The Zmi fibers were traced to observe their arrangement and attachments.

Results and Discussion. The Zmi was formed by the muscle fibers that arose from the zygomatic bone and the muscle fibers that extended from the orbicularis oculi muscle (OOc) in 96.9%. When the Zmi inserted into the upper lip, ithad more muscle fibers from the OOc than the zygomatic bone in 31.3%, and from the zygomatic bone than the OOc in 50.0%. Amounts of the Zmi fibers from the zygomatic bone and the OOc were similar in 15.6%. In 93.8%, the muscle fibers that extended from the OOc constituted the lateral margin of the Zmi, usually descending to the level between the nasal ala and the vermilion border of the upper lip and inserting into the upper lip. Some of the Zmi fibers that arose from the zygomatic bone blended with the inferior fibers of the OOc in 40.6%, and they constituted the inferior and medial margins of the OOc.

Conclusions. The data regarding the arrangement and attachments of the Zmi fibers connecting the orbital and mouth regions will be useful for electromyographic analyses, botulium toxin type A therapies, and various facial surgeries.

ANATOMICAL FEATURES OF THE INCISIVUS LABII SUPERIORIS MUSCLE AND ITS RELATIONSHIPS WITH THE UPPER MUCOLABIAL FOLD, LABIAL GLANDS AND MODIOLAR AREA

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Key words: *face, maxillofacial area, facial muscles, spatial relationships, incisivus labii superioris muscle*

Aim. The current study examined the incisivus labii superioris muscle (ILS) and its morphologic and spatial relationships with the surrounding structures, especially focusing on the upper mucolabial fold, labial glands, and modiolar area.

Material and Methods. ILSs were investigated in 52 specimens from embalmed Korean adult cadavers.

Results and Discussion. ILSs were observed in all specimens (100%). The ILS had an oblique and linear origin. The ILS originated from the incisive fossa of the maxilla to the point just medial to the origin of the levator anguli oris muscle (LAO). The medial arising fibers of the ILS curved upward and laterally. The ILS was located between the orbicularis oris muscle (OOr) and the LAO with fan shape. As the ILS coursed arching laterally, it became the superolateral margin of the OOr, enlarging the dimension of the superior peripheral part of the OOr. The arising fibers of the ILS arched and covered the prominent labial glands at the superior margin of the OOr. After the ILS coursed laterally along the anterior part of the upper mucolabial fold, the ILS was divided into the superficial or deep inserting fibers in most specimens. The superficial inserting fibers of the ILS blended with the medial fibers of the LAO to converge toward the modiolus. The deep inserting fibers of the ILS blended with several muscles in the modiolar area.

Conclusions. These specific results will be helpful for analyzing the movements of the mouth and performing various facial surgeries.

CLINICAL-ANATOMIC MAPPING OF THE TARSAL TUNNEL WITH REGARD TO BAXTER'S NEUROPATHY IN RECALCITRANT HEEL PAIN SYNDROME — PART I

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Key words: *baxter nerve, ultrasound, heel pain syndrome, tarsal tunnel*

Aim. To describe the topographic anatomy of the tibial nerve (TN) and its branches in relation to their osteofibrose chambers in the proximal and distal postero-medial tarsal tunnels, with ultrasonographic injection procedures proof of the Baxter nerve (BN).

Material and Methods. 41 alcohol-glycerin embalmed feet were dissected. We documented the pattern of the branches of the TN and describe all relevant osteofibrose structures. Measurements for the TN branches were related to the Dellon-McKinnon Malleolar-Calcaneal Axis (DML) for the proximal TT and the Heimkes Triangle for the distal TT. Additionally we performed an ultrasound guided injection procedure of the BN and provide an algorithm for clinical usage.

Results and Discussion. The division of the TN was 16.4 mm proximal to the DML. The BN branches

off 20 mm above the DML center or 30 mm distally to it. In most of the cases the medial calcaneal branch (MCB) originated from the TN proximal to the bifurcation. Possible entrapment spots for the medial and lateral plantar nerve (MPN, LPN), the BN and the MCB are found within a circle of 5 mm radius with a probability of 80, 83 and 84%, respectively. In 10 out of 10 feet the US guided injection was precisely allocated around the BN.

Conclusions. Our detailed mapping of the TN branches and their osteofibrous tubes at TT might be of importance for foot and ankle surgeons during minimally invasive procedures in HPS such as ultrasound-guided ankle and foot decompression surgery.

INFLUENCE OF LASER RADIATION AT THE REGENERATION OF SOFT TISSUES OF MAXILLOFACIAL REGION

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Key words: *laser, maxillofacial area, rehabilitation, dental diseases*

Background. Traumatism of surgical operations in dentistry dictates the need to search for minimally invasive methods of tissue alteration. The use of lasers can solve this problem, since laser radiation is characterized by a lower operational injury, selective action and activation of reparative processes in the wound.

Aim. Improving the efficiency of surgical treatment of patients with dental diseases using Nd:YAG laser.

Material and Methods. We used Nd:YAG laser of wave length 1064 nm. In the experiment, we done histological examination of biopsy of the rabbit oral mucosa in different stages of healing. All rabbits were divided into 4 groups, depending on the method of defect formation: cutting tool, laser radiation power of 1.6 W, 2.4 W and 3.2 W, respectively. In the clinic Nd:YAG laser was used for surgical treatment of 183 patients with different dental diseases.

Results and Discussion. On the results of the experimental and histological study, wound defect, caused by laser, compared to scalpel, much faster goes through all the stages of the wound healing process. The alterative processes and disorders of microcirculation, the intensity of inflammatory processes are less pronounced, reparation starts earlier and have more intensity: fibroblast proliferation, angiogenesis, collagen production, fibrillogenesis, maturation and fibrous cicatricial granulation tissue transformation, wound surface epithelialization. Analysis of clinical data showed that the using of Nd:YAG laser contributed to the unexpressed pain response, minor collateral edema in the postoperative period, reduction of healing terms.

Conclusions. The using of Nd:YAG laser enhances the effectiveness of surgical treatment of patients with dental diseases due to reducing of rehabilitation terms.

MACROSCOPIC AND HISTOLOGICAL CHANGES OF THE LIVER DURING HSV-1

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Key words: *liver, herpes simplex virus, morphological study*

Aim. Herpes simplex virus (HSV) infection is quite prevalent in general population. HSV-1 can be reactivated in nerve system, but the question of herpetic damage of the liver remains open. Aim — the morphological study of liver during HSV-1 infection.

Material and Methods. 30 BALB/c line mice weighing 18–20 g were infected by HSV-1 (strain VC, specifically adapted to studies on laboratory mice) in the amount of 4.0 lg LD_{50}. On day 5, 10 and 30 animals were removed from the experiment. The mice liver was collected on a histological study and weighed. Additionally, the visual assessment of the state of the liver: color, blood supply, consistency.

Results. The liver mass in animals with HSV-I was decrease at 20.2% for 10 days and 22.5% for 30 days ($p<0.05$). On day 5 and 10 after infection the histological structure of liver was not distorted, but hepatocytes had marked cytopathological signs (cells hypertrophy, swelling around the hypertrophied nuclei). The macrophage infiltration was observed in the lobular hemocapillaries. On day 30 the density and area of infiltration of mononuclear phagocytes and lymphocytes were significant increased. Thed hyperemia of hemocappilaries and central veins and local hemorrhages were observed. Cytopathology of hepatocytes were diffuse or focal diffuse. Moreover, the degree of damage was lower compared to the early period of the study.

Conclusions. HSV-1 causes dystrophic and lithic changes in hepatocytes, which affects the reduction