

# IS IT WISDOM TO REMOVE A WISDOM TOOTH? - Extraction versus nonextraction Management of Impacted Tooth

Bansal Shallu<sup>1</sup>, Singla Rajesh<sup>2</sup>

Senior Lecturer<sup>1</sup>  
Professor and Head<sup>2</sup>  
Department of Oral &  
Maxillofacial Surgery  
Surendera Dental College  
and research institute

## Abstract

Prophylactic removal of impacted third molar is the most commonly practiced dental procedure. The indications for removal of asymptomatic impacted third molar have been challenged in recent years. Decisions regarding this question not only should consider the presence of ongoing symptoms or pathology but also anticipate future complications & morbidity associated with retention of the third molars and possible increased risk of extraction at an older age. In this paper we present the currently available evidence against & in support of the prophylactic removal of impacted third molars.

## Key words

Wisdom tooth, prophylactic removal, third molar

## INTRODUCTION

Prophylactic removal of impacted third molar is most commonly dispensed procedure in our day to day practice. According to the American Association of Oral and Maxillofacial Surgeons, "if there is insufficient anatomical space to accommodate normal eruption, removal of such teeth at an early age is a valid and scientifically sound treatment rationale based on medical necessity."<sup>1</sup> As a result, 10 million teeth classified as impactions (teeth that fail to erupt into normal position but remain fully or partially embedded and covered by jawbone or gum tissue) are removed every year from mostly healthy young people.<sup>2</sup>

There are wide variations in rates of third molar surgery.<sup>3,4</sup> There is also some evidence that deprived populations with poor dental health are less likely to have third molars removed than more affluent populations with good dental health.<sup>3,5</sup> However, the reasons for this are complex. Recently indications for the removal of asymptomatic impacted third molar have been challenged. This controversy has initiated the search for evidence based data to justify this practice.

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

On the other hand, the probability of impacted third molars causing pathological changes in the future

may have been exaggerated.<sup>6,7</sup> Many impacted or unerupted third molars may eventually erupt normally and many impacted third molars never cause clinically important problems.<sup>8</sup> In addition, third molar surgery is not risk free; the complications and suffering following third molar surgery may be considerable.<sup>9</sup> Therefore, prophylactic removal should only be carried out if there is good evidence of patient benefit. Third-molar surgery is a multibillion-dollar industry that generates significant income for the dental profession, particularly oral and maxillofacial surgeons. It is driven by misinformation and myths that have been exposed before but that continue to be promulgated by the profession.

## MYTH NUMBER 1—THIRD MOLARS HAVE A HIGH INCIDENCE OF PATHOLOGY

Not more than 12% of impacted teeth have associated pathology. This incidence is the same as for appendicitis (10%) and cholecystitis (12%), yet prophylactic appendectomies and cholecystectomies are not the standard of care.<sup>10</sup> Why then prophylactic third-molar extractions?

Pericoronitis (inflammation of the gingival surrounding the crown of a tooth) is the most common indication for third molar surgery,<sup>11</sup> and mainly occurs in adolescents and young adults but less commonly in older people.<sup>12</sup> A study reported that over 4 years of follow up, 10% of lower third molars develop pericoronitis.<sup>13</sup>

Very few impacted third molars cause dental caries (decay) of second molars,<sup>12</sup> though estimates vary (1% to 4.5%).<sup>9</sup> Fear of second molar caries is not a justification for prophylactic removal.

## Address For Correspondence:

Bansal Shallu. MDS  
Senior Lecturer Department of Oral  
& Maxillofacial Surgery Surendera  
Dental College and Research Institute  
H. H. Garden, Power House  
Road, Sriganganagar-335001 Rajasthan, India  
PH: +919414343004, +919812167543  
Fax: +911542440102 Email: drshallu23@yahoo.com

There is a low incidence (less than 1%) of root resorption of second molars with impacted third molars.<sup>13</sup> One review concludes that the risk of second molar root resorption by impacted third molars is low, and is likely to occur in younger patients for whom surgery is claimed to be associated with less morbidity.<sup>12</sup>

Many dentists confuse the incidence of pathology as it shows up in their offices with its prevalence in the population. Advocacy of prophylactic extractions that is based on anecdotal experience (i.e., patients with diseased third molars who make dental appointments) exaggerates the problem and exposes millions of people to the risk of iatrogenic injury. Considering the low prevalence of third-molar pathology in the population, removal of asymptomatic, nonpathologic third molars does not meet the standard of evidence-based practice.

#### **MYTH NUMBER 2—EARLY REMOVAL OF THIRD MOLARS IS LESS TRAUMATIC**

The American Association of Oral and Maxillofacial Surgeons states that “about 85% of third molars will eventually need to be removed.”<sup>14</sup> The association recommends extraction of all 4 third molars by young adulthood—preferably in adolescence, before the roots are fully formed—to minimize complications such as postextraction pain and infection.

