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**TEN YEARS ON
The Military Wisdom Tooth¹**

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INTRODUCTION

THE PRACTICE OF MILITARY DENTISTRY is unique. Military dentists are trained in aspects of military medicine, operational health support, emergency triage and military administration. The peacetime responsibility of the armed forces is the preparation for war. In wartime, the primary role of the dental service is the conservation of manpower by the avoidance of unnecessary evacuation of the dentally sick.¹ This is accomplished by prompt and appropriate therapeutic treatment and, more significantly, by the implementation of preventive programmes and the promotion of healthy behaviour.

In keeping with the concept of preventive dental care, the question of whether or not to remove impacted mandibular third molars prophylactically remains hotly debated. In the civilian population, many practitioners advocate removing these teeth only if symptomatic or pathological. The indications for treatment in the military setting are quite different due to the nature of military service and the need for personnel to be medically and dentally fit at all times. This paper discusses the management of impacted third molar teeth from a military perspective and proposes a treatment protocol for the management of these teeth in the Australian Defence Force.

DISCUSSION

The mandibular third molar is the most commonly impacted tooth in the adult dentition. With the decline of dental caries due to water fluoridation, the incidence of these impactions is increasing.² The mandibular third molar is located posteriorly in the mouth, between the second molar tooth and the ascending ramus of the mandible. The pericoronal tissues are rendered extremely susceptible to infection due to only partial eruption of the tooth and the relative difficulty of cleaning at the back of the mouth. Anatomically, the third molar is related to the buccal and sub-masseteric spaces laterally, the sub-mandibular space inferiorly, and the sub-lingual, pterygoid and lateral pharyngeal spaces medially. Extension of infection into these tissue spaces is responsible for its serious nature and its potential threat to life. Aetiological factors associated with the development of pericoronitis include age, emotional stress, smoking, chronic fatigue, general debilitating illness, poor oral hygiene and respiratory tract infections.³

Most commonly minor infection presents as swelling of the soft tissues covering the tooth. This swelling results in physical impingement by the opposing maxillary third molar leading to an increase in swelling and pain and yet greater mechanical trauma. Signs and symptoms include pain, trismus, sub-mandibular lymphadenopathy and halitosis. In more severe cases there is pyrexia, obvious facial swelling and dysphagia. Extension of infection into the sub-mandibular, sub-lingual and lateral pharyngeal spaces may lead rapidly to airway compromise and asphyxia. When admission to hospital for odontogenic infection is required, mean hospital stays have been reported in the range of four to nine⁵ days.

In civilian practice approximately 25 to 30 percent of wisdom tooth removals are for pericoronitis. Other common indications include dental caries, root resorption, periodontal disease, orthodontia, cyst formation and for the relief of less clearly defined jaw pains. The presence of unerupted third molars reduces the cross-sectional area of the mandible and increases the likelihood of fracture following trauma.

Morbidity associated third molar removal is relatively high in the short term. Principal complaints are of pain and swelling and peak in the first two postoperative days. Alveolar osteitis (dry socket) is a painful condition often experienced after the removal of mandibular third molars. It is more common in patients over the age of 25 years⁷ and those with a history of pericoronitis". The most frequently observed long term complications are those associated with damage to the inferior alveolar and lingual nerves which supply sensation to the lower lip and tongue. Long term sensory deficits are seen in approximately 0.9 per cent of inferior alveolar and 0.6 per cent of lingual nerves. The frequency of neural injury has been demonstrated to reduce with the experience of the surgeon.¹⁰

Following the surgical removal of impacted wisdom teeth, the healing of periodontal defects about the root of the second molar tooth is significantly better in the younger patient.¹¹

Why are third molar teeth important in the military environment? A recent study found that 77.3 per cent of Australian Regular Army recruits had third molars present.¹² The mean age of the ADF is under 30 years and thus in the prime range for infections associated with their wisdom teeth. In the course of training, but more particularly operations, soldiers are prone to emotional stress, chronic fatigue, poor nutrition, poor oral hygiene and other illnesses, all of which are aetiological factors in the development of pericoronal infections. Thus, a significant portion of our patient population is at increased risk of pericoronitis.

The management of significant facial infections is the province of the oral and maxillofacial surgeon and within neither the scope of expertise of the general dental officer nor the facilities of the field (or base) dental unit. The need for both surgeon and hospital facilities would under operational conditions demand evacuation to a Level 4 medical facility. The soldier could expect to be away from his Unit and normal duties for approximately 14 days. The logistical difficulties are yet greater for a seaman on a surface ship or submarine.

The concept of conservation of manpower by preventive means dictates that impacted wisdom teeth should be identified early and removed before complications arise.

What are the advantages to the ADF of the prophylactic removal of impacted third molars during initial training?

- Conservation of manpower. If properly integrated into basic training, or before the commencement of specialist training, loss of skilled personnel to this preventable disease can be eliminated. Minor rearrangement of training programmes and the performance of surgical procedures late in the week should reduce lost training time to negligible levels.
- Prevention of complications. Surgery carried out by specialist surgeons under controlled conditions in suitable facilities minimises the incidence of complications. Performance under less than ideal conditions of what should have been elective procedures or the failure to address the periodontal considerations associated with impacted wisdom teeth may expose the ADF to legal liability at a later time.
- Training of dental officers. Concentration of oral and maxillofacial surgical activity offers the opportunity to increase the surgical skills of dental officers posted to these Units. Expertise is better acquired under direct specialist supervision than by experience as an emergency in the field.
- Effective utilisation of specialist manpower. The ADF has recently and is currently training a number of oral and maxillofacial surgeons. Concentration of basic oral surgical services would both facilitate effective utilization of these officers and also aid dissemination of their knowledge and skills.

The potential disadvantages of the routine prophylactic removal of impacted third molars soon after enlistment are twofold.

- Loss of training time. This should be minimal and acceptable if health care is viewed as integral rather than an impediment to the basic training course and the programmes are minimally reorganised on the lines discussed previously.

- Performance of unnecessary surgery. Not all impacted third molars will become symptomatic and despite the use of highly developed assessment skill on the part of the clinicians involved, "unnecessary" surgery will undoubtedly be performed".

CONCLUSIONS & RECOMMENDATIONS

The Defence force is an organisation quite unlike any other in our society. It is comprised largely of healthy, young men and women who are called upon at short notice to perform at their best, for long periods of time, often under very adverse conditions. Failure to perform may result in the injury or death of their colleagues. It is the responsibility of the ADF in peacetime to prepare for war by preparing its members to perform under frequently adverse operational conditions. The prevention of illness is as vital to the reliability of the force as is any other aspect of military training.

The authors propose that all recruits or equivalent have a screening panoramic radiograph of the jaws performed both for diagnostic and forensic purposes. Any recruit who has a history, signs or symptoms of pericoronitis or who has pathological changes about a third molar tooth should have this tooth removed.

Partially erupted or third molars not radiographically completely covered by bone are very susceptible to the development of acute pericoronitis and should be removed prophylactically.

The appropriate time for the routine surgical management of impacted teeth is during at the conclusion of basic training when the soldiers' skills are low and posted Unit routine will not be disrupted. In the presence of the will to do so, basic training courses and the routines of the supporting Dental Units can and should be altered to reduce lost training time to negligible levels.

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