

CLINICAL AND HISTOLOGICAL RESULTS OF ACUPUNCTURE INFLUENCE ON ACUTE PYO-INFLAMMATORY PROCESSES DEVELOPEMENT IN SOFT TISSUES. EXPERIMENTAL CASE

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Introduction

Last years, quantity of acute pyoinflammatory diseases in maxillofacial area is increasing, complications become more frequent, as a result specialized clinics functioning is very intensive [6]. This pathology consists 27,2%-61% of total amount of patients [3] and 10–20% of patients in specialized clinics [2,9]. According to the information presented by Chair of Cranio-Maxillofacial Surgery [4,5] they performed 5063 operations during 2000–2005 years, 78,7% operations performed in case of emergency. Considerable part of urgent operations was presented by phlegmons – 36% (mouth floor - 25%, peripharyngeal space - 5%, neck sides - 6%), mediastenitis - 1%. Augmentation of patients quantity with inflammatory complications is paradoxically when quantity of specialists in stomatology increases, conditions for working become better, quality of materials and toolware becomes better, new medicines and modern technologies are applying [7,8].

Last decades, acupuncture was acknowledged by physicians of different specialties and scientifically proved to be widely used by public health services as well as in cranio-maxillofacial surgery [1,10]. Acupuncture treatment is effective, harmless, can be complementary with other medicines or replace pharmacotherapy and physical therapy.

Facts above confirm is necessary detailed studying of acupuncture effects on pyoinflammatory diseases development in human organism and maxillofacial region particularly.

Aim of research

is to analyse histological results of acupuncture application in complex treatment of acute pyoinflammatory processes of soft tissues in experiment.

Objects and methods

Experimental model of pyoinflammatory processes of soft tissue after operation was formed on 20 guinea pigs of the same weight, sex and age divided into two groups. I group consisted of 10 animals, underwent antibacterial therapy course and was group of control. II group consisted of 10 guinea pigs underwent antibacterial therapy course combined with acupuncute treatment. First variant of brake method was used for acupoint GI4 irritation by needle

№5. Exposure time was 40 minutes and treatment course consisted of 10 sessions performed every day. Every day we were taking care of experimental animals and checking postoperative wounds conditions. Tests for histological examinations were taken 24 and 48 hours postoperatively, 3,7,21 days later.

Results

According to the clinical state of the 1st group of animals, inflammatory process was significantly weaker and finished by 7-8 day. The same results were achieved by 3-4 day for the animals of the 2nd group. Wounds cicatrix of the animals in the 2nd group were better aesthetically by 21 day after operation, there was no eschar, inflammation finished. A the same time, 40% of animals of group of control had inflammatory processes and eschar of the wound had 20% of animals.

There was difference between results of examinations with microscope 3 days after operation for animals of the I (FIG.1a) and II groups. (FIG.1b).

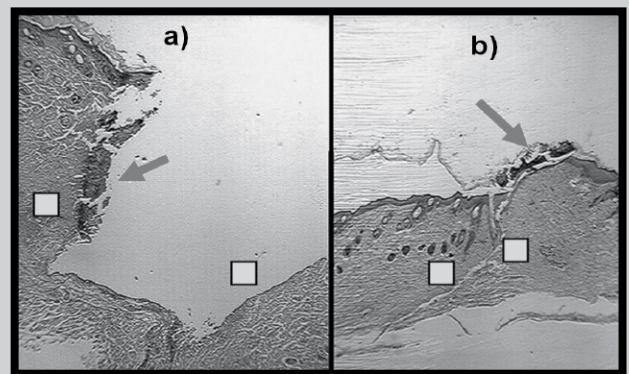


FIG.1. Morphological picture 3 days after operation. Stain with hematoxylin-eosin. Magnification x 125.

Wound chamber was cleaned from neucrotic dendrite, its edges were closer, a little of purulent discharge was found on the wound edges for the II-nd group of animals. Practically, there was no wound canal and it was a defect on the top part of the wound by 7 day for the II-nd group of animals. Scar tissue inside and epithalamus outside of the wound were forming (FIG.2a). Regarding the group of control, canal of the wound was reduced but its depth remained at the same time. Epithalamus was formed on the edges of the wound. There was a lot of neucrotic dendrite inside of the wound (FIG.2b).

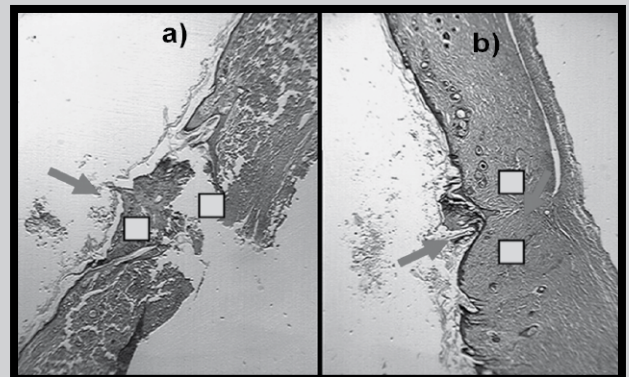


FIG.2. Morphological picture 7 days after operation. Stain with hematoxylin-eosin. Magnification x 125.

By the 21 day, wound canal was closed and epithalamus restored for the animals of the II group. There was no hair follicle at the place of the wound. The scar was not determined. At the place of the wound the coverlet was regenerated (FIG.3a). At the same period of time, the canal of wound was absent and epithalamus appeared on the wound edges in the group of control. Considerable quantity of neucrotic dendrite was on the surface of the wound, inflammatory reaction inside (FIG.3b).

