SHORT COMMUNICATION

CONTENTS

Comprehensive management of pericoronitis in lower third molars: extraction, operculectomy, and coronectomy approaches

Agnieszka Rolek[1], Piotr Pławecki[2]

[1]PRIVATE DENTAL PRACTICE – AGNIESZKA ROLEK, WROCLAW, POLAND

[2]DEPARTMENT OF CRANIO-MAXILLO-FACIAL SURGERY, PROVINCIAL SPECIALIST HOSPITAL No. 5 IN SOSNOWIEC, SOSNOWIEC, POLAND

ABSTRACT

Pericoronitis is a common dental condition involving the inflammation of soft tissues around a partially erupted wisdom tooth, typically the lower third molars. It is most frequently diagnosed in young adults aged 20-29, with a higher prevalence in women. The condition often results from the accumulation of bacteria and food debris under the operculum, leading to infection and inflammation. Common symptoms include localized pain, gum swelling, trismus, and sometimes pus discharge. This study aims to discuss the types of clinical management of pericoronitis of the lower third molar as described in the literatureTooth extraction eliminates the source of inflammation, providing long-term relief but carries a higher risk of inferior alveolar nerve damage and greater postoperative discomfort compared to other methods.This minimally invasive procedure removes the gingival cap to prevent food and bacteria accumulation. It is suitable for patients with good oral hygiene and proper tooth angulation. Electrosurgery and laser methods reduce bleeding and swelling but have contraindications. Coronectomy, an alternative to extraction, avoids nerve damage by leaving the roots in place. Suitable for non-carious, pathology-free teeth, it shows lower risk of sensory disturbances and postoperative complications, though root migration may occur. Pericoronitis requires personalized treatment based on patient condition and tooth positioning. Thorough diagnostics and tailored approaches are crucial for effective management and improved outcomes.

KEY WORDS: coronectomy, operculectomy, pericoronitis

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INTRODUCTION

Pericoronitis is a common dental condition associated with inflammation of the soft tissues surrounding a partially erupted wisdom tooth, typically the lower third molars. The condition is most commonly diagnosed in young adults aged 20-29, more frequently in women than in men [1]. The condition often arises due to the accumulation of bacteria and food debris under the operculum. This creates an ideal environment for bacterial growth, leading to infection and inflammation. Common symptoms include pain at the site of the affected tooth, swelling of the gums, trismus, and sometimes pus discharge. Diagnosing pericoronitis involves a combination of clinical examination, analyzing patient history, and, when necessary, radiographic imaging such as OPG or CBCT scans which are used to evaluate the position of the partially erupted tooth and any underlying bone involvement. The condition must be treated, and several options have been found, such as tooth extraction, operculectomy, and coronectomy.

AIM

The aim of the study was to discuss the types of clinical management of pericoronitis of the lower third molar described in the literature.

REVIEW AND DISCUSSION

EXTRACTION OF THE THIRD MOLAR

Inflammation occurring in the area of a partially erupted third molar usually causes severe pain for the patient, which, even after periods of remission, repeatedly intensifies. Extracting the causative tooth certainly eliminates the cause, which in the long term leads to permanent relief of symptoms. In cases of teeth affected by caries or with periapical changes, where other methods such as coronectomy are not applicable [2], extraction of the third molar that does not predict proper alignment in the dental arch and poses a risk of recurrent inflammation under the gingival cap often becomes the method of choice. However, before deciding on extraction, the

risk of complications such as damage to the inferior alveolar nerve, which is greater in the case of extraction than with the alternative method - coronectomy [3,4], must always be considered. Studies also indicate that postoperative discomfort after extraction of the third molar was greater than in the case of coronectomy [5].

OPERCULECTOMY

A minimally invasive method of treating pericoronitis is the removal of the gingival cap using a scalpel, laser, or electrocautery, with the aim of leaving space behind the third molar that will not predispose to food residue accumulation and will be easy to clean [1]. Patients are qualified for the gingival cap removal procedure based on radiological analysis and clinical examination. Patients with good oral hygiene, the presence of a neighboring tooth, sufficient space in the arch for the erupting tooth, and vertical angulation may be qualified for this method [1,6]. Electrosurgery methods have many advantages: they eliminate the risk of bleeding, cause less swelling, and disinfect the surgical field [1] but are contraindicated in patients with a pacemaker, after radiotherapy, or those with diabetes [6,7]. A diode laser, Er:YAG laser, CO2 laser, and Nd:YAG laser can also be used for operculectomy. Laser methods reduce the risk of bacteremia, achieve hemostasis, reduce postoperative discomfort, and shorten healing time. Researchers observed good results one month after healing in patients who underwent gingival cap removal. There were no signs of inflammatory infiltration, and the color and structure of the gum were physiological.

CORONECTOMY

First introduced in 1984 by Ecuyer and Debien [2], coronectomy is considered an alternative to the extraction of the third molar located near the inferior alveolar nerve canal to avoid damage to the neurovascular bundle. The procedure is performed on non-carious teeth, without periapical pathology, in immunocompetent patients, under local anesthesia, and involves gently cutting and then separating the tooth crown from its roots. All granulation tissues are removed with a curette, the bone edge is smoothed, the bone cavity and remaining root are irrigated with saline, doxycycline (doxycycline hyclate, 50 mg capsules; Watson Laboratories, Corona, CA) is applied, and sutures are placed [2]. After the procedure, the patient takes antibiotics for 7 days, usually penicillin VK, 500 mg orally 4 times a day or clindamycin 300 mg orally 3 times a day if allergic to penicillin, and is required to maintain special oral hygiene including tooth brushing and chlorhexidine 0.12% rinses 3 times a day [2]. This technique is dedicated to vertically, mesioangular, or distoangular impacted teeth, where the risk of nerve damage using a drill is lower than with horizontally impacted teeth [2, 3]. Studies indicate that teeth subjected to coronectomy should not undergo endodontic treatment, as this carries a much higher risk of infection of the remaining fragment [8]. In patients with a high risk of damage to the inferior alveolar nerve, there was no or incidental cases of sensory disturbances after coronectomy [3, 4]. In the case of extraction of the lower third molar with significant proximity to the inferior alveolar nerve canal, the percentage of sensory disturbances was significantly higher [4]. After coronectomy of lower third molars, researchers observed root migration towards the crown, which was fastest in the first three postoperative months and ceased between the 12th and 24th months after the procedure [2, 4].

CONCLUSIONS

Pericoronitis is a common issue among young people, often causing severe pain and reducing quality of life. Depending on individual patient conditions, general burdens, the amount of space in the dental arch, and the position of the tooth relative to anatomical structures, the method of treating pericoronitis is chosen. Both the extraction of the causative tooth and operculectomy or coronectomy yield satisfactory results and significant improvement in general and local conditions. A key aspect is thorough diagnostics and selection of the method tailored to the individual needs of the patient.

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ORCID AND CONTRIBUTIONSHIP

Agnieszka Rolek: 0009-0007-2880-2055 A B D E F
Piotr Pławecki: 0000-0003-2550-8452 A B D E F

CONFLICT OF INTEREST

The Authors declare no conflict of interest

CORRESPONDING AUTHOR

Agnieszka Rolek
Private Dental Practice - Agnieszka Rolek Wroclaw, Poland
e-mail: aga.rolek@gmail.com

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