cylindrical trunk with its pointed end made from different metal. Period of treatment session is minimized due to simultaneous stimulation of acupuncture point by laser emission and mechanic insertion of the needle. Dissimilar metals are layer-by-layer, internal layer is a transparent metal. Instrument described above permit to irritate the acupuncture points by pointed end of the needle and by laser emission which pass through trunk from transparent metal.

2-nd group was control one and animals had ordinarytreatment course. Morphological study was performed 24 hours after the operation, 3, 7, 14, 21 days, 1, 2 months later.

We examined 42 patients in clinic. They have had rhinoplasty surgery of innate and acquired nose pathology.

All patients have had rehabilitation treatment postoperatively according to the following schema:

1. strict following of the treatment procedures,
2. local postoperative hypothermia,
3. complex antiphlogistic therapy,
4. prophylaxis of scleral haematoma,
5. redressing with keeping of plaster and change of external bandage,
6. treatment of schneiderian membrane and nose 7 days after moving off of tampon.

Patients were divided into two groups. Laser acupuncture was included into the complex of postoperative treatment for the patients of 1-st group (22 persons). 2-nd group of patients was control one. Laser acupuncture treatment course consisted of 10 sessions carried out either daily or every other day. The following acupoints were irritated by special acupuncture needle with optical glass fiber: Li4 (hegu), Li10 (shousanli), Li11 (quchi), Li19 (hejiao), Li20 (yingxiang), GB20 (fengchi), Si18 (quanjiao), St1 (chengqi), St2 (sibai), BI1 (jingming), BI2 (cuanzhu), GV25 (sujiao), GV26 (shuigou) [1,3]. Laseracupuncture treatment was carried out with acupuncture needle, patent of Republic of Belarus № 924 (FIG.1). Scheme of laser needle application is shown on the FIGURE 2.

Power density of light flow was not more than 5 mW/cm$^2$ for one AP. Time of its irritation consisted of 7-10 seconds to one AP. One session lasted 2 minutes at maximum.

## Results

Analyzed final data showed swelling and tissue infiltration healed in postoperative scar region authentically earlier for animals of the 1-st group ($p<0,01$). Rabbits of the 2-nd group had purulent-inflammatory process in 17,8% of cases when there are no complications recorded in the 1-st group.

We have achieved the following results during examinations in clinic. Patients of the 2-nd group have had problems with breathing by nose because of mucous tunic odema to the end of the ordinary treatment course. Low level of sense of smell was restored one month later. At the same time patients of the I-st group have had considerable reduction of nose mucous tunic odema. They did not use more vasoformative medicines and sense of smell was restored.

For the patients of 1-st group clinical treatment course consisted of 10-12 days. For the patients of 2-nd group that period composed 12-14 days. 2-nd group patients kept nose swelling while 4-6 months. Patients of the 1-st group did not have nose swellings 4 weeks postoperatively. Patients of the 1-st group passed in clinic 7 days less than 2-nd group patients.

## Conclusion

Laser acupuncture treatment with new laser acupuncture needle let combine two kinds of acupuncture treatment. It is effective and is to be included into the postoperative rehabilitation course for the patients after allogenic rhinoplasty. It let to recommend this method of rehabilitation of patients after allogenic phinoplasty for wide application.

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# EFFECTIVENESS OF ELECTRO-ACUPUNCTURE APPLICATION COMBINED WITH REHABILITATION PROCEDURES FOR THE PATIENTS WITH TRIGEMINAL NERVE NEURITIS DUE TO TRAUMA

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## Introduction

Problem of the face pain remains one of the vital and actual in modern maxillofacial surgery. Traumatic injuries to facial nerve branches, operative investigations, stomatological manipulations on mandible have been recognized to develop trigeminal nerve neuritis due to trauma in 84,2% of cases [1,4]. Paroxysm of pain progressing while mentioned above pathological processes do people unable to work. It has great social and economic sense. Last years they have told in domestic and foreign literature resources about necessity to apply acupuncture in complex treatment and rehabilitation for patients with neuralgia trigeminus. [5,6].
Our hypotheses about acupuncture effectiveness in case of its application in complex treatment of trigeminus neuritis were formed by O.N.Savitskiy's opinion that neuralgia trigeminus is initial form of neuritis.
Aim of this researche is to study effectiveness of complex electro-acupuncture stimulation combined with rehabilitation procedures in treatment of patients with trigeminal nerve neuritis due to trauma.

