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COMBINED USE OF ERBIUM (ER: YAG) AND NEODYMIUM (ND: YAG) LASERS AT THE SURGICAL STAGE OF CHRONIC PERIODONTITIS TREATMENT

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Introduction: The need to improve surgical techniques encourages us to turn to modern technologies; namely: use of various types of lasers, allowing for creation of the best conditions for postoperative wound healing and improvement of conditions for bone regeneration.

The aim of the study is to increase effectiveness of complex treatment of patients with chronic generalized periodontitis by using lasers (Er: YAG (erbium) with wavelength of 2940 nm and Nd: YAG (neodymium) with wavelength of 1064 nm) at the surgical stage.

Materials and methods: 70 patients diagnosed with generalized periodontitis of moderate severity were examined and operated. All patients examined were divided into two groups. Group 1 included 35 patients, who at the surgical stage were subjected to operative interventions according to the modified Widman technique. Group 2 included 35 patients, who at the surgical stage were subjected to operative interventions according to the same technique, but with the use of lasers: a continuous paramarginal incision was performed under local anesthesia in the area of the operated tooth segment, the incision was performed by Er: YAG laser (2940nm, SSP, 2W). Then the mucoperiosteal flap was raised by the elevator for a better view of surface of the tooth root and alveolaris processus; the second incision was also performed right along the subgingival space, around each tooth, raising gums from hard tissues of the tooth to the very bottom of the pocket. Next, granulation and pathological epithelium of pockets was removed by Nd: YAG laser, (1,5W). At first, granulations were coagulated by the laser, and then they were carefully cleaned using abrasors, which significantly reduced duration of the surgery. Sharp bony prominences of the alveolaris processus were polished by the erbium laser, and tooth root and walls of the bone pocket were treated with this laser, were closed with automembrane. Sutures were applied. The periodontal index PI (A.L. Russel) was determined in all patients. The depth of periodontal pockets and the value of gingival recession were determined using the classification of gingival recessions according to Miller (1985). All clinical examination data was recorded prior to surgery, after surgery, within 6 months and within 1 year. X-ray examination was performed before treatment and 6 and 12 after treatment.

Results: There was no statistically significant difference between indicators of depth of periodontal pockets in patients from Group 2 prior to treatment ($6.6 \pm 0.18\text{mm}$) and these indicators in patients from Group 1 ($6.94 \pm 0.21\text{mm}$). 6 month after surgery, the result in Group 2 improved ($4.31 \pm 0.22\text{mm}$) and was significantly different from this parameter in patients from Group 1 ($5.37 \pm 0.16\text{mm}$). At one year, indicators in Group 2 ($3.86 \pm 0.2\text{mm}$) were also significantly better than in Group 1 ($5.6 \pm 0.21\text{mm}$). The value of gingival recession according to Miller (1985) prior to treatment in Group 1 was on average $2.2 \pm 0.07\text{mm}$. 6 months after operative intervention, recession significantly increased up to $3.2 \pm 0.07\text{mm}$, and at one year it remained almost without changes – $3.11 \pm 0.07\text{mm}$ ($p > 0.05$). Group 2 patients prior to treatment had recession value of $2.23 \pm 0.07\text{mm}$, 6 month



after surgical stage of treatment recession significantly increased up to 3.0 ± 0.02 mm, in one year indicators significantly improved and remained stable at 2.54 ± 0.09 mm. PI Index (A.L. Russel) in patients from Group 2 prior to treatment was 3.81 ± 0.19 , 6 month after surgical stage of treatment, during control examination, the index significantly decreased to 2.24 ± 0.18 ($p < 0.05$), and at one year remained almost unchanged (2.3 ± 0.19) ($p > 0.05$). In Group 1 patients prior to treatment this indicator was at 4.22 ± 0.06 , 6 month after treatment it also significantly decreased to 2.06 ± 0.17 and at one year it remained at the same level (1.98 ± 0.15) ($p > 0.05$).

Conclusions: The results of our own observations have shown that the developed method of surgical treatment of generalized periodontitis with the use of Er: YAG (erbium with wavelength of 2940 nm) and Nd: YAG (neodymium with wavelength of 1064 nm) was effective.

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SPARING TECHNIQUE OF SURGICAL TREATMENT OF PATIENTS WITH AMELOBLASTOMAS OF THE JAWS

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Introduction. The face is a complex of several anatomical structures, each of which performs one or more functions, is an essential element that characterizes a person as a complex anatomical organ. Odontogenic tumor of epithelial origin, such as ameloblastoma, remain common form of bone tumors of maxillofacial area, leading to aesthetic and functional disorders. According to the literature - odontogenic tumors, cysts and tumor-like neoplasms amount to 51% of all benign neoplasms of the jaws (Gutan A.E and authors, 1990, Volkov V.A, 1990, Latvians S.V, 1992, Malanchuk V.A. 2010). Thus the aggressive nature of the flow ameloblasts raises the question of the degree of radical surgery.

Aim. Determine the optimal, individualized approach to treatment selection for patients with ameloblastomas.

Individually justify the degree of radical surgery with maximum preservation modern criteria of function and aesthetics standards.

Materials and methods. 9 clinical cases have been analyzed with ameloblastomas. All patients were treated at the department of oral and maxillofacial surgery in 2012-2015. All patients were underwent clinical, laboratory and radiologic investigations, 3D CT. In 7 clinical cases determined the presence of foci of bone destruction separated by osseous partitions in the area of the alveolar process, in some cases, destruction of articular and coronal process, branch and angle of the mandible without breach of continuity of the posterior border of the mandible with deformity and penetration into the soft tissues were detected. In these cases we held conserving surgery: «Cystectomy according Grigorchuk technique», drug therapy, rehabilitation uneventful. We used chemical method, which consists in the treatment of postoperative cavity walls with a concentrated solution of phenol and its neutralization by solution of alcohol to cause aseptic necrosis of epithelial elements of capsule of ameloblastoma. By the developed and proposed this sparing technique in 77 % we able to avoid the most radical method of treatment of this pathology

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