Early removal of third molars is actually more traumatic and painful than leaving asymptomatic, nonpathologic teeth in situ. Tulloch et al. estimate that patients suffer an average of 2.27 days of standard discomfort or disability, defined as “the disability normally associated with an uncomplicated surgical extraction of a mandibular third molar: namely, pain, swelling, bruising and malaise.”<sup>15</sup> Furthermore, dry socket, secondary infection, and paresthesia are less likely to occur in persons aged 35 to 83 years than in those aged 12 to 24 years, who experience more third-molar extractions. The highest risk of complication is in persons aged 25 to 34 years.<sup>16</sup>

When a lower third molar is removed, usually the opposing upper third molar is also removed. Assuming an average of 2 extractions per episode, the 10 million third molars extracted annually involve 5 million people and 11.36 million days of standard discomfort or disability. If only the 20% of wisdom teeth with pathology were extracted, 4 million people would be spared pain, swelling, bruising, malaise, and consequent absence from school or work—an aggregate decrease of 9 million days of discomfort and disability each year. Allowing for some margin of error and for the fact that one third of third molars are reported to cause some symptoms in the past or present, if only 33% were extracted, 3.34 million people would still be spared an average of 2.27 days of discomfort and disability each, or 7.6 million days of discomfort and disability in the aggregate.

#### **Myth Number 3—Pressure of Erupting Third Molars Causes Crowding of Anterior Teeth**

Most young adults experience some degree of anterior mandibular incisor crowding, usually coinciding with the emergence of the third molar. In 1996, Richardson<sup>17</sup> conducted a review of literature that conducted that pressure from the posterior arch is an important cause of late mandibular incisor crowding. Among the many possible variables contributing to incisor crowding (e.g. physiological mesial drift, occlusal forces on mesially inclined teeth, mesial vector of muscle contraction, developing third molar, mandibular and complex facial growth patterns, soft tissue maturation, occlusal factors and connective tissue changes), it becomes difficult to design a study that can isolate all variables and demonstrate a cause and effect relationship between mandibular third molar and incisor crowding.<sup>18</sup> Third molars do not possess sufficient force to move other teeth.

They cannot cause crowding and overlapping of the incisors, and any such association is not causation.<sup>19-21</sup>

#### **Myth Number 4—The Risk of Pathology in Impacted Third Molars Increases With Age**

The American Association of Oral and Maxillofacial Surgeons states, without substantiation, “Pathologic conditions [of impacted third molars] are generally more common with an increase in age”<sup>1</sup> Cyst development is very rare (less than 0.8%)<sup>22</sup> and is not an indication for prophylactic removal.<sup>12</sup> The risk of malignant neoplasms arising in a dental follicle is negligible and is not an indication for prophylactic removal.<sup>12</sup>

#### **Myth Number 5—There is Little Risk of Harm in the Removal of Third Molars**

Given the low incidence of pathology, it is specious to contend that less than 3 days of temporary discomfort or disability is a small price to pay to avoid the future risks of root resorption, serious infections, and cysts. Also ignored is the risk of incidental injury such as broken jaws, fractured teeth, damage to the temporomandibular joints, temporary and, especially, permanent paresthesia or dyesthesia (numbness and dysfunction of the lower lip and the tongue)

#### **PROPHYLACTIC REMOVAL: IS IT JUSTIFIED?**

In a comparison of the risk of pathological changes in retained third molars and complications after third molar surgery, the complications after removing third molars includes risk of lingual nerve injury (0.6-2%)<sup>23</sup>, inferior alveolar nerve injury (0.5-5%)<sup>23</sup>, Periodontal defect distal to second molar and increased chances of condylar fracture.<sup>24</sup>

But there are certain evidences also available in support of prophylactic removal of third molars. The benefits of early extraction includes reduces the incidences of mandibular angle fracture, <sup>25</sup> eliminates the need for future extensive surgeries and improvement in the periodontal health around the second molar.<sup>26</sup>

One school of thought is endorsed by oral and maxillofacial surgeons who contend that most third molars are potentially pathologic and should be removed. On the contrary the British National Institute for Clinical Excellence is unequivocal in its recommendation, adopted by the National Health Service: “The practice of prophylactic removal of pathology-free impacted third molars should be discontinued There is no reliable evidence to support a health benefit to patients from the prophylactic removal of pathology-free impacted teeth.”<sup>27</sup> The conditions for which extraction is justified include nonrestorable dental caries, pulpal infection, cellulitis, recurrent pericoronitis, abscesses, cysts, and fractures

As it is not possible to predict reliably whether impacted third molar will develop pathological changes if they are not removed. In the absence of good evidence to support prophylactic removal, there appears to be little justification for the routine removal of pathology free impacted third molars.

#### **CONCLUSION**

Surgical removal of third molars can only be justified when clear long term benefit to the patient is expected. But there are more randomised controlled studies required to compare the long term outcome of early removal with retention of pathology free third molars. So there is always no wisdom in removing a wisdom tooth.