## Materials and methods

In our experiment 68 patients were involved. 1-st group of patients (32 patients) was subjected to traditional rehabilitation treatment. It was group of control. 36 patients 2-nd group were performed traditional treatment combined with electro-acupuncture treatment consisting of 10 sessions

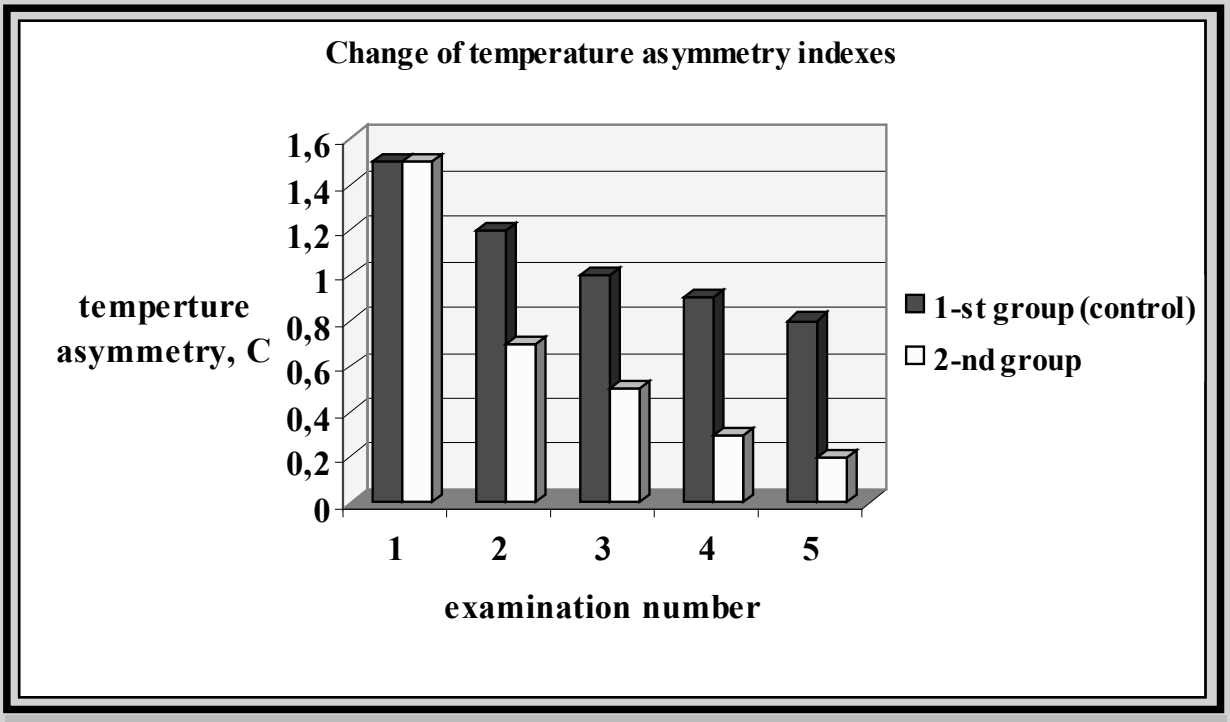


**FIG.1. Comparative appreciation of temperature asymmetry indexes change for patients if 1-st, 2-nd groups.**

carried out daily.

We have chosen the following acupuncture points for electroacupuncture stimulation according to the special manuscripts [2,3]:

1) general acupuncture points of strong vegetation: Li4 (heguy), Li10 (shousanli), Li11 (quchi), Li18 (futu), GB20 (fengchi);

2) local acupuncture points: Si18 (quanjiao), Si19 (tinggong), St5 (daying), St6 (jache), St7 (xiaguan) and out-channel acupuncture point located in skin projection of mental aperture, out-channel acupuncture point PC3 (intan) so-called "third eye". Electro acupuncture sessions were performed with device "Elita". Operation factors of alternating polarity current were changed constantly, but current strength did not exceeded 50 mkA for acupuncture points of maxillofacial area and 100 mkA for other part of body. It was in line with brake (sedative) method of application. Acupuncture points irritation was performed with brake method with needle expose within 30 minutes.

Patients were subjected to the following performed clinicals tests: treatment indices study themperature gradient on local thermometry in skin projection of AP, reography quantitative data of pain syndrome (appreciation max. 4 points), paresthesia and hyposthesia examination (appreciation max. 8 points).

Local thermometry in skin projection of acupuncture points of maxillofacial region was carried out under local thermometry 15 minutes after patient entered into the room. At the beginning of examination we have taken absolute thermometry in skin projection of extrameridian acupuncture point PC3 (intan) which presented reference zone. In order to take temperature we used electothermometer TPEM-1 scaled with 0,1°C. Examination of absolute temperatures was aimed to determine indexes of temperature gradient. Examination was performed on the acupuncture points located in the region innervation of affected trunk of n.trigeminus and acupuncture points of no-affected region of the face symmetric to them.

Tests above were passed in dynamic: while patients hospitalization or after the operation (1-th examination) 5 (2-th examination), 10 days (3-th examination), 1 months postoperatively (4-th examination), 6 months postoperatively (5-th examination).

## Results

Electro acupuncture in complex treatment was aimed to:

- provide antiphlogistic influence,
- reduce edema and swelling of nervous trunk,
- get sensitizing effect,
- improve total human body resistance,
- make working of adaptive and compensatory reactions,
- renew impulse gone conductivity by nervous trunk.

Detaled examinations showed authentic distinction confirming advantage of results in 2-nd patients group on base of mentioned above clinical tests results in respect of the control group.

