

ACTUAL TOPIC

M.M. Shatz, Y.B. Skachkov, A.P. Cherepanova

STREET TRAUMATISM IN YAKUTSK AS A DERIVATIVE OF STATE OF ROAD SYSTEMS

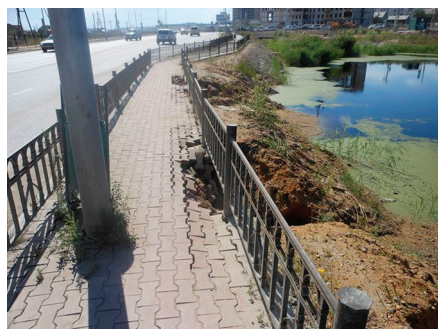
ABSTRACT

The purpose of the publication is to highlight the problem of street injuries in Yakutsk, due to the lack of reliability and safety of its sidewalks. The main causes of natural origin include flooding of surface areas of Yakutsk, due to violation of the migratory routes of many water bodies with stagnant water regime, change the vertical layout and leading to negative redistribution of surface and ground waters. Showing geotechnical problems associated with the condition of sidewalks unreliability, low quality of construction and quality of materials used, as well as the lack of control of the state. As a result, a significant part of the city sidewalks, especially in the transitional periods are a major hazard to pedestrians who receive varying degrees of injuries.

It was noted that the issues of safe, non-traumatological movement on the sidewalks in Yakutsk are relevant all year round, but they vary depending on the season. During the warmer months the main risk is related to the technical condition of the sidewalks and for moving around the pavement areas with defects or uneven surface it is enough to use attention and be careful. Often the movement in partially destroyed surfaces aggravates the process of their destruction. During the transition periods it is much more difficult, and sometimes impossible to avoid the danger. In September-October and March-April in the city are common air temperature changes with transitions through 0 ° C, with partial melting of the previously fallen snow.

As a result, when there's a strong cold wind on a large part of the sidewalk there is an ice layer, which is a special danger to pedestrians. With the first snowfall, in medical institutions there is a large number of injured people. On the icy sidewalks, in yards of houses and on the steps of the stairs in public organizations people break the bones of hands and feet, ribs, and receive more serious injuries. There are ways recommended to remedy the situation to ensure the stability and reliability of urban pavements, as well as behaviour rules reducing the risk of injury in the street.

Keywords: level of street injury, causes of unreliability of sidewalks, behavior rules.



a



б



в

Fig.1. Sergelyakhskoe shosse, Saisary lake: а – 2013, б – 2015, в – 2016. Photo by Skachkov Yu.

REFERENCES

1. Shatz M.M. Engineering and environmental problems of urban development of permafrost in the North (on the example of Yakutsk) / M.M. Shatz, V.V. Shepelev, O.I. Alekseeva [et al.] // SEVER: Arctic vector of social and environmental studies. - Syktyvkar, 2008. - p.97-109.
2. Shatz M.M. Geoenvironmental problems of residential northern territories / M.M. Shatz // Theoretical and applied ecology. - M., 2009. - №3. - p.46-51.
3. Shatz M.M. The present state of urban infrastructure of Yakutsk and ways to improve its reliability / M.M. Shatz // Georisk. - M., 2011. - №2. - p.40-46.
4. Shatz M.M. Modern flooding of Yakutsk / M.M. Shatz, S.I. Serikov // Science and Education, 2009. - №4. - p.162-171.
5. Shatz M.M. Yakutsk city infrastructure condition and its relation to climate change / M.M. Shatz, Yu.B. Skachkov // Ecology of the urbanized territories. - Publ. House «Kamerton», 2011. - №4. - p.18-23.
6. Shatz M.M. Oh, roads... / M.M. Shatz, Yu.B. Skachkov, A.P. Cherepanova

// Electronic resource, source: sakhalife;! access code: <http://http://sakhalife.ru/eh-dorogi>. access date: April 17, 2016.

7. Shatz M.M. Sidewalks in Yakutsk (the state of problems and solutions) / M.M. Shatz, Yu.B. Skachkov, A.P. Cherepanova // Electronic resource, source: sakhalife; access code: <http://sakhalife.ru/trotuaryi-v-yakutske-sostoyanie-problemyi-i-puti-resheniya/>, access date: May 3, 2016.

8. GOST 50597-93. Russian Federation State Standard. Highways and streets. Requirements for operational

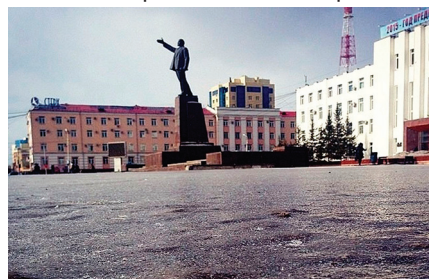


Fig.2. The ice layer on the Lenin Square. Photo by Markov A.



states, permissible under the terms of the road safety (approved. Resolution of the State Standard of Russia from 11.10.1993 N 221).

9. GOST P 52766-2007. Automobile roads of general use. arrangement of elements. General requirements. (App. Roshtechregulirovanie Order dated 23.10.2007 N 270-st).

10. Fedorov T.S. Medical and social aspects of injury Sakha Republic (Yakutia): the thesis for the degree of candidate of medical sciences, specialty - 14.01.15 - Traumatology and Orthopedics / T.S. Fe-



Fig.3. Fall on the icy pavement. Photo by Makeev A.

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.