## CONFLICTS OF INTEREST STATEMENT

None

## SOURCE OF SUPPORT

None

## LIST OF REFERENCES

1. Statements by the American Association of Oral and Maxillofacial Surgeons Concerning the Management of Selected Clinical Conditions and Associated Clinical Procedures: The Management of Impacted Third Molar Teeth. Rosemont, Ill: American Association of Oral and Maxillofacial Surgeons; 2007.
2. American Dental Association. 1999 survey of dental services rendered [unpublished report]. ADA Catalog No. SDSR-1999.
3. Landes, D. P. The relationship between dental health and variations in the level of third molar removals experienced by populations. *Community Dental Health* 1998; 15L:67-71
4. Toth, B. The Appropriateness of Prophylactic Extraction of Impacted Third Molars. A Review of the Literature. Health Care Evaluation Unit, University of Bristol, 1993.
5. Gilthorpe, M. S., Bedi, R. An exploratory study combining hospital episode statistics with socio-demographic variables, to examine the access and utilisation of hospital oral surgery services. *Community Dental Health* 1997; 14(4): 209-213
6. Shepherd JP, Brickley M. Surgical removal of third molars. *British Medical Journal* 1994; 309: 620-621.
7. Stephens RG, Kogon SL, Reid JA. The unerupted or impacted third molar - a critical appraisal of its pathologic potential. *J Canad Dental Assoc* 1989; 55(3): 201-207.
8. Ahlqvist M, Grondahl HG. Prevalence of impacted teeth and associated pathology in middle-aged and older Swedish women. *Comm Dent Oral Epidem* 1991; 19(2): 116-119.
9. Mercier P, Precious D. Risks and benefits of removal of impacted third molars. *Intl J Oral Maxillofac Surg* 1992; 21: 17-27
10. Leonard MS. Removing third molars: a review for the general practitioner. *J Am Dent Assoc.* 1992; 123:77-92.
11. Worrall SF, Riden K, Haskell R, Corrigan AM. UK National Third Molar project: the initial report. *Brit J Oral Maxillofac Surg.* 1998; 36(1):14-18
12. Daley TD. Third molar prophylactic extraction: a review and analysis of the literature. *General Dentistry* 1996; 44(4): 310-320.
13. Von Wowern N, Nielsen HO. The fate of impacted lower third molars after the age of 20. A four-year clinical follow-up. *Int J Oral Maxillofac Surg* 1989; 18(5): 277-280.
14. Wisdom teeth [pamphlet]. Rose-mont, Ill: American Association of Oral and Maxillofacial Surgery; 2005
15. Tulloch JFC, Antczak-Bouckoms AA, Ung N. Evaluation of the costs and relative effectiveness of alternative strategies for the removal of mandibular third molars. *Int J Technol Assess Health Care.* 1990;6:505-515.
16. Osborn TP, Frederickson G, Small IA, Torgerson TS. A prospective study of complications related to mandibular third molar surgery. *J Oral Maxillofac Surg.* 1985;43:767-769.
17. Richardson ME. The etiology of late lower arch crowding alternative to mesially directed forces. *Am J Orthod Dentofacial Orthod* 1994; 105: 592-7.
18. Richardson ME. Late lower arch crowding in relation to skeletal and dental morphology and growth changes. *Br J Orthod* 1996; 23:249-54.
19. Southard TE. Third molars and incisor crowding: when removal is unwarranted. *J Am Dent Assoc.* 1992;123: 75-79.
20. Kaplan RG. Mandibular third molars and post-retention crowding. *Am J Orthodont.* 1974;66:411-430.
21. Harradine NW, Pearson MH, Toth B. The effect of extraction of third molars on late lower incisor crowding: a randomized controlled trial. *Br J Orthodont.* 1998;25:117-122
22. Stanley HR, Alattar M, Collett WK, Stringfellow HR, Spiegel EH. Pathological sequelae of "neglected" impacted third molars. *J Oral Pathol.* 1988;17:113-117
23. Alling CC III. Dysesthesia of the lingual and inferior alveolar nerves following third molar surgery. *J Oral Maxillofac Surg* 1986; 44:454.
24. Zhu SJ, Chi BH, Kim HJ et al. Relationship between the presence of unerupted mandibular third molar and fractures of the mandibular condyles. *Int J Oral Maxillofac Surg* 2005; 34: 382-5.
25. Sadfar N, Meechan JG. Relationship between fractures of the mandible angle and presence and state of eruption of the lower third molars. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1995; 79: 680-4.
26. Richardson DT, Dodson TD. Risk of periodontal defects after third molar surgery: an exercise in evidence- based clinical decision making. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2005; 100(2):133-7.
27. National Institute for Clinical Excellence. Guidance on the extraction of wisdom teeth. 2000. Available at: [www.nice.org.uk](http://www.nice.org.uk). Accessed June 14, 2007

Source of Support: Nill, Conflict of Interest: None declared