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Case Report

Acute Pericoronitis of Lower Third Molar: A Case Report

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KEYWORDS

pericoronitis;
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operculum

ABSTRACT

Introduction: Pericoronitis is defined as an inflammation of the soft tissue around the crown of impacted tooth or partially erupted tooth. The main cause of pericoronitis is the limited space around third mandibular tooth and the overlying gingival flap. **Case report:** A 23-year-old patient came to RSGM UMY of operator's motivation to treat her lower left tooth. Initially patient felt her gums were swollen and painful in the past 3-year. Objective examination showed an operculum covering distolingual and distobuccal side of 38 teeth with operculum probing depth 3,5 mm, Bleeding on Probing (-), palpation (-), Oral health Index 0.83 and Plaque index 11.3%. Treatment planning for this patient was initial therapy on the first visit. The second visit was operculectomy. The third visit was weekly control. Results: Two weeks after operculectomy procedure showed a post operculectomy area with a wound that had entered the healing phase (remodelling) with operculum probing depth 3,5 mm, Bleeding on Probing (-), palpation (-), Oral health Index 0.83 and Plaque index 10.3%. **Conclusion:** Surgical approach such as operculectomy is done and known as the golden standard to treat pericoronitis. Operculectomy is known as the most favourable treatment as it is simple, easy to perform, less time consuming, and believed as the most effective method for treating pericoronitis. The goal of operculectomy is to enforce a minimal or no post-operative complications and proper wound healing.

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INTRODUCTION

The eruption of lower third molar occurs during the age 17 to 23 years old. Ideally, the eruption of third molars erupts normally and aligned like any other teeth. However, third molars often erupts abnormally as they stray away from its normal course. The abnormal eruption could lead to few dental problems such as higher risk of caries, pericoronitis, crowding, temporomandibular joint disorders, orofacial pain, etc.^{1,2}

Pericoronitis is defined as an inflammation of the soft tissue around the crown of impacted tooth or partially erupted tooth.³ The main cause of pericoronitis is the limited space around third mandibular tooth and the overlying gingival flap.⁴ The overlying flap is called an operculum. The operculum surrounding the teeth encourages plaque retention from the accumulation of food debris and probably trauma from chewing caused by the antagonist tooth. Pericoronitis usually and mostly affects the lower third molar or wisdom tooth where the gingival tissue partially covers impacted tooth.⁵ Acute pericoronitis symptoms are marked by rapid onset and rapid duration. Patient usually feel an instant pain and short action, while the sign of acute pericoronitis marked with redness, swollen in affected tissue, the presence of pus, throbbing pain spreading to ears, throats, base of the mouth, and temporomandibular joints.⁶

Operculectomy is a procedure to cut or remove operculum over a partially erupted or impacted tooth. This procedure will create a clean overlying area on tooth so that it will be easy to clean and to prevent from plaque build-up.⁷ The goal of this procedure is to enforced a minimal or no post-operative complications along with proper wound healing.⁸ This case report explains the management of chronic pericoronitis in lower third mandibular.

CASE REPORT

Subjective examination showed a 23-year-old patient who came to RSGM UMY out of operator's motivation to treat her lower left tooth. Initially, patient felt her gums were swollen and painful in the past 3 year. The patient mentioned that if she eats, food scraps often enter and cause dirt. The patient said that currently there are no complaints. The patient mentioned never had a history of visiting a dentist regarding the complaint. The patient did not take medication to relieve pain and swelling. The patient brushed her teeth twice a day by brushing it in up and down motion for about three minutes when she showered in the morning and at night before going to bed. The patient chewed on one side, namely the left side. The patient had no history of hospitalization, no history of high blood pressure, and no history of food and

medication allergy. The patient did not smoke and does not consume alcohol. Patient consumed coffee at least twice a week. Patient often consumed vegetables and fruit. Objective examination showed an operculum covering distolingual and distobuccal side of 38 teeth with operculum probing depth 3.5 mm, bleeding on Probing (-), palpation (-), Oral health Index 0.83 and Plaque index 11.3% (Fig. 1). Thus, the diagnose for this patient is Chronic Pericoronitis. Treatment planning for this patient was an initial therapy on the first visit. The second visit was operculectomy. The third visit was weekly control.

