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OPERCULECTOMY AS A CONSERVATIVE APPROACH TO THIRD MOLAR EXTRACTION

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ABSTRACT:

Impaction of third molars has been assumed to be a sequel to evolutionary changes in humans over the years. However, depending on the circumstances, these third molars may erupt in proper alignment and remain functional, otherwise they remain impacted at different levels and angulations in the jaws, especially so in mandible because of its density and topography. Partially impacted teeth often present with pericoronitis leading to dilemma in diagnosis and treatment options, as to whether to extract or to carry out operculectomy (and retain the tooth). However, operculectomy would be preferred over extraction owing to its conservative approach.

Key Words: Impacted molars, Pericoronitis, Operculectomy.

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INTRODUCTION

Pericoronitis is defined as inflammation of the oral soft tissues surrounding the crown of an erupted or partially erupted tooth. Pericoronitis of mandibular permanent third molars is typical.¹⁻³ The major factor responsible for involvement of the mandibular third molar is the space between the erupting tooth and the overlying gingival flap (operculum), which is an ideal area for the accumulation of food debris and bacterial growth. Even in the patients with no clinical signs or symptoms, the gingival flap is often chronically inflamed and infected and has varying degrees of ulceration along its inner surface⁴. Pericoronitis manifests itself in both chronic and acute state, the former often being characterized with periods of quiescence, which may or may not include episodic acute attacks⁵. Acute inflammatory involvement is a constant possibility and may be exacerbated by trauma, occlusion, or a foreign body trapped underneath the tissue flap (e.g. popcorn husk, nut fragment)⁴. Pericoronitis may occur bilaterally, although such a presentation is uncommon⁵.

HISTORY OF PERICORONITIS:

1. Gunnell termed it "painful affection" in 1844.
2. Painful affection changed to folliculitis as the erupted tooth breaches the follicle by the end of 19th century.
3. Term "pericoronitis" in 20th century.

SYNONYMS OF PERICORONITIS

1. Acute pericoronal infection.
2. Operculitis.
3. Folliculitis.

CLASSIFICATION OF PERICORONITIS:

Pericoronitis is clinically classified into acute pericoronitis and chronic pericoronitis.

Acute pericoronitis is identified by varying degrees of inflammatory involvement of the pericoronal flap and adjacent structures as well as systemic complications. The inflammatory fluid and cellular exudates increase the bulk of the flap, which then may interfere with the complete closure of the jaws, and can be traumatized by contact with the opposing jaw, aggravating the inflammatory involvement. Chronic pericoronitis is characterized by dull pain in pericoronal region, recurring inflammation, halitosis, or bad taste.

Clinical Picture of Pericoronitis

The common symptoms and signs are pain, bad taste, inflammation and pus expressible from beneath the pericoronal tissues, and aggravation by trauma from an opposing tooth. Unless the cause is removed, pericoronitis may present as a recurrent condition requiring multiple episodes of treatment.

Complications of Pericoronitis.⁴

1. The involvement may be localized in the form of pericoronal abscess.
2. It may spread posteriorly into the oropharyngeal area and medially to the base of the tongue, making it difficult for the patient to swallow.
3. Depending on the severity and extent of the infection, there is involvement of the submaxillary, posterior cervical, deep cervical and retropharyngeal lymphnodes.
4. Peritonsillar abscess formation, cellulitis, and Ludwig's angina are infrequent but potential sequelae of acute pericoronitis.

Various treatment modalities in the management of pericoronitis.⁷

The treatment of pericoronitis depends on the severity of the inflammation, the systemic complications, and the advisability of retaining the involved tooth. Persistent symptom-free pericoronal flaps should be removed as a preventive measure against subsequent acute involvement. The treatment of acute pericoronitis consists of:

1. Gently flushing the area with warm water to remove debris and exudates.
2. Swabbing with antiseptic after elevating the flap gently from the tooth with a scaler. The underlying debris is removed and the area is flushed with warm water. The occlusion is evaluated to determine if an opposing tooth is occluding with the pericoronal flap. Removal of soft tissue or occlusal adjustment may be necessary.
3. Antibiotics can be prescribed in severe cases and in patients who may have clinical evidence of diffuse microbial infiltration of the tissue. If the gingival flap is swollen and fluctuant, an anteroposterior incision is made to establish drainage.
4. After the acute symptoms subside, a determination is made about whether to retain or extract the tooth.

