

kept undamaged. The artificially made defect of the bone was filled in with the modeled implant in the form of block of «Byossital» material providing its firm adherence to the injury sides. The sutures were cleansed with 1% alcohol solution of iodine. Animals were treated with antibiotics of the penicilline group on the basis of 500 Units per one kg of the animal weight in order to provide the prophylaxis measures for pyoinflammatory complications.

The acupoint similar to the GI4 was irritated with the strong brake method every day during 10 days. Acupuncture needle exposure made 30–40 minutes.

In order to provide the materials sampling for histological examination, the experimental animals were removed from the experiment with thiopental OverDose according to the following terms: 14, 21, 28 days and 6 months. The macrospecimens were fixed in the 10% neutral formalin and they were decalcified by the nitric acid and placed into the paraffin. The mounts were stained with hematoxylin-eosin and by Van-Gison.

Results

The reclaim consisted of the specific young osteogenous tissue with formation of the bone tissue trabecules growing to the corner parts of the pores was formed by the 14 days around the inserted the implant.

21 days later, the specific osteogenous tissue surrounding the implant and separating its with taenias continues formation. The main weight of the specimen was lost during its processing with the nitric acid. Expressed regeneration of the bone tissue was fixed. Trabecular structures with directed growth to the implant side were formed. At the place of the dissolved parts of «Byossital» we fixed the free cavities, ingrowing girder of the bone tissue and surrounding free parts formed due to the dissolved implant had mature form.

By the 28 day the microscopic picture was similar than by the 21 day and osteogenic structures continues growing.

6 month later implanted materials had the form of small rounded conglomerates which were surrounded with new mature bone tissue. Interfaces with the injury were not found. At the same terms the regenerated bone tissue surrounding the implant had clear specific trabecular bone tissue structure. It was not possible to fix deep invasion of the bone tissue trabecules into the implant pores. But the much deeper invasion of the connecting fibers without signs of the osteogenesis was fixed.

The traces of the graft rejection (bone tissue necrosis, inflammation reaction, cells of the foreign body) were not fixed during all terms of examinations as from the side of the bone tissue as well as from the soft tissues surrounding the implant.

Conclusion

Described below glass-ceramic material «Byossital» that we applied for reconstruction of the bone tissue injuries has high level of the biocompatibility and its complex application with acupuncture provides adequate osteointegration with the bone tissue of the recipient. So, the offered complex of treatment becomes more perspective in restoration of the bone tissue defects of the maxilla.

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METHOD OF THE PYOINFLAMMATORY COMPLICATIONS PREVENTION IN TRAUMATIC INJURIES OF THE INFERIOR ALVEOLAR NERVE OF TOXIC GENESIS. EXPERIMENTAL CASE

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Introduction

It is obvious that the fractures of the lower jaw accompanied with injuries of the inferior alveolar nerve are complicated with osteomyelitis in most of cases [1]. According to the G.I. Sementchenko's theory (1958) pathogenesis of the maxilla osteomyelitis should be considered as neutrophilic process [5]. During long irritation of the peripheral nerves, the trophism of the bone tissue is deranged what provokes formation of the necrosis focuses. Furthermore, the pathological impulses come continuously in the cerebral cortex from the focuses of the permanent irritation of the

peripheral nerves. They provoke and support the vascular disorders of the maxilla in a reflex way due to which the trophism of the tissue is broken and make favorable conditions for infection processes development [3]. The problem of prophylaxis of complications after the endodontic treatment remains actual up till now (particularly, removal of the filling materials outside of the apical hole). But, it's to underline that endometazon is zincoxidevgenal cement mixed with the paraformaldehyde and steroids which are often used for filling of the root canals.

The nerve tissue becomes imbued with the paraformaldehyde when contacting closely with the nerve trunk and it provokes coagulatory necrosis. When washing-out of the paraformaldehyde, infection agent gets into the tissue and expressed inflammatory reaction is developing which provokes osteomyelitis disease often [6].

Last decades, the acupuncture treatment became very known between doctors of different specialties and was scientifically based grounded or its wide use in the practical public health care and maxillofacial surgery as well [4]. Acupuncture treatment is effective, completely harmless, should be combined or can replace some therapeutical treatments.

Cited facts confirm that it is necessary to continue deeply examinations of acupuncture effects for prophylaxis of beginnings and development of pyoinflammatory diseases of the maxillofacial area.

Aim of work was to make comparative assessment of the pyoinflammatory complications quantity due to traumatic injuries of the inferior alveolar nerve of the toxic genesis experimentally when different treatment methods applied.

Materials and methods

The model of the toxic neuritis of the inferior alveolar nerve was made on the 25 rabbits of Shinshilla breed (males almost of the same weight).

Operations were performed under the intravenous anesthesia. When the lower jaw and mandibular canal were prepared for operation, the paste on basis of the paraformaldehyde for root canals filling was put into the perforated hole of the inferior alveolar nerve. The wound was sewed layer by layer and treated with 1% Solution of the brilliant green.

All experimental animals had intramuscularly single injection of 500000 units of the benzylpenicillin for prophylaxis of the pyoinflammatory complications development.

Animals were divided in two groups. Group I (15 animals) had antibacterial therapy only. Animals of the group II (10 animals) had antibacterial therapy combined with acupuncture. The acupoint similar to the GI4 was irritated with the acupuncture needle № 5 with the first variant of the breaking method. Exposure period made 40 minutes and the treatment course consisted of 10 sessions performed every day. Acupoint localization was determined according to the special literature [2].

We performed the experimental animals examination and the state of the postoperative wounds in dynamics, the materials sampling for pathomorphological examinations was made 3, 7, 14, 21 days after operation and 1, 1,5, 2, 2,5, 3, 4, 5, 6 months later.

