Prophylactic Extraction of Impacted Third Molars : A Review

Dr. Safeena
Reader, Dept. of Orthodontics
Al-Badar Dental College & Hospital, Gulbarga

Dr. Mohammed Najmuddin
Asst. Prof., Dept. of Oral Medicine and Radiology
AME's Dental College, Raichur.

Abstract

Third molars often develop in inappropriate positions, and they may be unable to erupt properly. Removal of third molars is the most commonly performed oral surgical procedure. It is not possible to predict reliably whether impacted third molars will develop pathological changes if they are not removed. Surgical removal of third molars can only be justified when clear long term benefit to the patient is expected. This review scans the literature for any evidence to justify the prophylactic removal of asymptomatic third molars which has been a long standing controversy

Key Words: Third molar, Pathologic changes, Prophylactic removal.

Introduction

Removal of third molars is the most commonly performed oral surgery procedure.[1,2,3] It is justified to extract an impacted third molar when they cause pathological changes and/or severe symptoms such as infection, non-restorable carious lesions, cysts, tumours and destruction of adjacent teeth and bone[2]. However, the justification for prophylactic removal of impacted third molars has been debated for many years. The reason being that many impacted or unerupted third molars may eventually erupt normally and many impacted third molars never cause clinically important problems.

Several reasons are given for the early removal of asymptomatic or pathology-free impacted third molars, almost all of which are not based on reliable evidence: They are as follows

- They have no useful role in the mouth;
- They may increase the risk of pathological changes and symptoms;
- If they are removed only when pathological changes occur, patients may be older and the risk of serious complications after surgery may be greater.

Indications for prophylactic extraction of third molar are:

- Pericoronitis (inflammation of the gingival surrounding the crown of a tooth)
- Cyst development
- The risk of malignant neoplasms arising in a dental follicle
- Third molars causing dental caries of second molars
- Impacted third molar causing root resorption of the adjacent second molar
- To facilitate orthodontic treatment such as tooth movement and/or retention
- Symptoms such as pain, swelling, trismus due to non availability of space in the dental arch for eruption of third molar
- To prevent any lower incisor crowding due to impacted third molars

Pericoronitis is a condition where there is inflammation of the gingival surrounding the crown of a tooth. This is the most common indication for third molar surgery[4], and mainly occurs in adolescents and young adults. This condition is rarely seen in older people[5]. A study reported that over 4 years of follow up, 10% of lower third molars develop pericoronitis[6]. Cyst development is very rare and is not and indication for prophylactic removal[5]. The risk of malignant neoplasms arising in a dental follicle is negligible and is not an indication for prophylactic removal.

Very few impacted third molars cause dental caries (decay) of second molars[5], though estimates vary (1% to 4.5%). Fear of second molar caries is not a justification for prophylactic removal. There is a low incidence (less than 1%) of root resorption of second molars with impacted third molars[6]. The association between lower incisor crowding and impacted third molars is not significant and does not warrant the removal of third molars[7].

To facilitate orthodontic treatment such as tooth movement and/or retention. During planning of orthodontic treatment, on routine OPG examination, if the impacted third molars have a mesioangular or a horizontal impaction, the eruptive forces of these teeth may be in the mesial direction, compromising the extraction space for retraction of proclined anteriors. In such situations, it is indicated for prophylactic removal of asymptomatic third molar.

Common complications following third molar surgery include sensory nerve damage (paraesthesia), dry socket, infection, haemorrhage and pain. Rarer complications include severe trismus, oro-antral fistula, iatrogenic damage to the adjacent second molar and iatrogenic mandibular fracture.

The rate of sensory nerve damage after third molar surgery has been shown to range from 0.5% to 20%.[9] The overall rate of dry socket varies from 0% to 35% among studies.[9] The risk of dry socket increases with lack of surgical experience and tobacco use, though this does not justify prophylactic removal[5,8].

Discussion

A recent evaluation of published reviews[9] has concluded that there is little reliable evidence to support prophylactic removal of impacted third molars. Two decision analyses also concluded that, on average, patients longer term well being is more likely to be maximised if only those impacted third molars with pathology are removed[10].

Two reviews from North America also confirm this conclusion. One acknowledged a lack of reliable evidence to support the prophylactic removal of impacted third molars. The other concluded that 'routine prophylactic third molar extraction is unjustifiable[5]. It showed that impacted third molars in adolescents are most likely to develop pathological indications, while impacted third molars in adults are unlikely to undergo significant pathological changes. This review also indicated that older patients, for whom third molar extraction is necessary, generally tolerate the procedure well

Proffit et al suggest that an asymptomatic third molar does not always mean pathology free. So, a radiographic assessment is necessary to conclude the existence of pathology and the decision to extract or not should be left to the patient after educating the patient about the problems associated[11].

In a comparison of the risk of pathological changes in retained third molars and complications after third molar surgery, the rate of complications after removing third molars was 11.8% in youths (age range 12-29) and 21.5% in older age (age range 25-81). In addition, results from several studies showed that the risk of pathological changes in older adults ranges from zero to 12%. Using these figures, it can be calculated that there will be more complications after prophylactic removal of pathology free third molars than after removing only those third molars with pathological changes (see Table-1).

