



## *Statement 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

## Section 1: Parameters of Care as the Basis for Clinical Practice

### Introduction

This statement is intended to summarize the procedures used in the management of patients presenting for care by oral and maxillofacial surgeons. The definitive guide to the management of such patients is *Parameters of Care: AAOMS Clinical Practice Guidelines for Oral and Maxillofacial Surgery (AAOMS ParCare) Sixth Edition 2017*<sup>1</sup>. Any references used in the development of this statement can be found in *AAOMS ParCare 2017*. This statement is not intended as a substitute for *AAOMS ParCare 2017*, but rather as a synopsis of the information contained in *AAOMS ParCare 2017*, the AAOMS “Report of a Workshop on the Management of Patients with Third Molars,”<sup>2</sup> the National Institutes of Health Consensus Development Conference: Removal of Third Molars,<sup>3</sup> and other recent articles and reports. The AAOMS White Paper on Third Molar Data also provides data-based conclusions for management of third molars.<sup>4</sup>

## Section 2: Impacted Third Molar Teeth

### Preface

This statement will focus on the diagnosis, associated pathology and surgical standards of care for treatment of impacted third molar teeth in order to provide acceptable, reasonable and prudent care to patients while effectively utilizing healthcare resources.

### Definitions

An impacted tooth is defined by an inability to erupt to the normal position in the oral cavity. This may be due to insufficient space in the dental arch to accommodate eruption of the tooth, ectopic or abnormal position of the tooth, the presence of associated pathology or other reasons. It is possible for any tooth to follow an aborted

eruptive path and become impacted. Those teeth most commonly impacted include mandibular and maxillary third molars, maxillary canines, mandibular premolars and mandibular canines.

### Diagnosis

Diagnosis should be based on patient complaint, history, physical evaluation and diagnostic evaluation. Since irreversible and deleterious effects to adjacent soft and hard tissues may proceed to advanced stages without symptoms, “...it is important that [clinical examination, which may include measurement of probing depths and attachment levels in the third molar and adjacent second molar sites, and] radiographic evaluation be performed.” The most commonly accepted imaging modality is the panoramic radiograph. Other imaging techniques may be utilized if they provide appropriate visualization of the entire tooth and associated structures. However, radiographs may not provide complete or accurate information as to tooth position and surgical technique indicated for removal.<sup>5</sup> It is the responsibility of the oral and maxillofacial surgeon to make appropriate decisions and recommendations based on the diagnosis established in light of available and valid scientific evidence. After a thorough discussion of the options and potential complications of treatment, a final determination must be based on an agreement between the surgeon and the patient.

### Indications for Care

Patients are frequently referred to an oral and maxillofacial surgeon for treatment of impacted teeth. Referrals for evaluation of impacted third molar teeth originate from a variety of healthcare professionals who understand the problems associated with the lack of normal eruption. Since all impacted third molar teeth are potentially pathologic, prudent care requires removal, exposure, repositioning or, in selected cases, long-term monitoring



following appropriate education of the patient. Articles documenting the pathology produced by impacted teeth are numerous. Lesions that may be secondary to or associated with impacted teeth include, but are not limited to, acute and chronic inflammation or infection, resorption phenomenon, carious lesions including those of adjacent teeth, cystic or neoplastic disease and displacement or destruction of adjacent hard-tissue structures including teeth and bone. Pathologic conditions are generally more common with age. Indications for treatment include, but are not limited to, the following:

- Pain
- Facilitate the management or limit progression of periodontal disease
- Ectopic position
- Facilitate prosthetic rehabilitation
- Facilitate orthodontic tooth movement and promote dental stability
- Tooth interfering with orthognathic and/or reconstructive surgery
- Fractured tooth
- Nonrestorable caries
- Internal or external resorption of tooth or adjacent teeth
- Tooth involved in tumor resection
- Prophylactic removal in patients with certain medical or surgical conditions or treatments (e.g., organ transplants, alloplastic implants, chemotherapy, radiation therapy)
- Patient's informed refusal of nonsurgical treatment options
- Nontreatable pulpal lesion
- Acute or chronic infection (e.g., cellulitis, abscess)
- Abnormalities of tooth size or shape
- Findings of periodontal disease
- Findings of periapical pathology
- Elective therapeutic removal
- Tooth in the line of a jaw fracture complicating fracture management
- Pathology associated with tooth follicle (e.g., cysts, tumors)

- Facilitate management in trauma, orthognathic or reconstructive surgery
- Insufficient space to accommodate erupting tooth or teeth
- Orthodontic abnormalities (e.g., arch length/ tooth size discrepancies)

Whenever possible, treatment should be provided before the pathology has adversely affected the patient's oral and/or systemic health. The goal should be to limit side effects and provide an environment for optimal healing.

