepancy between diagnoses included 12 cases clinically diagnosed as acute pulpitudes, but morphologically described as chronic pulpitudes, and 4 cases clinically diagnosed as chronic pulpitudes but with pathological modifications specific to the acute pulpitudes.

Pathological Characteristics

The cases diagnosed by the pathological exam as acute pulpitudes presented the following alterations in the pulp tissue: vascular congestion and diffuse polymorphic inflammatory

infiltrate mostly perivascular, associated with odontoblastic degeneration, interstitial matrix edema, and cellular detritus. The inflammatory infiltrate, integer and/or altered, together with cellular detritus was responsible for the infiltrative and destructive nature of the lesions typical to acute pulpitis.

The cases pathologically diagnosed as chronic pulpitis were characterized by conspicuous collagen deposition in the central pulp which progresses to fibrosis, areas with frequent fibroblasts, areas with isolated fibroblasts, chronic inflammatory infiltrate, calcifications with dentinal tubules—real pulpitis, diffuse calcifications with linear placement, associated with blood vessels (frequently with sclerotic walls), hemorrhages, prominent tissue edema, and cellular detritus. We point out that in chronic pulpitis (as opposed to the acute ones) the peripheral odontoblastic layer was preserved.

Conclusion

Our study outlines a relatively weak correlation between the clinical and pathological diagnoses for acute and chronic pulpitis. Consequently, we assume that the attention of the specialists must focus on updating the classifications for pulp pathology. On the basis of the predominant pathological aspects, namely, acute and chronic pulpitis, we propose their use only and consider the fact that the classification schemes can be simplified (by adequately reducing the number of clinical entities).

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