Table-1

Indicated for Prophylactic Extraction	Not Indicated for Prophylactic Extraction
• Higher-level reasons associated with the patient's life situation. • If other measures are being conducted under anesthetic and further anesthesia would be necessary for removal of a third molar. • Where prosthetic treatment is planned and secondary eruption due to further atrophy of the alveolar ridge or to pressure of the removable prosthesis is likely. • To facilitate orthodontic treatment such as tooth movement and/or retention.	• Where spontaneous regular positioning of the third molars in the dental arch is likely. • If the extraction of other teeth and/or orthodontic treatment with correct positioning of the tooth is appropriate". • Deeply impacted and malposed teeth without associated pathology, where a high risk of surgical complications exists.

The fact that most third molars, impacted or not, do not become diseased and that the risk of iatrogenic injury from such surgery is greater than the risk of leaving asymptomatic, nonpathologic teeth alone does not override the expert opinion of oral and maxillofacial surgeon On the other hand, the probability of impacted third molars causing pathological changes in the future may have been exaggerated.[3,7] In addition, third molar surgery is not risk free, the complications and suffering following third molar surgery may be considerable. Therefore, prophylactic removal should only be carried out if there is good evidence of patient benefit.

Conclusion

It is not possible to predict reliably whether impacted third molars will develop pathological changes if they are not removed. Surgical removal of third molars can only be justified when clear long term benefit to the patient is expected. Based on evidence and guidelines from the past ten years of evidence, there is currently insufficient evidence supporting or refuting the practice of prophylactic removal of asymptomatic third molars. Regarding clinical practice, the decision to remove asymptomatic wisdom teeth appears to be best based on careful consideration by practitioners of the potential risks and benefits for individual patients, explaining to the patient regarding the same and decision be made by the consent of the patient

References

1. NHS Centre for Reviews and Dissemination. Prophylactic removal of impacted third molars: is it justified? Effectiveness Matters [Internet]. 1998 Oct [cited 2010 Jul 9];3(2):1-4. Available from: http://www.york.ac.uk/inst/crd/EM/em32.pdf
2. Jasinevicius TR, Pyle MA, Kohrs KJ, Majors JD, Wanosky LA. Prophylactic third molar extractions: US dental school departments' recommendations from 1998/99 to 2004/05. Quintessence Int. 2008 Feb;39(2):165-76.
3. Cabbar F, Guler N, Comunoglu N, Sencift K, Cologlu S. Determination of potential cellular proliferation in the odontogenic epithelia of the dental follicle of the asymptomatic impacted third molars. J Oral Maxillofac Surg. 2008 Oct;66(10):2004-11.
4. Worrall SF, Riden K, Haskell R, Corrigan AM. UKNational Third Molar project: the initial report. British Journal of Oral and Maxillofacial Surgery. 1998; 36(1):14-18.
5. Daley TD. Third molar prophylactic extraction: a review and analysis of the literature. General Dentistry 1996; 44(4): 310-320.
6. Von Wowern N, Nielsen HO. The fate of impacted lower third molars after the age of 20. A four-year clinical follow-up. International Journal of Oral and Maxillofacial Surgery 1989; 18(5): 277-280.
7. Vasir NS, Robinson RJ. The mandibular third molar and late crowding of the mandibular incisors a review British Journal of Orthodontics 1991; 18: 59-66.
8. Mercier P, Precious D. Risks and benefits of removal of impacted third molars. International Journal of Oral and Maxillofacial Surgery 1992; 21: 17-27.
9. Song F, Landes DP, Glenny AM, Sheldon TA. Prophylactic removal of impacted third molars: an assessment of published reviews. British Dental Journal. 1997; 182(9): 339-346.
10. Carmichael FA, McGowan DA. Incidence of nerve damage following third molar removal: a review.. British Journal of Oral and Maxillofacial Surgery 1992; 30(2):78-82.
11. Evaluation and management of asymptomatic third molars: Lack of symptoms does not equate to lack of pathology Raymond P. White, Jr and William R. Proffit American Journal of Orthodontics and Dentofacial Orthopedics July 2011 Vol 140 Issue 1

Author Guidelines

Dear Doctor,

Healtalk (A Journal of Clinical Dentistry) is bibliographic listed with International Standard Series Number 0975-6329 and also with Index Copernicus International-Poland, European State, Ulrich's International Periodical Directory U.S.A. & Genamics Journal Seek.

If you want to send some article please read the follow:

Healtalk (A Journal of Clinical Dentistry) solicits articles of all the dental specialties. Those who wish to contribute to the Dental Journal should send the matter at the editorial office. We reserve the right to edit the articles.

Please note that we prefer case studies & case review type article. We reserve the right to reject articles without assigning any reason.

Selection of articles will be the sole discretion of the editorial board. Unselected articles will not be returned. Please send your brief bio-data & passport size photograph along with the article. Ideally the articles should be approximately of about 1400 or above words. We would prefer the article in word format only. Also send the images in high resolution i.e. Minimum 300 dpi in JPEG Format.

Authors from India are requested to send article by upload your article through our website :

www.healtalkht.com

And also authors from India are requested to send article on a CD along with two printout on the below address :

The authors photographs & a brief bio-data must accompany all the articles.

Afzal A.
Managing Editor
967/21-C, Housing Board Colony,
Faridabad (Haryana)
+91-9027637477
info@healtalkht.com,
editor@healtalkht.com
www.healtalkht.com