

EFFICIENCY OF INTRALIGAMENTARY ANESTHESIA OF INFERIOR MOLARS FOR ENDODONTIC TREATMENT

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Summary. The periodontal ligament injection appears to be the most consistently reliable in achieving clinically adequate pulpal anaesthesia. Materials and Methods: 130 inferior molar teeth; technique: The tooth was first cleaned with chlorhexidine 0.2% solution. The penetration of the ligament is performed with special intraligamentary needle (30 G – 9, 17,21 mm) “sliding” along the side of the tooth, 300° angle between the needle and the tooth, having taken the care of determining support points which will prevent the needle from twisting. The penetration must be deep enough to obtain the seal required for the injection, injection for each root in particular points; volume of solution per root is 0.2-0.4 ml. Results: In 125 cases the technique was absolutely efficient. In only 5 cases with pulpitis chronica ulcerosa there was need for additional intrapulpal anesthesia. Conclusions: The method could be used as a primary anesthetic method for endodontic treatment.

Key words: *intraligamentary anesthesia, molars, endodontic treatment*

INTRODUCTION

The need for single-tooth anesthesia in the mandible has led to the development of a number of techniques aimed at this goal. In the early 1900s, Guido, Fisher, and Cassamani were the first to describe intraligamentary or periodontal ligament (PDL) injection technique, which uses a standard dental syringe [2]. The periodontal ligament injection appears to be the most consistently reliable in achieving clinically adequate pulpal anaesthesia [1, 4, 5, 6]. Recently, the technique has been advocated as a primary and supplemental anesthetic technique. Intraligamentary anesthesia in general dental practice is frequently used by Bulgarian dentists – in 75.91% of cases. For extraction

of the tooth the effect is not always sufficient and very often, in 67%, additional anesthetic procedures are necessary [1, 3].

MATERIAL AND METHODS

In 130 inferior molar teeth diagnosed with pulpitis chronic ulcerosa (n = 87), pulpitis acuta serosa totalis (n = 36), pulpitis acuta purulenta totalis (n = 7) intraligamentary anesthesia was used. Technique: The tooth was first cleaned with chlorhexidine 0.2% solution. The penetration of the ligament is performed with special intraligamentary needle (30 G – 9, 17, 21 mm) “sliding” along the side of the tooth, 300 angle between the needle and the tooth, having taken the care of determining support points which will prevent the needle from twisting. The penetration must be deep enough to obtain the seal required for the injection. Injection for each root in particular points is then performed [1]. Volume of solution per root is 0.2-0.4 ml.

RESULTS

In 125 cases the technique was absolutely efficient. In only 5 cases with pulpitis chronica ulcerosa there was need for additional intrapulpal anesthesia. Patients feel comfortable with the technique. They feel discomfort from 2 to 5 hours, but they still prefer the technique because they can feel their cheeks and tongue and the anesthetic effect lasts up to 55 min.

DISCUSSION

Overall success rates reported in clinics for endodontic treatment have ranged from 81% to 86% when used as a primary technique, and from 83% to 92% when used for supplemental anesthesia [4]. Lesser discomfort was associated with the intraligamentary injection technique. There is no punch just penetration of the needle in the gingival sulcus [1, 5, 8]. Pain associated with insertion of the needle and anesthesia achieved was acceptable for patients. Edwards and Head showed that the technique was statistically more effective when using anesthetic with epinephrine [3]. Intraligamentary anesthesia has several advantages compared with block anesthesia. It is more suitable in case of dental management of patients with hemophilia and other congenital bleeding disorders. Also it is more acceptable than conduction anesthesia and provides suitable anesthesia for endodontic treatment where the pulp of inferior/mandibular/ molars is difficult to be anesthetized. The cleaning is very important because it may cause intrusion of bacteria to the blood during injection which may lead to serious complications [6, 7, 8].

CONCLUSIONS

Intraligamentary anesthesia is commonly used as it is efficient and easy to perform. It is a preferred method in treatment procedures involving the mandibule jaw. Some authors consider it to be more efficient than conduction anesthesia. The method was used as a main and only method with 98% success in conservative dentistry [1, 2, 4, 7].

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