In vitro investigation of influence of temperature rising on periodontal tissue during endodontic treatment

Summary:
Various manipulations during endodontic treatment and restoration of endodontic treated teeth can be associated with increase of the temperature in dental structure and periodontal tissue. These manipulations include: mechanical root canal preparation, obturation with warm condensation techniques, root – canal preparation for radicular post. The critical level of temperature, that doesn’t cause irreversible consequences is 43°C. The aim of this study is to investigate the temperature changes on external root surface during endodontic treatment depending of dentin thickness. Thirty six single - rooted, human teeth extracted for prosthetic or periodontal reasons were selected for this study. Teeth were divided into four groups-nine teeth in each one. The temperature changes during mechanical root canal preparation, vertical warm condensation, continuous wave of condensation and root canal preparation for radicular post are explored and the results are presented.

Key words: temperature changes, external root surface, mechanical root canal preparation, warm condensation techniques for obturation, root canal preparation for radicular post.

REFERENCES:

The logical corollary then is that treatments for periodontal disease are likely to be more efficacious in non-smokers than in smokers. In oth-er words, this means when the effect of the level of ciga-rettes consumption is considered, it seems that the response to periodontal therapy is related to the amount of ciga-lettes smoked [13], and that previous smokers (quit-smo-kers) have a similar response to treatment compared to nonsmokers [13,14]. has been shown to impair the chemotaxis and phagocy-tosis of neutrophils obtained from the oral cavity [48,65] and in vitro studies of the effects of tobacco products on neutrophils have shown detrimental effects on cell movement and the oxidative burst [66-69]. In the treatment of intracanal and periodontal infections, the local application of antibiotics and other therapeutic agents in the root canal or in periodontal pockets may be a promising approach to achieve sustained drug release, high antimicrobial activity and low systemic side effects. Microparticles made from biodegradable polymers have been reported to be an effective means of delivering antibacterial drugs in endodontic and periodontal therapy. In vitro and in vivo studies that have investigated the biocompatibility or efficacy of certain microparticle formulations and devices are presented. Future directions in the application of microencapsulation techniques in endodontic and periodontal therapies are discussed.