Radiographic examination showed 38 tooth erupts vertically to the axis of second molar, with enough mesially and distally space to erupt, and the highest peak of third molar parallel to the occlusal line (Fig. 2).

First visit was initial therapy done on September 21st, 2022. In the first visit, initial therapy was carried out, namely scaling and root planning using a USS scaler to remove debris, calculus on the supragingival and subgingival (Fig 3a and 3b). Followed by polishing using a brush and low speed handpiece. Applying povidone iodine to the entire gingival surface that has been scaled. The next following week, the patient was instructed to be controlled to evaluate the results of the treatment.

Second visit was on December 12th, 2022. Subjective examination patient came to continue treatment after the initial therapy that was done two weeks ago. At first, the patient felt her gums were swollen and painful in the past 3 years. The patient mentions that if the patient eats, food scraps often enter and cause dirt. The patient said that there were no complaints post initial therapy. Objective examination shows an operculum covering distolingual and distobuccal side of 38 teeth with operculum probing depth 3,5 mm, Bleeding on Probing (-), palpation (-), Oral health Index 0,83 and Plaque index 10,3%. Before doing the operculectomy tools and materials were prepared, the patient was asked to sit comfortably in the dental chair, rinsed her mouth using provide iodine and water solution, and asked to fill out the consent form. Aseptic procedure was done using a cotton ball and povidone iodine then anaesthesia with benzocaine smeared all over the overlying operculum, wait 3-5 minutes. Block anaesthesia was done using pehacaine in fisher's block technique was performed. Buccal infiltration of 38 region were also added to achieve an adequate anaesthesia. Bleeding points were made using pocket markers around the distolingual and distobuccal of 38 regions. Excision was performed using blade No. 15 and scalpel with modified pen's grasp technique and 2 fingers rests on the adjacent teeth. Excision started from 1 mm below the bleeding point in coronal direction at 45-degree angle to the gingiva. The excision moved

sequentially from the distolingual side to distobuccal. The operculum was taken out using tweezers (Fig 4). It was important to make keep a clean and interrupted excision. Bleeding would instantly occur and made sure to have bunch of cotton ball prepared beforehand and performed bleeding dep in the surgical area to control the bleeding (fig. 5 and 6). Scaling and root planning was done to eliminate plaque in the 38 regions. Curettage was also performed to eliminate fibrotic tissue. Irrigation using povidone iodine mixed with saline was followed. Patient were asked to bite on a cotton ball for 30 minutes and were prescribed amoxicillin antibiotic for 5 days, mefenamic acid for 5 days, and chlorhexidine gargle used twice a day. Patient were instructed to maintain good oral hygiene by brushing teeth twice a day, to eat using untreated side and to clean the surgical area daily. Patient were sent home and were recalled for a follow-up after 7 days post-operculectomy to monitor the healing process.

Third visit was done on December 16th, 2022. Based on the subjective examination the patient came to the RSGM UMY to carry out postoperative after operculectomy procedure done 2 weeks ago. At first, the patient felt her gums were swollen and painful in the past 3 years ago. The patient mentioned that if the patient eats, food scraps often enter and cause dirt. The patient said that there were no complaints post operculectomy. Objective examination shows a post operculectomy area with a wound that has entered the healing phase (remodelling) (fig.7) with operculum probing depth 3,5 mm, Bleeding on Probing (-), palpation (-), Oral health Index 0,83 and Plaque index 10,3%. Debridement was carried out by irrigation using povidone iodine and saline solution. Patient was then sent home.

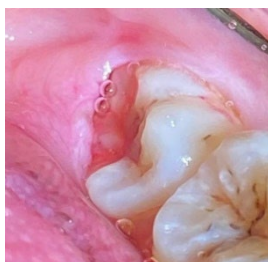


Figure 1. Clinical appearance of 38 tooth

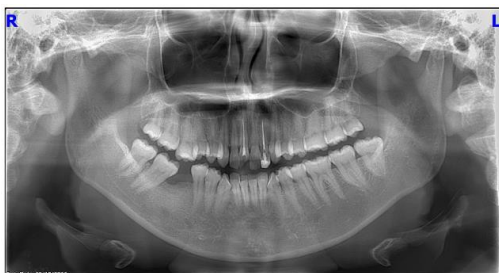


Figure 2. Panoramic Photo

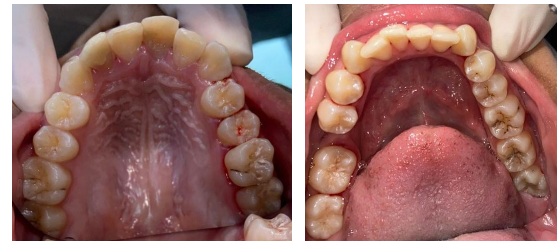


Figure 3. (a) clinical appearance of upper jaw after scaling and root planning, (b) clinical appearance of lower jaw after scaling and root planning



Figure 4. Operculum of 38 regions

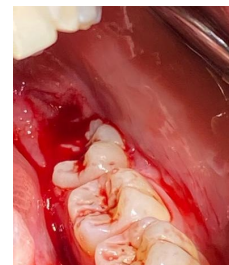


Figure 5. Bleeding after excision



Figure 6. Bleeding dep using cotton ball



Figure 7. Clinical appearance after 2 weeks postoperative

DISCUSSION

Pericoronitis is a condition of inflammation on the surrounding tissue of a partially erupted or impacted tooth that often occur in third molar.⁹ The symptoms are ranging from moderate to severe pain, fever, dysphagia, oedema, inability to open mouth widely, and lymph nodes enlargement. The majority of pericoronitis was found more in vertically positioned third molar and the risk of its occurrence are higher as it is greater in vertical orientation and height of eruption.⁵ Pericoronitis can be treated with both surgically and non-surgically measure. Though non-surgical measure can be done by prescribing analgesics to relieve pain, there are still possible risks of recurrence in the future.¹⁰

Operculectomy is known to be the removal of the overlying gum in third molars. It is one of the surgical measures to treat pericoronitis and preventing it from reoccurring in the future. Operculectomy was chosen as the treatment of pericoronitis as it is the conventional, easy to perform, less time consuming, inexpensive, and believed as the effective method.¹¹ Operculectomy had a favourable outcome for its faster wound healing and patient shows no discomfort judging by the postoperative examination.⁴ The goal of this procedure is to enforced a minimal or no post-operative complications, proper wound healing. The usage of scalpel has been considered as the gold standard of operculectomy treatment.⁸ Therefore, the usage of surgical scalpel for operculectomy was chosen for this treatment.

Good oral hygiene has a direct relationship with the success rate of periodontal treatment. The position of third mandibular that are too hard to clean using toothbrush can increase the possibility of food impaction under the operculum.¹² In order to maintain good oral hygiene, the elimination of dental plaque on the gums, teeth, and gingival tissue needs to be done.¹³ The accumulation of plaque and calculus can lead to or will exacerbate the inflammation. It is commonly prompted by improper technique of toothbrushing, incapability to perform interdental cleaning using dental floss, and irregular visits to dentist.^{14,15} Therefore, it is important to maintain the plaque index instruction post-op was to brush teeth twice a day. This was meant to prevent plaque and calculus build-up post-treatment.

CONCLUSION

Pericoronitis is an inflammation of gum that caused by impacted or partially erupted tooth. Surgical approach such as operculectomy was done and known as the golden standard to treat pericoronitis. Operculectomy is known as the favourable treatment as it is simple, easy to perform, less time consuming, and believed as the

effective method for treating pericoronitis. The goal of operculectomy is to enforced a minimal or no post-operative complications and proper wound healing.

DECLARATION OF PATIENT CONSENT

The authors certify that they have obtained all appropriate patient consent forms

CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest.

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