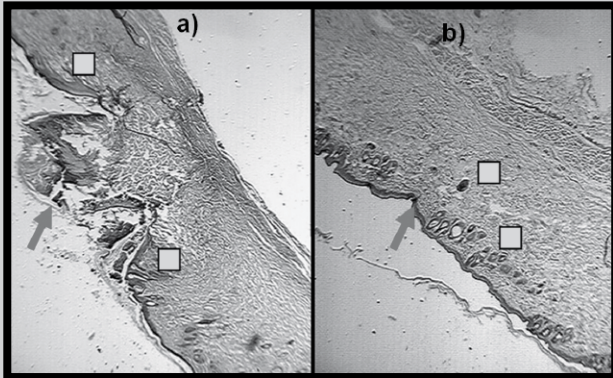


FIG.3. Morphological picture 21 days after operation. Stain with hematoxylin-eosin. Magnification x 125

Conclusion

Acupuncture has positive influence on the clinico-morphological characteristics of pyoinflammatory processes development in soft tissues. Acupuncture treatment could be advised for wide use in treatment of patients with septic complications in cranio-maxillofacial region.

References

- [1] Avdeeva E.A. Examination of complex acupuncture treatment effectiveness in complex with rehabilitation procedures for patients with traumatic neuritis of trigeminus //Bul. Rus. med. university. Spec. issue «Math. Pirogovskaya stud. scient. conf. - 2004. - V.34. - №3. - P. 32.
- [2] Haritonov Y.M., Girko E.I. Kikov R.N. and oth. Pyoinflammatory and septic infection in maxillofacial area: diagnostics, treatment, complications prevention//Mat. of res. «Modern methods of prophylaxis, diagnostics and treatment of great diseases». Voronez, 1998. - P. 102-103.
- [3] Kubaev R.E., Shavazi N.M. Clinico-geniological analyze of family tree of children with pyoinflammatory diseases of jaw //Med. scient. and stud.- method. journ.- 2001.- №3.- P. 152 – 158.
- [4] Pohodenko-Chudakova I.O., Kazakova Y.M. Frequency of pyoinflammatory complications of odontogenic etiology in soft tissues of lower jaw //Rus. stom. journ. – 2005.– №4.– P. 20–22.
- [5] Pohodenko-Chudakova I.O., Yanovitch G.V., Rudaya E.V. Optimization of intubation for patients with pyoinflammatory processes in maxillofacial region//Bul. of articles «Medicine of critic states. Perspectives, problems, decisions». Ekaterinburg: MZ Sverdlovskoy obl., NPRZ «Bonum», 2006. - P. 111–115.
- [6] Shargorodskiy A.G. Prophylaxis of inflammatory diseases of face and neck and complications meet in polyclinics //Works. VII Rus. Congr. of stomat. M., 2001. P. 126–128.
- [7] Supiev T.K. Pyoinflammatory diseases of maxillofacial area. M.: Ed «MEDpress», 2001, 160 p.
- [8] Surgical infections: guideline /Under red. I.A.Erohin, B.R.Gelfand, S.A.Shliapnikov. STp: Piter, 2003, 864 p.
- [9] Ushakov R.V., Tzarev V.N. Complex approach for antibacterial therapy in odontogenic pyoinflammatory diseases of maxillofacial area //Rus. stom. journ.- 2003.- №6.- P. 40–44.
- [10] Zivenko A.V., Zivenko E.A. Mechanisms of acupuncture influence on the coverlet regeneration and local thermomerty//Mat. III congress of maxillofacial surgeons of Belarus «Organization, prophylaxis, treatment and rehabilitation in maxillofacial surgery». Vitebsk: VGMU, 2007. - P. 84–87.

RESULTS OF LASER ACUPUNCTURE INFLUENCE ON LOCAL CLINICAL AND LABORATORY INDICES AFTER DENTAL IMPLANTATION IN EXPERIMENT

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Introduction

Last decades, method of dental implantation is widely used as well as other methods of special dental care applied by cranio-maxillofacial surgeons and orthopedist in Belarus [8,10]. Osteointegration is a process undergoing changes and not something stable [2]. Many factors influence on implant osteointegration: state of bone, implant characteristics, operation itself, quality of prosthesis in the future. In special medical literature they say that all processes taking place in head, neck regions, oral cavity influence on quantitative and qualitative indices of oral fluid [3,11,12]. Latrogenic injury of bone tissue has place during operation for dental implantation as well as aseptic inflammation which activate regeneration processes or can provoke tissue lyses [4,9]. Meanwhile, the longer and well-defined postoperative inflammatory process, the better direct and long-terms results for dental implantation operation [13]. At the same time inflammatory and destructive processes of the oral cavity influence on the change of pH level of biological medium of the oral fluid [5]. Achievements of modern medicine let to form more favorable conditions for broken bone tissue regeneration with medicines, treatment by laser and acupuncture [7,11]. But there is no information in special medical literature about results of laser acupuncture influence on pH of oral cavity after operation of dental implantation in experiment.

Aim of the work

is to study laser acupuncture influence on pH of natural biological medium of oral cavity after dental implantation.

Objects and methods

Rabbits were chosen for experimental model. We observed 40 males at the age 7-8 months, weight 2,8–3,2 kg. Experiment consisted of two runs, 20 animals per run. Dental implantation was performed after right central lower incisor extraction for all animals. Transplant bed was formed with drill point of increasing diameter in the alveolar socket of the extracted tooth. Drill point was cooled with salt solution. Than tap was screwed and titan implant Verline was fixed. The wound was treated with 0,05% solution of chlorhexidine bigluconate and closed with polyglycolipid 4-0 layer by layer. Sutures were treated with 1% solution of brilliant green. Operations were performed with general anesthesia application of 10% solution of thiopental sodium intra-abdominally and infiltration anesthesia applica-