

HEALING OF CHRONIC PERIAPICAL PERIODONTITIS IN THE ELDERLY: IS IT AGE RELATED?

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ABSTRACT

Endodontic retreatment in elderly patients for healing periapical periodontitis is more often required. Because of the increasing number of older adults in the population and the desideratum to maintain natural teeth for mastication and esthetics, endodontic treatment outcome in elderly people has to become predictable. Our clinical case highlights that even large, multiple periapical periodontitis can be healed in elderly people. Eliminating microbial infection by correct cleaning and shaping and preventing reinfection by proper root canal filling lead to a decrease in the size or even total healing of apical pathosis in relatively healthy elder patients, no matter the age.

Keywords: elderly patients, endodontics, periapical periodontitis

INTRODUCTION

The number of elderly patients which preserved their teeth is increasing and treatment plans require the maintenance of key teeth. There is a substantial growth in the number of old patients, not only because of the higher number of senior citizens, but also because of the increasing of remaining teeth due to the development of the advanced medical procedures used in dentistry [1]. The preservation of important teeth for prosthodontic rehabilitation, removable partial denture or retainer for fix prosthesis, for avoiding free end saddle, for maintaining occlusal contacts needs correct endodontic

treatment. Correct diet and nourishment is related to a good oral health condition and proper mastication [2]. Good dental treatment is raising the quality of life in older adults.

Patients in old age have a combination of periodontal disease and caries. Because of the retraction of the gingiva and bone root decay is often present in the oral pathology of this group of persons. The root canal is usually narrow, though negotiation can be difficult. The technical challenges have to be overcome in biological old teeth with modified morphology of the pulp chamber and the root canal system. Establishing of the glide path and the correct working length is the first step

for completing extensive shaping and cleaning of the root canal system. Copious irrigation is mandatory for disinfecting the root canal walls.

CLINICAL CASE

A 68 year old male patient turned up at our dental clinic for restoration of frontal mandibular teeth. At clinical examination there were two buccal sinus tracts and a poor adapted old fixed prosthesis. Axial percussion was negative and the patient reported no pain. Tooth mobility was grade 1 and the gingival recession 2-3 mm. The periodontal probing was negative.

On the preoperative periapical radiograph, with gutapercha cones through the sinus tracts, we identified teeth 42 and 31 causing the sinus tracts, but all the inferior incisives 42, 41, 32 and 31 had large apical periodontitis (fig. 1).



Figure 1. Preoperative radiograph of teeth 42, 41, 31, 32

After local anaesthesia and teeth isolation with the rubber dam, we treated the teeth in a single visit, two at a time. Each tooth had 2 merging canals.

The canals were initially negotiated with small sized stainless steel hand files. We used C+ file (Dentsply/Maillefer, Johnson City, TN), with increased rigidity to progress into the canal to the foramen and PathFile™

rotary instruments (Dentsply/Maillefer, Johnson City, TN). The working length was determined with the electronic apex locator, Morita, Tri Auto ZX, Japan, and confirmed on radiograph. The canals were shaped with ProTaper Universal, Dentsply, Maillefer, Switzerland and cleaned with heated NaOCl 5,25% and EDTA 17% (ethylenediamine tetra-acetic acid). The canals were dried with sterile paper points and obturated with AhPlus sealer, Dentsply, and warm vertical condensation of the guttapercha, continuous wave, Buchanan technique (fig. 2). The irrigation protocol was heated (50°C) sodium hypochlorite 5,25 % and citric acid 10% to remove the smear layer. The fistula on the right mandible was healed within 7 days when the patient came back for treatment of 31 and 32.

