



Diagrams: CS-binding ability of fibrils of collagen types I (purple), II (red) and III (yellow) measured by Dimethyl methylene blue assay (left), and hexosamine assay (right).

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METHOD OF MODEL FORMATION OF TRAUMATIC OSTEOMYELITIS OF MANDIBLE IN EXPERIMENT

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[*Engineering of Biomaterials*, 47-53,(2005),13-14]

Last years cranio-maxillofacial injuries became more frequent, so the quantity of traumatic fractures of mandible is increased and is changed from 67,4% to 85% in dependence of country region, social status of the population. Regardless of the wide application of the modern treatment of the mentioned above pathology, the level of inflammatory complications stay high at the range from 2% to 12%. Last time the character of inflammatory processes has changed. Hard forms of purulent infections on different anatomic areas are frequently met. Traumatic osteomyelitis treatment is a complex problem which demands great attention to it and is to be permanently improved. Adoption of modern methods of treatment and rehabilitation in clinic is to be studied in advance. According to the special literature resources there is no common opinion what animal is to be chosen for experimental studying. In majority of cases rabbits are subjected for experiments. But this model is not quite satisfactory because it is possible to re-create the line of fracture on that area of mandible where the teeth are missing. Taking into consideration that fact in complex with properties of immunological processes for this kind of animals we have found bone tissue regeneration of all experimental animals during 2 - 3 weeks. That is why last years they have taken a dog as a model for bone tissue regeneration experiment after traumatic fractures and while complications [1, 3, 5, 6, 7, 8, 9]. There is no doubt that immunological status of a dog is different from human one. But denture description, mandible structure, local factors of the oral cavity allow to approximate the experimental model conditions to the clinic situation at the most.

Aim of the research

is to create experimental model of mandible traumatic osteomyelitis when a dog is used as a laboratory animal.

Materials and methods

Experiment was performed on 22 watchdogs. All animals were at the age from 2 to 4 years old and there weight was 9 -10 kgs. Operation has been done under intravenous anesthesia with Sol. Thiopentali-Natrium 10%, 40-45 mg per 1 kg of the animal weight. Using of that anesthesia treatment has permitted to make operations on mandible within 1,5 - 2 hours without additional anesthesia. They have inserted approximately 15 ml of Sol. Thiopentali-Natrium 10% while one operation procedure. That method gives to avoid complications during operation procedures as well as after it.

Operations have been performed in aseptic conditions. Incision has been made parallel in 1 sm to the edge of the mandible. Skeen was cut till the bone. After the periosteotomy and skeletization of horizontal part of mandible made by stomatological equipment, osteotomy has been performed under the angle of 80° - 90° in the region of 35 or 36 teeth. Nerves and capillaries have been cut and mucous membrane of alveolar appendix has been damaged. Fangs in the line of fracture have not been extracted. After that osteosynthesis by dynamic compression plating has been done. The wound was cultivated with 5 ml of Sol. Lincomicini 30%. Layer by layer, they have put stitches in a wound by superamide. Stitches were cultivated by Sol. Iodi Spirituosae 5%. Postoperatively animals had mechanically hard diet (habitual one for this kind of animals). We succeeded to take traumatic osteomyelitis in 100% of cases of examined animals experimentally with model clinical descriptions: presence of sinus tract with suppuration, granulation tissue, mobility of mandible parts, presence of big dimensions sequestration with granulation tissue between tissue fragments.

That method of model formation of traumatic osteomyelitis of mandible in experiment is different from known models and has the following advantages:

- 1) It is easy for application. There is no necessity for additional medical equipment and medicines use.
- 2) It allows creating the model in short terms.

Also, when formatting the model the same etiological agents of complications for traumatic fractures as for clinical conditions were taken into account. Namely:

1. Damage of bone integrity
2. Factor of bone wound infection
3. Trophism and blood flow stopping in the region of the line of fracture
4. Presence of fangs in the line of fracture

Conclusion

Research results allow to advise mentioned above method and model of traumatic osteomyelitis formation of mandible for application in experimental studying of different methods and ways effectiveness for treatment and rehabilitation procedures of that pathology.

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CARIES DISEASES PREVENTION BY LASER ACUPUNCTURE NEEDLE

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[*Engineering of Biomaterials, 47-53,(2005),14-15*]

While many years dental caries stays one of the general problem of stomatology [1,3,4,7,8,9]. Elaboration of new modes and methods of its prophylaxis and treatment is a global task for the specialists of the world. Caries is provoked by different local and total factors. That is why it is practically evident prophylactic treatment of this disease should be complex and applied procedures should have many-sided mechanisms of acting which could level func-

tioning balance of parasympathetic and sympathetic nervous systems, return to normal organism homeostasis and oral cavity indexes providing optimal correlation of dental enamel dynamic balance - oral fluid. One of the most effectiveness methods corresponding to the mentioned requirements is reflexotherapy.

Aim of this research

is to analyze and appreciate caries prophylactic effects by laser acupuncture needle on the base of clinical tests.

Materials and methods

In our experiment 253 persons 15 - 25 years old were involved. They were divided into two groups. Caries, teeth stopping, extracted teeth index was equal to zero for the patients of the 1-st group composed of 27 persons. It was group of control. Acupuncture stimulation was performed by laser acupuncture needle (patent No 924) for the patients of the 2-nd group composed of 185 persons. No additional prophylactic treatment was applied for them. Every group was divided into three subgroups according to the caries intensity level (CIL): A - low CIL, B - middle CIL, C - high CIL.

For laser acupuncture stimulation the following classic meridians situated in the maxillofacial area were chosen: GJ, E, IG, VB. To produce an acupuncture effects total and local acupuncture points (AP) of above-mentioned meridians situated on the face, frontal part of neck in the region of skin projection of salivary glands and nerves responsible for AP innervation were used [2, 6]. The course of laser acupuncture treatment included 10 sessions with daily or in a day exposure was applied. Indexes of caries increasing and caries increasing reduction, data of structure and functional resistance of enamel (SFRE) by V.R.Okushko, L.I.Kosareva, I.K.Luckaya (1982) [5] method were used to appreciate caries prophylactic effects. Those indexes were examined four times for the patients of 1-st and 2-nd groups. First examination was performed when patient saw the doctor for the first time; second examination - in a month after the first visit to the doctor (for the patients of the 1-st group) and in a month after laser acupuncture stimulation course (for the patients of 2-nd group); 3-rd and 4-th examinations had place one and two years later correspondingly.

Results

Detailed results analyses confirmed that increased SFRE index of the 1-st group patients was for certain higher than control level ($p < 0,001$) while the hole period of examination. Regarding to the initial indexes authentic results increasing was fixed in subgroup A while 7-th examination ($p < 0,01$), in subgroup B - while 3-rd examination ($p < 0,05$), in subgroup C - while 4-th examination ($p < 0,001$). At the 2-nd group SFRE index in subgroup A had not authentic difference from control level beginning from the second examination. It means SFRE index reached the level of the norm. In subgroup B the same result was fixed beginning from the 3-rd examination. In subgroup C authentic difference with control indexes was marked ($p < 0,001$; $p < 0,01$; $p < 0,02$; $p < 0,01$) correspondingly to the numbers of examinations.

Difference from results of initial indexes were marked in all of subgroups while examinations.

It is necessary to say caries process increasing was progressively reducing in the 2-nd group while all of examina-