Operculectomy

This is a surgical procedure where the affected soft tissue covering and surrounding the tooth is removed. This leaves an area that is easy to keep clean, preventing plaque buildup and subsequent inflammation. Operculectomy accounted for 65.4% and was carried out on more females than males⁷. The prevalence of non-third molar related pericoronitis is the low and the most prevalent type is chronic pericoronitis affecting the lower right second permanent molar. The operculectomy procedure can be done using the scalpel or electrocautery or lasers.

CASE REPORT:

We present here two case reports describing the operculectomy procedure.

Case 1:

A 30 year old female patient reported to the Department of Periodontology with a chief complaint of pain in her lower right back tooth region since 3 days. She reported a dull aching pain in her lower right back tooth region and food lodgement. On examination, the patient was in good health and had no relevant medical history.

On clinical examination, the operculum was covering the partially erupted lower right third molar. After formulating the treatment plan and following oral prophylaxis, an inferior alveolar and lingual nerve block using 2% lignocaine with 1:80000 adrenaline was administered to anesthetize the area. A triangular incision was made posterior to the distal molar area using a No. 15 blade and a wedge shaped tissue was excised from the area. The remaining tissue was curetted and the area was irrigated with Povidone-iodine solution. Postoperative instruction was given to the patient along with antibiotics and analgesics. The patient was highly motivated in oral hygiene practice and to keep the area clean. The patient had an uneventful healing.

A 40 year old female patient reported to the Department of Periodontology with a chief complaint of pain in her lower right back tooth region since 1 week. She reported a dull aching pain in her lower right back tooth region radiating to her ears. She also reported of food lodgement and foul smell in her mouth. On examination, the patient was in good health and had no relevant medical history.

On clinical examination, the operculum was covering the distal aspect of lower right third molar. The operculum was mildly inflamed. After formulating the treatment plan and following oral prophylaxis, an inferior alveolar and lingual

nerve block using 2% lignocaine with 1:80000 adrenaline was administered to anesthetize the area. A triangular incision was made posterior to the distal molar area using a No. 15 blade and a wedge shaped tissue was excised from the area. The remaining tissue was curetted and the area was irrigated with Povidone-iodine solution. Postoperative instruction was given to the patient along with antibiotics and analgesics. The patient was highly motivated in oral hygiene practice and to keep the area clean. The patient had an uneventful healing.

DISCUSSION

There are no absolute indications and contra-indications for the removal of asymptomatic third molars as no long-term studies exist to validate either early removal or deliberate retention of these teeth. The National Institute of Clinical Excellence in the UK has adopted the following guidelines for clinical practice in the National Health Service⁸.

1. The practice of prophylactic removal of pathology-free impacted third molars should be discontinued in the NHS.
2. The standard routine programme of dental care by dental practitioners and/or paraprofessional staff need be no different, in general, for pathology-free impacted third molars (those requiring no additional investigations or procedures).
3. Surgical removal of impacted third molars should be limited to patients with evidence of pathology. Such pathology includes unrestorable caries, non-treatable pulpal and/or periapical pathology, cellulitis, abscess and osteomyelitis, internal/external resorption of the tooth or adjacent teeth, fracture of tooth, disease of follicle including cyst/tumour, tooth/teeth impeding surgery or reconstructive jaw surgery, and when a tooth is involved in or within the field of tumour resection.
4. Specific attention is drawn to plaque formation and pericoronitis. Plaque formation is a risk factor but is not in itself an indication for surgery. The degree to which the severity or recurrence rate of pericoronitis should influence the decision for surgical removal of a third molar remains unclear. The evidence suggests that a first episode of pericoronitis, unless particularly severe, should not be considered an indication for surgery. Second or subsequent episodes should be considered the appropriate indication for surgery.

CONCLUSION

Operculectomy is a conservative approach to extraction when there are no recurrent infections. It is less invasive compared to extraction and helps in preserving the tooth and has good patient compliance when compared to extraction.



Case 1 (Before operculectomy)



Case 1 (After operculectomy)



Case 2 (Before operculectomy)



Case 2 (After operculectomy)

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