PREVENTION OF POSTEXTRACTION DAMAGE OF THE INFERIOR ALVEOLAR NERVE

Annotation. Damage to the inferior alveolar nerve (IAN) during the removal of lower third molars is associated with a complex anatomical condition, when the root apex is located close to the nerve bundle or "hugs" the latter.

Purpose of the study: comparison of the results of coronectomy, complete two-stage removal of the third molar with preliminary orthoextrusion and complete removal of the lower third molar by the traditional method. To improve the effectiveness of surgical treatment of patients with retention and dystopia of mandibular third molars and minimise postoperative damage to the inferior alveolar nerve.

Materials and methods
The randomised controlled study was conducted from September 2021 to September 2023. Forty-five patients were included in the study and divided into three groups.
Group I (test group) consisted of 15 patients who underwent coronectomy.
Group II (test group) consisted of 15 patients who underwent complete tooth extraction with orthoextrusion.
Group III (control group) consisted of patients who underwent complete extraction of the third lower molar.

A total number of 45 patients were included in the study, with 15 patients in each group. The mean age was 24.9 ± 3.933 years. Among the study participants, 48.8% (22) were males and 51.11% (23) were females.

Results and Discussion.
During preparation for surgery, a clinical and radiological examination was performed, which revealed that the roots of the 3.8 tooth were located close to the inferior alveolar nerve. The mucous membrane in the retromolar area on the right side was pale pink in colour, painless. There were no visible external changes in the dentoalveolar system. The electroexcitability study revealed no changes in the pulp of the 3.7 tooth (EOD 2 mA). The patient was offered three methods of surgical treatment: 1) One-stage complete extraction of the 4.8 tooth with a small risk of post-extraction damage of the NAS. 2) Two-stage complete extraction of the 4.8 tooth with orthoextrusion with a lower risk of post-extraction damage to the NAS and two relatively non-traumatic operations, which facilitates rehabilitation and minimises the risks of NAS damage. 3) Minimally invasive technique - coronectomy. The decision was made to perform orthoextrusion of the lower third molar on the left with subsequent extraction. This method was chosen in order to "pull" the 3.8 tooth, thereby invasively pulling the latter away from the NAS and eliminating the risk of post-extraction damage to the nerve and other anatomical structures and achieving an optimal result.
Conclusions.

Based on the analysis, coronectomy and two-stage extraction with orthoextrusion of intact third lower molars with roots close to the mandibular canal allows avoiding not only intraoperative but also postoperative complications. In our opinion, the preserved apical part of the root of an intact tooth is less threatening than damage to the inferior alveolar nerve. Thus our proposed methods have a reasonable justification and can serve as alternative methods to avoid damage to the inferior alveolar nerve during tooth extraction and associated complications.

References: