Pericoronitis of lower third molars teeth: Female: a case report

YASER AHMED(PhD)[(1)],SAMAR ALAQILI(MDS)[(1)]
[1]Department of Pathology. Faculty of Medicine and Health Sciences, Amran University, Amran, Yemen
[1]Department of Periodontology and Oral Medicine, Faculty of Dentistry, Yemen & Gulf University for Science & Tech, Sana'a, Yemen

Abstract
An inflammation of the soft tissue surrounding of the partial eruption impacted mandibular third molars. The clinical appearance are edema, redness, pain in the left lower thirds and bad oral hygiene with halitosis. It's a regular round in shape, its well-defined margins, measuring 2.5mm It was covered with thin mucosal tissue. The Pericoronitis occurrence in the female more than male in Yemen.
Case situation: Partial impacted teeth and inflammation of the surrounding soft tissue in the mouth of a 23 years. Yemeni females: In the left posterior Mandibular third molar (Wisdoms)
Conclusion: The Pericoronitis occurrence in the female more than male in Yemen because the jaw of the female is a smaller therefore haven't space for eruption of the third molar.
Key word: Patient, partial impacted third molar teeth, pericoronitis, operculectomy and Surgical equipment.

Introduction:

Pericoronitis also known as operculitis, is defined as an inflammation of the soft tissue surrounding the crown of an impacted or semi-impacted tooth [(1)]. The soft tissue covering a partially erupted tooth is known as an operculum in clinical terms.

The condition is most commonly seen in late adolescence or early adulthood life and the development depended on a variety of factors. The oral microflora may develop a pathologic potential under low immune resistance (bad oral hygiene, stress, viral infection and used drugs) and assist to the presentation of symptoms [(3)]. Furthermore, a developed operculum surrounding the teeth encourages bacterial plaque retention at area with accumulation of the food debris and the chewing trauma caused by the antagonist, all the above are considered to be aggravating factors of pericoronitis. Various studies have been analyzing the special types of microbes mainly causing the condition and have concluded to mixture of bacterial species present in the mouth, such as Streptococci and particularly various anaerobic species. [(11)(13)] An interesting result is considered to prove that necrotic ulcerative gingivitis and pericoronitis share similar responsible microbe strains [(4)].

The Symptoms may include pain, swelling and tenderness along with difficulty in mouth opening and discomfort in swallowing, Lymphoadenopathy, fever, malaise, unpleasant breath/taste accompanied by purulent exudates of the operculum revealed upon palpation, truisms and finally lead to cellulitis [(5)]. The categories are Three categories clinically and diagnostically recognized, namely acute, sub-acute and chronic pericoronitis, each one forming a different symptomatologic profile of the patient. Acute pericoronitis is characterized by limited mouth opening and more severe symptomatology, sub-acute pericoronitis follows a similar pattern in a lower intensity and without any report of mouth opening discomfort, and chronic pericoronitis refers to patients describing a short-lasting low-grade pain without significant symptomatology [(6,7)].

The Bilateral pericoronitis is rare and strongly suggests underlying infectious mononucleosis, The condition was rarely seen before 20 or after 40. There was also a significant correlation between oral hygiene and the severity of the condition. The acute form tended to appear in cases of moderate or poor oral hygiene, while the chronic type was associated with good or moderate hygiene. There was no significant difference between the sexes.

The Case Report:

A23years female, The chief complaint of pain extending from the angle of mandible to retromolar region since 6 month.

The clinical extraoral examination: A swelling on the angle of the mandible on the left side of the face.
The clinical intraoral examination: The oral hygiene of the patient's is a poor with halitosis edema, redness, and pain in the left lower third molar, A regular round shape Swelling (inflammation of the area) at the third molar region, its well defined margins measuring 2.5mm.(Fig 1)

Systemic manifestation : fever, malaise and difficult eating

She is chewing qat and smoking.

Figure 1 :. Clinical picture and cartoon of infection in the soft tissues overlying a partially erupted lower,.

Material and Method :

Material			
1	Mouth mirror	11	Cotton and gauze
2	Cheek retractor	12	Normal saline solution (NSS)
3	Hemostat	13	Local anesthesia
4	Disposable syringe	14	Head cap
5	Scalped (Number15)	15	masks
6	Scalped holder	16	Gloves
7	Tissue forceps.	17	suture (Silk size 0'3)
8	Kidney dish	18	panorama x-ray (Fig 2)
9	Specimen cup	19	
10	Section up	20	

Fig 2 : Partial impacted left lower third molar

Method :

*** Extraction surgery (Surgical removal of overlying flap)** The surgical removal of overlying flap is called as operculectomy.

First: Preparing the patient before extraction by scaling and make good oral hygiene .

Second: The operation

- Use local anesthesia. Mandibular nerve block (infiltration using 1 : 200000) lignocaine with adrenaline.

- Incision flap by blade number15 reflection flap by periostial elevator Cutting the crown by hand pies

- Removing of root by cross bar and smoothing of bone by bone file then using normal saline and suturing by non-absorbed silk size 0'3

- During operation use the Section for Dry the surgical area.

- Recall after 7 days.

Third: Post operation instruction :

- Take medication (antibiotic, analgesic .elc) .

- Gargle chlorhexidine twice a day for 7 days.

- Avoid touching the affected .

- Avoid stressful activates .

- Soft diet for 7 days .

Fourth : Histopathology

There is a presence of hyperplastic epithelial lining of pericoronal flap with intercellular edema and leukocytic infiltration along with increased vascularity underneath epithelium. There is also presence of polymorphonuclear leukocytes within connective tissue of inflamed pericoronal flap.

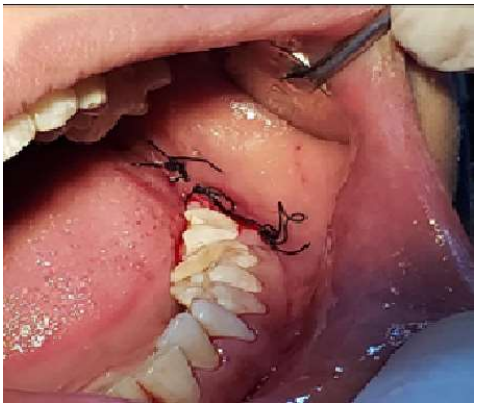

Fig 3: After operation

Discussion:

- In 2007 Friedman J.W. they study the Clinical trials have indicated that pericoronitis is one of the most significant reasons underlying the extraction of the third molars of the mandible [(1)].

- In 2007, Ventä I., Meurman J.H et al. confirmed that stress as well as upper respiratory tract infection are predisposing factors of pericoronitis; indeed, stress was confirmed at a rate of 22% in a sample of 2151 patients[(5)].

- in Khaleeq et al. a sample of 1763 patients, states that the acute pericoronitis was the main reason behind 9.2% of teeth extractions, while the chronic type was the main reason behind 26.3% of the extractions[(10)]. - in 2019 Isola G., Matarese et al the prevalence of pericoronitis was confirmed at a rate of 4.92% of the cases, whereas the chronic type dominated at a rate of 83.33% of the cases[(11)].

- in . Petersen P.E et al As far as age is concerned, in the present research the majority of the participants belonged to the age group of 21-25 years old, which is a result confirmed by most previous clinical trials (11-13,5), although some of them estimated a slightly younger age range (19 to 24 years old) as the mean age of the disease [9].

- in 2011. Jain N., The radiographic characteristics of wisdom teeth are indicated to be crucial aspects for the development of pericoronitis. Comparing to previous studies, Halverson-Anderson et al. [12] stated that teeth at highest risk of pericoronitis are the vertical third molars in contact with the second molar (II CLASS) at or above the occlusal plane (A- level) .

In 2016 Goyal S., Verma, et al have proposed the same results at a rate of 51% for vertical third molars and 57% for third molars of Class II[13].

- in 2013 Brand H.S et al.Most studies that investigated pericoronitis indicate that the third molars of the mandible are more likely to be affected. they study presented lower left third molars to be more susceptible to the disease in agreement with the study of Ayanbadejo et al. [14], , which reported that lower left third molars (45,3%) were more affected than lower right third molars (37.1%) or than a combination of both lower third molars (17.7%) [15].

- in 2013 Folayan et proved that pericoronitis may be present in non-third molar teeth at a minimum rate of 0.63%, with the lower left permanent second molars being more susceptible to the condition. The study was limited to children under 15 years old [2].

- in 2015 Al-Dajani M et al. reported that pericoronitis can affect patients' total well-being, causing several troubles, including chewing, talking, mouth opening, sleeping, taking part in social life, participating in sports [16].

Conclusion:

- The Pericoronitis occurrence in female more than male in Yemen because the jaws of the female is a smaller therefore haven't space for eruption of the third molar .

- The chewing of the qat and poor oral hygiene are responsible about of the Pericoronitis.

- The best treatment plane firstly stop qat chewing and make good oral hygiene.

- Pericoronitis should be considered as a serious one and should be diagnosed early and treatment should be instituted as soon as possible with thorough history, examination, and radiographic assessment. Depending on the severity, treatment should be implemented on an emergency basis.

- The Mandibular third molar impaction is a common pathology encountered in adult female between 20- 27 Years and most commonly type Mesio-impacted, partially erupted mandibular third molar.

References

1. Friedman J.W. The prophylactic extraction of third molars: A public health hazard. Am. J. Public Health. 2007;97:1554–1559. doi: 10.2105/AJPH.2006.100271.

2. Gelesko S., Blakey G.H., Partrick M., Hill D.L., Jr., White R.P., Jr., Offenbacher S., Phillips C., Haug R.H. Comparison of periodontal inflammatory disease in young adults with and without pericoronitis involving mandibular third molars. J. Oral Maxillofac. Surg. 2009;67:134–139. doi: 10.1016/j.joms.2008.08.017

3. Sixou J.L., Magaud C., Jolivet-Gougeon A., Cormier M., Bonnaure-Mallet M. Microbiology of mandibular third molar pericoronitis: Incidence of beta-lactamase-producing bacteria. Oral Surg. Oral Med. Oral Pathol. Oral Radiol. Endodontol. 2003;95:655–659. doi: 10.1067/moe.2003.238.

4. Igoumenakis D., Giannakopoulos N.N., Parara E., Mourouzis C., Rallis G. Effect of Causative Tooth Extraction on Clinical and Biological Parameters of Odontogenic Infection: A Prospective Clinical Trial. J. Oral Maxillofac. Surg. 2015;73:1254–1258. doi: 10.1016/j.joms.2015.02.008

5. Ventä I., Meurman J.H., Murtomaa H., Turtola L. Effect of Erupting Third Molars on Dental Caries and Gingival Health in Finnish Students. Caries Res. 1993;27:438–443. doi: 10.1159/000261576.

6. Kavarodi A.M. Necrotizing fasciitis in association with Ludwig's angina—A case report. Saudi Dent. J. 2011;23:157–160. doi: 10.1016/j.sdentj.2011.03.003

7. Magraw C.B., Golden B., Phillips C., Tang D.T., Munson J., Nelson B.P., White R.P., Jr. Pain with pericoronitis affects quality of life. J. Oral Maxillofac. Surg. 2015;73:7–12. doi: 10.1016/j.joms.2014.06.458

8. Pires W.R., Bonardi J.P., Faverani L.P., Momesso G.A., Munoz X.M., Silva A.F., Panzarini S.R., Bassi A.P., Ponzoni D. Late mandibular fracture occurring in the postoperative perio after third molar removal: Systematic review and analysis of 124 cases. Int. J. Oral Maxillofac. Surg. 2017;46:46–53. doi: 10.1016/j.ijom.2016.09.003.

9. Petersen P.E. The World Oral Health Report 2003: Continuous improvement of oral health in the 21st century—The approach of the WHO Global Oral Health Programme. Community Dent. Oral Epidemiol. 2003;31(Suppl. 1):3–23

10. Khaleeq Ur R. Emergency dental services: Review of the Community Health NHS Trust Service in Birmingham between 1997 and 2000. Prim. Dent. Care. 2003;10:93–96. doi: 10.1308/135576103322497066

11. Isola G., Matarese M., Ramaglia L., Cicciù M., Matarese G. Evaluation of the efficacy of celecoxib and ibuprofen on postoperative pain, swelling, and mouth opening after surgical removal of impacted third molars: A randomized, controlled clinical trial. Int. J. Oral Maxillofac. Surg. 2019 doi: 10.1016/j.ijom.2019.02.006. [PubMed] [CrossRef] [Google Scholar]

12. Jain N., Maria A. Randomized double blind comparative study on the efficacy of Ibuprofen and aceclofenac in controlling post-operative sequelae after third molar surgery. J. Maxillofac. Oral Surg. 2011;10:118–122. doi: 10.1007/s12663-011-0198-9.

13. Goyal S., Verma P., Raj S.S. Radiographic Evaluation of the Status of Third Molars in Sriganganagar Population—A Digital Panoramic Study. Malays. J. Med. Sci. 2016;23:103–112. doi: 10.21315/mjms2016.23.6.11

14. Brand H.S., van der Cammen C.C.J., Roorda S.M.E., Baart J.A. Tooth extraction education at dental schools across Europe. BDJ Open. 2015;1:15002. doi:10.1038/bdjopen.2015.2. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

15. Lee C.T., Zhang S., Leung Y.Y., Li S.K., Tsang C.C., Chu C.H. Patients' satisfaction and prevalence of complications on surgical extraction of third molar. Patient Prefer. Adherence. 2015;9:257–263. [PMC free article] [PubMed] [Google Scholar]

16. Al-Dajani M. Dental students' perceptions of undergraduate clinical training in oral and maxillofacial surgery in an integrated curriculum in Saudi Arabia. J. Educ. Eval. Health Prof. 2015;12:45. doi: 10.3352/jeehp.2015.12.45.

17. Ghaeminia H., Perry J., Nienhuijs M.E., Toedtling V., Tummers M., Hoppenreijs T.J., Van der Sanden W.J., Mettes T.G. Surgical removal versus retention for the management of asymptomatic disease-free impacted wisdom teeth. Cochrane Database Syst. Rev. 2016 doi: 10.1002/14651858.CD003879.pub4. [PubMed] [CrossRef] [Google Scholar]

18. Vlcek D., Razavi A., Kuttenberger J.J. Antibiotics in third molar surgery. Swiss Dent. J. 2014;124:294–302. [PubMed] [Google Scholar]

19. Song F., Landes D.P., Glenny A.M., Sheldon T.A. Prophylactic removal of impacted third molars: An assessment of published reviews. Br. Dent. J. 1997;182:339–346. doi: 10.1038/sj.bdj.4809378. [PubMed] [CrossRef] [Google Scholar]