Authentic distinctions according to the heat indices of the human body were recorded with coefficient of significance equal to $p<0,02$, local thermomettry - with coefficient of significance equal to $p<0,05$, and reography - equal to $p<0,02$, to the fifth day to the 10-th day it was $p<0,01$, $p<0,05$, $p<0,02$ correspondingly. In 1 months, 6 months succeeded distiwelous were established according to the thermomethry ($p<0,05$) and reography ($p<0,001$) only.

Comparative appreciation of temperature asymmetry indexes change for patients if 1-st, 2-nd groups is presented on the FIG.1.

## Conclusion

Achieved results give to conclude of is advisable to include electro acupuncture to the rehabilitation treatment course for the patients with trigeminal nerve neuritis due to trauma. It has positive effects while treatment procedures.

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# OSTEOINTEGRATION UNDER INFLUENCE OF MAGNETOACUPUNCTURE (EXPERIMENTAL CASE)


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## Introduction

Human body tissue regeneration is one of actual medico-biological problems. According to the special medical literature, great attention is paid to the study of reparative regeneration of bone tissue for patients with surgical pathology of mandible [1]. At the same time the main problem is to find methods for tissue regeneration stimulation which have to correspond to two general requirements: 1) influence to reparative regeneration process must provide only realization of those capacities which have primary tissue under examination but not change regeneration possibilities; 2) performed influence must be harmless at maximum and do not provoke by-effects, aggravating factors are not to be caused.

This problem is also worthy of notice because of craniomaxillofacial area injuries augmentation last years. So, quantity of traumatic fractures of mandible is increased and composes 67% - 85% [2,6]. At the same time, scientists of the world examine influence of different physical factors as well as magnetoacupuncture and alternative methods on the morphological characteristics of the bone tissue for the patients with diseases of osteoarticular system [4,5,7]. There important advantage before medicines is stimulation of microcirculation and immunological reactions and involve metabolism normalization. Till now, no information in official literature resources about magnetoacupuncture application with alternating magnetic field for stimulation of reparative processes of bone tissue of mandible after traumatic injury.

**Aim** of the work is to study magnetoacupuncture influence on the regeneration of traumatic injuries of bone tissue of mandible in experiment.

## Materials and methods

Research has been performed on the 12 dogs divided into two equal groups. Intravenous anesthetic of thiopental sodium 10% has been applied for all animals – 40 – 45 mg per 1 kg of animal weight. This method of anaesthesia gave possibility to do operation on the mandibular bone during 1,5 – 2 hours without additional medicines. 15 ml of thiopental sodium 10% has been applied for animals during the operation. This anaesthesia medicine was effective to avoid complications during anaesthesia course and at the end of operation when this course was finishing.

Operations have been performed in aseptic conditions. Incisions performed parallel to the edge of body of mandible in 1 sm from it. Skeen, subcutaneous fat and platysma have been cut keenly. After periosteotomy and skeletonization of the horizontal segments of body of mandible, osteotomical cut has been performed at an angle of 80°-90° by dental drilling machine in the region of bottom edge. Neurovascular fascicle has been kept undamaged. We have extracted teeth, roots of which have been on the line of cut. Operation wound was treated with lincomycine hydrochloride 30% - 5 ml and sew up. Sutures have been treated with iodine. The same operations have been performed on the opposite side of the animal mandible. Postoperatively all animals have had 7 days antibacterial and antiphlogistic course. Animals of the I-st group have had traditional treatment course. This group of animals was control one. Animals of the II-nd group have had the same treatment combined with magnitoacupuncture by alternating magnetic field. We have used a special device for magnetotherapy. One plane magneto was used. Its induction of magnetic field was 30 mT, frequency - 50 Hz. We have stimulated skin in the region of skin projection of acupoints Li4 (hegu) and Li11(quchi) by turns. Acupuncture points localization was determined according to the manual by Chen Jing [3]. We have chosen the mentioned above acupuncture points for stimulation because they represent general acupuncture points with strong vegetation and the Large Intestine Channel of Hand-Yangming is directly connected with zone of traumatized regions of animal mandible. Treatment course consisted of 10 sessions with stimulation of acupoints projection regions during 5 min.

Sampling of materials for morphological tests was performed 7, 14, 21 days and 1, 2 moths after the operation. Samples were put in 10% neutral formalin. They were decalcified in nitric acid. According to the general rules samples were processed by spirits of different degree and after that they were put under paraffin. So prepared mounts were paint with hematoxyline-eosine and by Van-Guison's method.Prepared samples were examined by microscope.

## Results

After having examined morphological characteristics of the reparative process of bone tissue of mandible in I and II groups of animals, we have seen that terms of traumatic bone regeneration in the II-nd group of animals have been shorter. During examination with microscope of the samples of the animals which were subjected under magnetoacupuncture course, taken 7 days after the operation, we have seen insignificant difference with control group of animals. Regarding the periosteum, there no proliferative reaction found. Destructive changes as focus of marrow necrosis and