Treatment of the multirooted teeth pulpitis by the amputation method using «Pulpotec» (PD, Switzerland)

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Number of ailments related to the pulpitis is nowadays about 40% as illustrated by the stomatological practice (E. Borovsky and others, 2002). Currently the most commonly treatment method as to all forms of the pulpitis is a vital and devital extirpation. These methods offer some advantages but also having substantial shortcomings such as: need for a wide range of the expensive endodontic tools, possible tooling damage within a root channel, complications related to some under- or oversealing of the channel, labour intensive-ness, duration and expensiveness of the treatment process. The extirpation alternative for the multirooted teeth pulpitis treatment may be coronal pulp amputation. This given method is old-known (A. Rybakov, V. Ivanov, 1980) although its usage is of limited occurrence due to difficulties of creating aseptic conditions and encapsulated pulp stump within both treatment procedure and after permanent sealing, especially in the II class cavities by Black (J.C. Hess., 2002).

The goal of this given work is to evaluate efficiency of the using the «Pulpotec» material (PD, Switzerland) for a multi-rooted teeth pulpitis treatment by amputation method.

Investigation materials and methods. The amputation method of the pulpitis treatment has been used for 16 patients. Eighteen teeth (all molar ones) were cured. Twelve teeth (66,7%) have been characterised by carious cavity as per II class by Black, six teeth (33,3%) – as per I class respectively. The abovesaid teeth were cured by classical pulp amputation method. Upon pulpotomy and stoppage the bleeding a pulp stump has been covered with special paste made extempore of the Pulpotec powder and liquid material included in Pulpotec set.

Above paste a layer of the non-eugenol temporary cement in paste («PD») was laid. This cement layer has been carefully condensed with cotton pellet in order to create encapsulated pulp stump. Such condensed area may be also established if patient bites a wad of cotton wool located between relevant cured tooth and its antagonist (as recommended by the manufacturer). In two-three days the permanent sealing was made while a temporary cement layer has not been removed completely and that cement layer facing a pulp stump served as some insulation seal. Special composites for chemical and photosensitive hardening were used as permanent sealing material. Prior to and after treatment procedure a pulp viability was determined by EOD. Immediately upon the treatment procedure a tooth radiography was made.

Results. At the time of investigation the EOD parameters were within 25-45 mA featuring with 37±8 mA at average suggesting a pulp viability. The 15 patients' (83.3%) sensation of pain (syndrome) disappeared immediately after treatment procedure and three patients (17.7%) referred to it the next day. As long-term effects (after 6 months) the pulp electroexcitability was reduced reliably (p<0.05) up to 52±8 mA although relevant clinical and roentgenologic conditions have been kept constant.
A vital amputation should be considered well proved especially under pulpitis treatment of the constant teeth (molars) with non-shaped roots, teeth irregularly located (vestibular crown incline), semiretinal 8\textsuperscript{th} teeth, teeth with strongly curved channels.

Below are shown X-rays of some teeth subjected to a vital amputation procedure.

A. Injoyan, 8 y.o. The 46\textsuperscript{th} tooth root was not formed completely.

O. Konyukhova, 19 y.o. The 48\textsuperscript{th} tooth complicated eruption.

S. Minosyan, 50 y.o. The 48\textsuperscript{th} tooth was inaccessible by endodontic tools.

A. Grishin, 30 y.o. The 16\textsuperscript{th} tooth's medial-cheek root top was curved.
Discussion upon results obtained

It has been found that despite removal of the pulp crown portion a root pulp may be partly viable. At first glance this occurrence may be considered doubtful because of the mummification properties of the components, but we suggest a mummification process refers to the pulp mouth part which closely adjoins the Pulpotec layer while the apical portion remains viable enabling, in particular, the apical edification of the immature tooth.

Literature