



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.3360755>Available online at: <http://www.iajps.com>

Research Article

**CLINICAL PRESENTATION OF INTRASEPTAL LOCAL  
ANESTHESIA IN DENTISTRY**<sup>1,2</sup> Vasil'ev Yu., <sup>3</sup> Paterikin V., <sup>4</sup> Rezaee Hassanabadi V.R., <sup>5</sup> Nizamov A.<sup>1</sup> PhD, Associate Professor, Sechenov University, Operative Surgery and Topographic Anatomy Department, Moscow, Russian Federation<sup>2</sup> PhD, Associate Professor RUDN University, Medical institute, Department of Propaedeutic of dental diseases, Moscow, Russia<sup>3</sup> Student of dental department, Medical university REAVIZ, Samara, Russian Federation<sup>4</sup> Student of dental department, Sechenov University, Moscow, Russian Federation<sup>5</sup> Student of dental department, RUDN University, Medical institute, Moscow, Russian Federation**Abstract:**

*The problem of hyperalgesia, especially in individuals with a reduced pain threshold, is often the reason for additional local anesthesia against the background of low effectiveness of the primary injection. Qualitative conducting of periodontal anesthesia is possible with the help of special injectors, which allow not only to administer localized pressure solution, but also to accurately dose it, thereby reducing the risk of overdose of local anesthetic and the effect of vasoconstrictors.*

*Key words: local anesthesia, dentistry, PDL, pain management.*

**Corresponding author:****Vasil'ev Yu,***PhD, Associate Professor,**Sechenov University,**Operative Surgery and Topographic Anatomy Department,**Moscow, Russian Federation*

QR code



*Please cite this article in press Vasil'ev Yu et al., Clinical Presentation Of Intraseptal Local Anesthesia In Dentistry., Indo Am. J. P. Sci, 2019; 06[08].*

### INTRODUCTION:

The data of foreign and local studies show incomplete effectiveness of IANB in the treatment of the mandible teeth with irreversible pulpitis. This is due to a number of factors depending both on the doctor and patient-dependent factors. The problem of hyperalgesia, especially in individuals with a reduced pain threshold, is often the reason for additional local anesthesia against the background of low effectiveness of the primary injection. Often the anatomical features of the structure and location of the IAN make conductive anesthesia difficult to implement. Finally, lack of manual skills and fear of creating iatrogenic situations provoke a stressful situation for doctors [1,2,3].

Recent studies and evaluation of a large number of clinical data show that the success of periodontal methods of anesthesia and the absence of undesirable effects depend on the mechanism, the characteristics of the technique, the qualification of the specialist and the use of appropriate instruments. An interesting development is atraumatic Scalpel-designed bevel needles (for example, Septoject Evolution). Therefore, it is important not only to use disposable injection systems, but also to protect the hands of medical personnel from unintentional injection. According to the recommendations of the World Health Organization, disposable injectors should protect health care workers against accidental injuries caused by needle sticking, which can lead to infection of medical personnel. Accidental needle-stick injuries (NSIs) in health care workers (HCWs) which occur while giving an injection or after the injection, including handling infected sharps before and after disposal. In 2003, WHO published the burden of diseases from NSIs in HCWs which showed that there were 3 million accidental needle-stick injuries leading to 37% of all new HBV cases in HCWs, 39% of new HCV cases and around 5.5% of new HIV cases [4].

We have accumulated a positive experience of using transcortical and intraseptal methods of local anesthesia in the treatment of irreversible pulpitis molars on the mandible [5].

Let's first consider an intra-septal injection, which is a kind of intraosseous anesthesia and consists in introducing a local anesthetic solution into the bone septum between the wells of adjacent teeth. The mechanism of its action is based on the spread of the solution in two main ways, as in other intraosseous methods of anesthesia.

In this regard, we recommend using the following method: it is necessary to draw a horizontal line through the cervical spines of the neighboring teeth, and to retreat 1-2 mm below its middle (fig 1).



Fig. 2. Intra-septal anesthesia at the mandible

When performing this type of anesthesia with Ultra Safety Plus disposable dental syringe, one should take into account the pressure that is transmitted through the needle to the alveolar bone. Therefore, it is necessary to use only short needles, preferably with a scalpel-designed bevel like Septoject Evolution. We recommend adhering to the local anesthetic injection rule based on the rate of 1 ml per minute. Dosage for 1 injection is allowed up to 0.3 ml with 4% articaine + epinephrine 1: 200 000 (Septanest 1:200 000), while for multi-root tooth anesthesia it is optimal to inject from approximal sides.

It is important to note the high safety of this method, but if the technique is not followed properly, the following complications may occur:

- 1) with unsatisfactory hygiene of the oral cavity and inflammatory phenomena in the periodontal tissues, inflammation of the injection site is possible;
- 2) with metabolic disorders, including diabetes, against the background of the use of a 4% articaine + epinephrine 1: 100 000 aseptic necrosis of the dental papilla is possible.

Thus, modern local anesthetics and instruments allow carrying out combined methods of local anesthesia, increasing efficiency, safety and

predictability of anesthesia in the treatment of irreversible pulpitis of molars on the mandible.

#### REFERENCES:

1. Ghoddusi J, Zarrabi MH, Daneshvar F, Naghavi N. Efficacy of IANB and Gow-Gates Techniques in Mandibular Molars with Symptomatic Irreversible Pulpitis: A Prospective Randomized Double Blind Clinical Study. *Iran Endod J.* 2018 Spring;13(2):143-148. doi: 10.22037/iej.v13i2.18625.
2. Rabinovich S.A., Razumova S.N., Vasil'ev Y.L. Functional cardiovascular assessment in dentists performing local anesthesia in outpatient settings. *Stomatologiya (Mosk).* 2017;96(1):20-22. doi: 10.17116/stomat201796120-22.
3. WHO guideline on the use of safety-engineered syringes in health care settings, 2016
4. Vasil'ev Y., Meylanova R., Rabinovich S. Assessment of the motor function of the hand in dentists with subclinical manifestations of carpal syndrome with local anesthesia. *Russian Journal of Pain.* 2017. T. 54. № 3-4. Pp. 54-59.
5. Rabinovich S.A., Babich T.D., Zinoveva A.I., Dashkova O.P., Zinovev I.A., Vasilev Yu.L. Dynamics of indicators of electronic pulp test of the teeth on the mandible against a background of intra-septal anesthesia. *International Dental Journal.* 2017. T. 67. № S1. C. 178.
6. Tarasenko S.V., Dydykin S.S., Shekhter A.B., Kuzin A.V., Polev G.A. Retromolar mandibular anesthesia. Radiological and topographical study of an additional method of lower teeth anesthesia. *Stomatologiya (Mosk).* 2013;92(4):44-9.
7. Vasil'ev YL, Rabinovich SA, Dydykin SS, Logachev VA, Pikhak UA. Possibilities of thermographic rating the level of microcirculation with local anesthesia in dentistry. *Stomatologiya (Mosk).* 2018;97(4):4-7. doi: 10.17116/stomat2018970414.