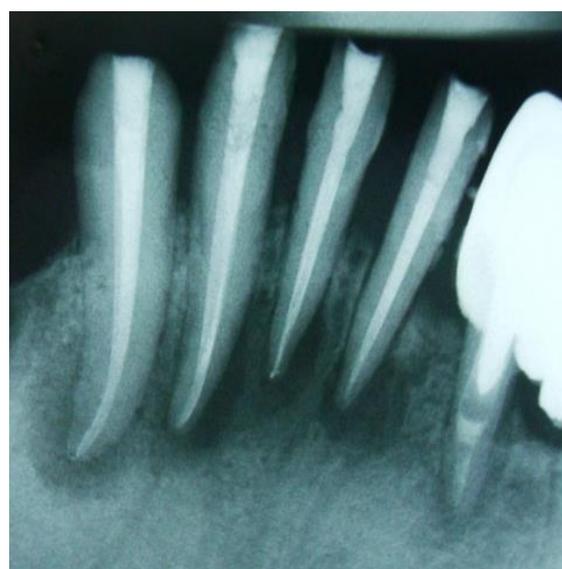


Figure 2. Postoperative radiograph of teeth 42, 41, 31, 32

After the completion of endodontic treatment, the teeth were restored with a fixed prosthodontics and the patient was subsequently recalled after 6 months to assess the evolution. The teeth were asymptomatic, functional and on the periapical radiograph the periodontal lesions decreased significantly (Fig. 3).



Figure 3. 6 months follow-up

DISCUSSION

Symptoms of periapical pathosis in elderly patients are often painless; the patient is recalling just discomfort or a low grade of swelling.

Root canal treatment is meant for both relatively healthy older persons and for persons with systemic diseases or functionally impaired. The predictability of root canal treatment outcome is not necessarily age related. The healing of periapical lesions after rigorous endodontic treatment can be compared with the condition of younger adults [3]. Disinfection of the endodontic system and proper root canal filling for preventing reinfection are the premises for a positive outcome of the root canal treatment and the healing of the periapical pathosis. Correct access to the infected endodontic space, overcoming difficulties such as diminished or missing pulp chamber, narrow or thready root canals in the coronal part, makes the treatment predictable. No matter the endodontic morphology modification, the goal of the clinical procedures remains the microorganism free root canal for preventing or healing of periapical periodontitis. Unlike the general opinion, the few studies on this subject, confirmed no age related outcome of the endodontic treatments in case of

periapical pathosis [3, 4]. The size of the periapical periodontitis can influence the outcome of the endodontic treatment [5, 6, 7]. If the root canal system is properly shaped and cleaned, the microbes are eliminated and the communication of the root canal system is sealed with root canal filling and coronal restoration, relatively healthy elderly patients have the capacity to heal even large apical lesions. Healing of periapical lesions is not compromised or significantly delayed in older adults compared with the younger ones [8]. Recent studies showed no major difference in periradicular healing of elderly or young people with HIV infection [9]. Diabetes type I and II is slightly influencing the healing time, no matter if the patients are young or old [8]. Even osteoporotic changes in postmenopausal elderly women are not proven to major influence the bone healing after endodontic treatment [8,10]. Contraindications for root canal treatment in elderly patients can be patients who received radiotherapy in the head region, when dental treatment should be undertaken before and patients with tremors or dementia [11]. During the dental treatment we have to take into consideration that older patients can suffer from chronic back conditions or transient cerebral ischemia, so we have to adapt the position of the patient to be as comfortable as possible and to appreciate the maximum time limit of the appointment. In such cases multiple appointments may be necessary. Older patients with locomotor disabilities need rather one appointment procedures, to avoid transportation.

CONCLUSIONS

Even sinus tracts due to large periapical lesions can be treated in elderly patients, despite the common opinion that teeth with large infection should be extracted in elderly patients. We have to take into consideration that endodontic treatment is less traumatic

than an extraction, when deciding the treatment plan. Single visit treatment is the best option, when the clinician manages to negotiate the root canal to its full working length. Thought, correctly performed

endodontic single visit treatment will be successful, even in elderly patients. Healing of periapical pathosis is not necessarily age related.

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