

dorov, Moscow 2015, 14 p.

11. Citizens of Yakutsk complain on too clean sidewalks. Electronic resource. Source: Gazeta Yakutia. Access date:

<http://www.gazetayakutia.ru/index.php/archive/item/19113-gorozhane-zhaluyutsya-na-chistye-trotuary>. Access date: November 17, 2015.

About the authors

1. Mark M. Shatz (Yakutsk, Russian Federation) – Ph.D. in Geography, Senior Research Officer Permafrost Institute. Melnikov, SB RAS 677010, 36, st. Merzlotnaya, Yakutsk, Russian Federation, e-mail: shatz@mail.ru)

2. Yuri B. Skachkov (Yakutsk, Russian Federation) – cand. geogr. science., senior scientific Permafrost Institute.

Melnikov, SB RAS (677010, 36, st. Merzlotnaya, Yakutsk, Russian Federation, e-mail: skachkov@mpi.ysn.ru)

3. Albina P. Cherepanova (Yakutsk, Russian Federation) – cand. geol.-min. sciences, scientific Permafrost Institute. Melnikov, SB RAS (677010, 36, st. Merzlotnaya, Yakutsk, Russian Federation, e-mail: albin99@mail.ru).

SCIENTIFIC REVIEWS AND LECTURES

A.A. Chakhov, I.D. Ushnitsky

THE ROLE AND IMPORTANCE OF ANATOMICAL AND TOPOGRAPHICAL FEATURES OF THE MANDIBLE AT MANDIBULAR ANESTHESIA

Abstract

The work presents the characteristic of anatomy-topographic peculiarities of the lower jaw. We describe in detail age changes of the branch and angular width of the lower jaw which need to be considered for carrying out adequate local anesthesia at dental interventions. The article speaks about features of anatomical structure of the lower jaw depending on gender, where indicators of the chin square contour, expressiveness of the submental eminence and adventive eminence, a deviation of tops of corners outside and eminence edge of corners have age and gender distinctions. Besides there are data on structure change of the bone tissue of the body of the lower jaw during human life. Similar changes in anatomy and topography are undergone by the mandibular channel. So, men have a distance from tops of roots of the first and second molar to the mandibular channel more than women and have three options of passing of the channel (high, average, lower). The mandibular channel in the body of the lower jaw is S-shape bent, as much as possible adjoining to a lingual cortical plate in the field of the third and second molars, turns on 45° around the first molar, approaches a cheek cortical plate and at right angle leaves a mental opening. At the same time the channel keeps a S-shaped form also in the vertical plane. Meanwhile, patients with a full edentia have reduction of distance between the mandibular channel and alveolar shoot of the lower jaw.

It is important to note what for carrying out adequate local anesthesia of the lower jaw has a certain value position of a lingula in age aspect which is located in front of mandibular foramen. At the same time the cross section of a lingual nerve on all its extent varies in form. Collateral branches of a lingual nerve innervate retromolar space and area of the lower third molar. And the lower alveolar nerve after an exit through a mental foramen is variable and asymmetric on different sides of the lower jaw – from one powerful trunk, without branches, to a series of the small branches which are scattered in the field of foramen.

It should be noted that when carrying out conduction types of anesthesia of the lower alveolar nerve there is a probability of traumatizing chorda of a temporal muscle, medial wing-shaped muscle, wedge-shaped and mandibular ligament, wing-shaped and mandibular ligament, neurovascular bunch entering into channel of the lower jaw, a wing-shaped venous texture, a maxillary artery, etc. that can promote formation of hematoma in wing-shaped and maxillary space and movement disorder of the lower jaw.

At the same time the main reasons for development of neurologic deformations after blockade of the lower alveolar nerve are traumatizing of the nerve by needle especially at repeated anesthesia as at the same time there is no protective painful reflex, injuring by the deformed needle edge (a fishing hook), endoneural introduction of anesthetic, fast introduction of solution of anesthetic (hydropreparation) at which happens stratification of covers of a nerve and neurotoxic effect of anesthetic.

All this dictates need of carrying out the further researches directed to the improvement of blockade of the lower alveolar nerve taking into account anatomy-topographical peculiarities of the lower jaw.

Keywords: lower jaw, anatomy and topography, age and sex distinctions, mandibular foramen, mandibular channel, mental foramen, lower alveolar nerve, mandibular anesthesia.

The authors:

1. FGAOU VO «North-Eastern Federal University named after M.K. Ammosov», Yakutsk, Russia:

2. Chakhov Alexander Dmitrievich, PhD, Associate professor, E-mail: alex-alex41169@mail.ru;
3. Ushnitsky Innokentii

Dmitrievich, MD, professor, Head of the Chair, incadim@mail.ru.

