

Algorithm For Selecting Minimally Invasive Methods Of Operaculoctomy For Pericoronitis

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Abstract: Pericoronitis is a type of inflammatory process of the oral cavity, the cause of which is an infection of the soft tissues near the crown of an incompletely erupted tooth, including the surrounding gum itself and the tooth rudiment [1, 3, 5]. According to statistics, in most cases pericoronitis is observed in the lower third molar (HTM); usually in teeth that erupt very slowly and gradually or are retentive. It is accepted that microbial invasion into the follicular region is the cause of the infectious process starting from the moment the dental follicle comes into contact with the oral cavity. The basis of the microbiome in pericoronitis consists of anaerobes. The accumulation of food residues near the lining around the tooth and damage to soft tissues by the antagonist tooth lead to an aggravation of the inflammatory process. Currently, there are limited conflicting data on the etiology and pathogenesis of pericoronitis. According to statistics, the average frequency of successful HTM eruption is slightly less than 5% among patients in the age range from 20 to 25 years. At the same time, about 95% of cases of HTM eruption are accompanied by pericoronitis [2, 4].

Keywords: Pericoronitis, residues, follicle, anaerobes, inflammatory, process, oral cavity, antagonist tooth, inflammatory process.

Introduction:

In order to select the subjects studied and identify the features of the clinical course of the disease, an examination was performed of patients who sought help at the emergency department of maxillofacial surgery at the Tashkent State Medical University Clinic in the period 2024-2025 due to difficult eruption of HTM complicated by pericoronitis.

The criteria for inclusion in the study were as follows:

- 1) the presence of pericoronitis associated with an intact partially erupted vertical or slightly angled HTM, the depth of which is type A and Class I according to Pell and Gregory;
- 2) over the age of 18.

The exclusion criteria were as follows:

- 1) the presence of indications for the removal of HTM complicated by pericoronitis: caries, pulpitis, periodontitis, periostitis;
- 2) mesoangular or horizontal position of the HTM, depth of location according to type B and C, Class II and

III according to Pell and Gregory;

- 3) the presence of purulent-inflammatory processes in the maxillofacial region;
- 4) patient's refusal to participate or failure to attend any of the stages of the study;
- 5) patients with a history of allergic reaction to medications used in the study (anesthesia);
- 6) taking medications that affect the tissue healing process (NSAIDs, steroids);
- 7) diseases of the oral cavity of autoimmune origin.

The general exclusion criteria included decompensated chronic or acute diseases, pregnancy, lactation, neoplasms, malignant processes, systemic connective tissue diseases, blood clotting disorders; systemic use of immunosuppressants, GCS, mental disorders, viral hepatitis, AIDS and tuberculosis.

60 patients (32 men and 28 women) aged 18 to 35 years (average age was 28.5 ± 3.2 years) selected for the study according to the above-mentioned inclusion and exclusion criteria, depending on the method of

operculectomy (excision of the "hood"), were divided into the following groups:

Group I (20 patients) – the traditional method is excision with scalpel No. 15. Next, the wound was instilled with an antiseptic drug solution (chlorhexidine, hydrogen peroxide, etc.), and an antiseptic gauze drainage tube was inserted.;

Group II (20 patients) – excision is performed by electrosurgery (electrosurgery) using an electrosurgical coagulator EVO3 (Heal Force, Shanghai, China) in the "scalpel" mode. After removing the "hood", coagulation of the wound edge was performed.;

Group III (20 patients) – excision is performed using a Mediola Compact MLD01 surgical laser (Mediola, Minsk, Belarus) (Fig. 1): device in the "ablation" mode, with parameters – energy 60 MJ, pulse duration 350 ns, frequency 40 Hz, 2.4 W power.

At the same time, in order to create conditions for optimal hygienic care in the field of operculectomy, a portion of the mucous membrane was excised with a semi-oval incision and the circular ligament of the tooth was dissected until the crown of the tooth was completely released. In the case of scarring on the mucous membrane of the "hood" (which often occurs when an area is injured by an antagonist tooth), the following parameters were set: power 3.2 W, energy 80 MJ, frequency 40 Hz, pulse duration 350 ns. The formed coagulation layer in the form of a white film ensures complete hemostasis.

The distribution (randomization) into groups was carried out randomly by random sampling, depending on the date of admission to the department.

Before performing a particular type of surgical intervention, each patient was explained its specifics and received informed consent in writing. All patients underwent antiseptic treatment before surgery – mouthwash with 0.05% chlorhexidine solution. Infiltration anesthesia of the soft tissues of the retromolar region was performed with a 4% solution of Articaine with an epinephrine hydrochloride content of 1:100000.

As part of the therapy of the postoperative period, rinsing with antiseptic solutions was recommended for the subjects. In group I, there was a need to take antihistamines, analgesics and antibacterial drugs. These drugs were not prescribed to patients of groups II and III.

The effectiveness of surgical treatment was assessed according to the following criteria:

1) the severity of postoperative pain according to the subjective pain sensations of patients with intensity according to the digital scale Verbal Descriptor Scale

(Gabric D., 2019): 0 – no pain; 2 – mild pain; 4 – moderate; 6 – severe; 8 – very severe; 10 – unbearable pain. The assessment was performed on the 1st, 3rd and 5th days after the intervention. The dosage of the analgesics taken was also taken into account.

2) the severity of collateral edema on the 1st, 3rd and 5th days after the intervention, which gave an idea of the body's response to damage (alteration). The scores were: 0 – no edema; 1 – mild; 2 – moderate; 3 – severe edema.

3) surgical wound healing: reduction of the size of the coagulation layer under the fibrinous plaque, formation of granulation tissue (color, bleeding, timing of appearance) and epithelization time.

Visually, signs of an inflammatory reaction, redness of the surrounding tissues, and the appearance of tissues after coagulation and laser exposure were noted. Additionally, swallowing, mouth opening, masticatory muscle tone, and regional lymph nodes were assessed on days 1, 3, and 5 after the intervention. Epithelialization and scarring were visually noted.

Statistical processing of the obtained data was carried out using nonparametric methods (Mann-Whitney criterion) and correlation analysis (Pearson criterion). Statistical analysis was performed using the OriginPro 8.6 program (OriginLab Corporation, USA).

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