Consideration may be given to maintaining an impacted third molar tooth in place when it has complete root formation, is totally covered by bone and does not meet any of the clinical and/or radiographic indications for removal listed above. In such instances, monitoring should be arranged to assess potential changes in tooth position and/or the development of pathology. When such a recommendation is made in lieu of therapy, the patient should be informed of the potential for the development of pathology, the possible need for future treatment and the increased incidence of complications associated with treating impacted teeth at an advanced age.

In some instances when the impacted tooth is in a position close to, or impinging upon, vital structures such as the inferior alveolar nerve and there are clinical indications for removal of the tooth, it may be appropriate to remove the crown of the tooth (coronectomy)<sup>7</sup> and leave the portion adjacent to the nerve. The patient must be informed of possible complications including possible altered sensation, infections and the possibility of additional surgery. This discussion must be documented in the patient record.

## Medical Necessity

In light of the well-documented history of problems associated with impacted teeth, surgical care is considered medically necessary when the indications for treatment of such teeth are consistent with one or more of those listed above.

## Treatment

Treatment may include removal, coronectomy, surgical exposure, transplantation or long-term observation of the impacted tooth. When removal of an impacted tooth is indicated, it is surgically prudent and cost beneficial that other impacted teeth be considered for treatment at the same surgical session. This reduces the need for additional anesthetic and surgical procedures. Contraindications to the removal of impacted teeth usually involve compromise in the patient's medical status, extremes of age and the probability of damage to adjacent structures. The decision to maintain an impacted tooth should be based on valid evidence and expectations. In these cases, long-term clinical and radiographic observation is necessary and the patient must be informed of the risks and benefits of surgical intervention versus maintenance of the tooth and long-term observation.

The surgical treatment of impacted teeth should be accomplished by appropriately trained and skilled individuals in an environment in which such care is routinely provided. Surgery should be performed using appropriate equipment, refined surgical techniques, sterile instrumentation accompanied with appropriate anesthetic management of the patient. The objective is to provide safe and effective surgical and anesthetic care.

## Outcomes

The usual result of surgical treatment of impacted teeth is uncomplicated healing without morbidity. However, postoperative complications may occur as in any surgical operation. Fortunately, the complication rate is low for such procedures when performed at an early age. The most common complications are delayed healing and infection. Less common but more troublesome complications include injuries to adjacent structures such as the inferior alveolar nerve or the lingual nerve, which may cause transient or permanent alterations in sensation. The incidence of perioperative and postoperative morbidity increases with the age of the patient.

## Removal of Asymptomatic Impacted Third Molars

Aside from obvious indications for removal of impacted teeth such as overt pathology, removal is also the preferred option for teeth if there is insufficient anatomic space to accommodate normal eruption. It is clear that timely removal of such impacted third molar teeth at an early age is a valid and scientifically sound treatment rationale based on medical necessity. The report of the National

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Institutes of Health Consensus Development Conference: Removal of Third Molars<sup>3</sup> – which represented an objective, unbiased analysis regarding the removal of third molars – stated such treatment is not prophylactic. Current textbooks on oral and maxillofacial surgery also document the scientific basis for the treatment of asymptomatic impacted teeth. For example, Peterson's *Contemporary Oral and Maxillofacial Surgery* states, “if impacted teeth are left in the alveolar process, it is highly probable that one or more of a number of problems will result.”<sup>6</sup>

Clinical decision-making in the management of pathology associated with impacted teeth depends on the anticipated natural course. *AAOMS ParCare 2017* state that in order to limit known risks and complications associated with the removal of impacted teeth, it is medically appropriate and surgically prudent to remove such teeth prior to complete root development. This is supported by the National Institutes of Health Consensus Development Conference: Removal of Third Molars, which found that “third molars should be removed in the younger-age patient because there is less transitory or permanent morbidity,” and less anesthetic risk.

## Conclusion

The American Association of Oral and Maxillofacial Surgeons recognizes scientific evidence stating that impacted teeth represent a potentially pathologic entity and surgical management is the treatment of choice. This is consistent with the findings of the National Institutes of Health Consensus Development Conference: Removal of Third Molars that concluded that impaction or malposition of the third molar is an abnormal state.<sup>3</sup>

To give patients the advantages of rapid healing and the lowest incidence of morbidity, impacted teeth should be treated as soon as it is apparent they will not properly erupt and occlude within the oral cavity. Treatment of impacted teeth at an early age is associated with a decreased incidence of morbidity and represents an efficient use of healthcare resources. Treatment at an older age carries with it an increase in the incidence and severity of perioperative and postoperative problems,

a longer period of postoperative recovery, greater anesthetic risk and more costly interference in daily activities and responsibilities.

When making a treatment decision, the risks and benefits of removal of impacted teeth must be weighed against the risks of retention and the cost and availability of professional clinical monitoring for an individual patient. The final decision should be based on valid scientific and clinical information.

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## References

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