Results

Animals of the group I had pyoinflammatory complications as osteomyelitis of the lower jaw complicated with abscess of the submental region. These pathological processes were developing 1,5 months and later what corresponds to the terms of the chronic osteomyelitis development according



FIG.1. Chronic osteomyelitis of the lower jaw with subperiosteal abscess. Term of examination - 1,5 months.

to the special literature [3].

Osteomyelitis of the lower jaw developed for 40% of the I group animals during the 1,5, 3, 4, 5, 6 months. Clinically, at the place of the access to the canal of the inferior alveolar nerve and the filling material injection on base of paraformaldehyde, cuff thickening of the lower jaw was determined and had dimensions 0,5x0,7 cm - 1,0x2,0 cm, subperiosteal abscess was formed. The focus of destruction was separated by dense connective tissue capsule (FIG. 1). The content of the subperiosteal abscess – white pus with bad smell. Inferior alveolar nerve was closely connected with the bone tissue and was difficult for determination. The structure of the bone at the place of trauma was considerably disturbed and changed. Mandibular bone was fragile at the place of the focus of trauma.

Animals of the group I had abscesses formation in 33,3% of cases during the terms of examination 1,5, 2,5, 3, 6 months. The pyoinflammatory focus was located in the mental area by the middle line and its diameter made 3 cm, the well formed tissue-connective capsule. The abscess content was presented by the purulent effluent of white color of bad smell. One rabbit had the abscess broken spontaneous and a fistula was formed at 5 month of examination.

The animals of the group II had no complications. The defect of the bone tissue was replaced by the bone tissue at the place of the trauma and there was no signs of the osteomyelitis. The filling material was resolved partially. There was no a cuff thickness of the mandible at the place of trauma and the periosteum cicatricially changed and connected with the bone was found only at the place of operation. These changes had the local signs only, the thickness was 0,3-0,5 cm and no purulent exudation found (FIG.2).



FIG.2. Thickened cicatricial-changed periosteum find out in the postoperative area only. Term of examination - 1,5 months.

Conclusion

Acupuncture application postoperatively for the animals of traumatic neuritis of the trigeminal nerve of the toxic genesis contributes to the significantly reduction of pyoinflammatory complications. This fact is the base to continue the experimental and clinical examinations of this kind and elaboration of the new methods of postoperative treatment of patients with toxic injuries of the inferior alveolar nerve during which the acupuncture should be considered not only as the treatment method but the prophylaxis one as well.

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STUDY OF RESULTS OF MICROCRYSTALLIZATION INDICES CORRELATION IN DIFFERENT BIOLOGICAL FLUIDS. EXPERIMENTAL AND CLINICAL CASE

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Introduction

One of the new methods of diagnostics and prognostication of our days is the functional morphology of the biological fluids. [1,2,3]. It is based on the analysis of the morphological picture of crystal and amorphous structures in the dehydrated biological fluids (BF). Phase change of BF into the solid state gives possibilities to fix molecular correlation in this difficult system and make their examination easier [5].

Totally, this method allows not only to evaluate effectiveness of performed prophylaxis, treatment and rehabilitation procedures but to prognosticate pathological processes and possibilities of their development [4].

But, there is no objective proofs for correlation of microcrystallization data of different biological fluids of the serum of blood (SB), oral fluid (OF), urine and exudation of the wounds for the experimental animals and SB, oral fluid and urine for men.

Aim of work was to make scientific bases for the oral fluid microcrystallization as the common indices of the human body homeostasis according to the comparative assessment of the microcrystallization data of the biological fluids for experimental animals and people.

Materials and methods

We examined 10 experimental animals of rabbits males of Shinshilla breed of the same weight and age and 10 persons (males) at the age of 18-25 years old. We depilated the back skin 2,5x2,5 cm of area and made the cut 1,5 cm of length under the local anesthesia. We cut the skin, under skin sellular tissue till the fascia and then we made 3 interrupted sutures with vicril 3/0. the wound was treated with 1% Solution brilliant green.

Three biological fluids (serum of blood, oral fluid, urine, wound exudation) were examined for microcrystallization for all patients. These biological fluids were taken at the same time of the day and for every animal and people.

Blood sampling was taken from the elbow veins of the people and marginal elbow of the ear of the animals. Than it was separated for serum and pellet fraction during the centrifugation within 10 minutes by 3000 turns/min. The oral fluid sampling was made with microdispenser from the oral cavity directly. The urine was placed into the sterile test-tubes. The wound exudation was taken during the experiment with the sterile eye pipette passing between the sutures deep into the wound. All biological fluids were put on the object-plate with the pipette doser by three drops, each volume was 0,01 ml. The samples of the biological fluids were dried under the room temperature in horizontal state than they were examined with the stereoscopic microscope. We took for examination the drops which microcrystallization picture was met more than two times.

The first type of microcrystallization was presented by the elongated of prismatic form crystalline structure, with radial orientation more often. The second type looked like isothermally placed crystals without clear orientation. Third type was presented by small isolated, single and non-aligned crystals.

We have analyzed 210 samples of biological fluids during this examination what corresponds to 70% of the total quantity of samples.

Results

During the examination we did not identified the I type of crystal organization according to the results of the serum of blood samples examination. II type was identified in 30% of cases and the III type was found in 70%.

Oral fluid indices confirmed that the I type of microcrystallization was found in 10% of examinations, II type – in 50% and the III type – in 40% of the people that we examined.

Results of the graining in urine confirmed that the I type was not found, II type was fixed for 40% of the experimental animals, III type – for 60%.

Microcrystallization indices of the postoperative wounds exudation did not showed organization of crystals, the II type