Risks involved in removal of impacted mandibular third molars are, by far, much higher than the perceived risk of development of any condition compelling their prophylactic removal. Mandibular third molars, lying in close proximity to the most important sensory nerves especially the mandibular nerve, pose a considerable threat of possible neurological injury. Removal of impacted mandibular third molars especially if asymptomatic, is not desirable and has detrimental consequences affecting the patient's quality of life. Damage to the inferior alveolar nerve may result in paraesthesias or abnormal sensations, hypoesthesias, dysesthesias and even anesthesia with or without taste disturbances. This paper reviews a case involving prophylactic bilateral extractions of impacted mandibular third molars in a male patient 26 years of age, the aftereffects that occurred and some directives to improved management and avoidance of such problems.

KEY WORDS: Third Molar, Mandibular nerve, Paresthesia, Anesthesia.


INTRODUCTION

Mandibular third molars being the most frequently impacted teeth have always been the oral surgeon's prime targets for extraction. This school of thought is backed by myths of association of these teeth, with a high incidence of pathological lesions, anterior crowding, less trauma in cases of early extraction, and with the little risk of harm in removal. Although true to a certain extent, the above mentioned reasons do not justify the prophylactic removal of these teeth.

The risks involved in prophylactic extractions of such teeth, when weighed against conservation, are far greater than the risks of development of any of the aforementioned conditions. Apart from the usual post surgical complications including pain, swelling, hemorrhage, trismus and malaise, mandibular third molar removal is associated with more serious conditions affecting the quality of life including, paraesthesias, hypoesthesias, dysesthesias (temporary or permanent), fractures of adjacent teeth or mandible, development of periodontal defects and even anesthesia.

The most common pathology associated with impacted mandibular third molars is pericoronitis which if recurrent and/or unresponsive to treatment, necessitates removal.

A risk of development of cystic lesions around impacted teeth should be born in mind and weighed against the odds of development of physical or sensory disability which may be encountered after surgery. Patients with asymptomatic and impacted mandibular third molars should be recalled for continued follow up, but should not be encouraged to undergo a procedure involving considerable risk, affecting their quality of life unless there is a good evidence of patient's benefit.

Presence and position of mandibular impacted third molars has been identified as one of the potential etiological factors of both anterior crowding and late lower arch crowding post orthodontic treatment. This hypothesis has been nullified by research work. Prevention of mandibular incisor crowding by the prophylactic removal of third molars is therefore not justified.

Highest risks of complication of mandibular impacted third molar removal have been shown to be between 25 to 34 years of age as compared to higher age groups.

This case report signifies and enlightens how impacted mandibular third molar extractions can affect the quality of life and also explains how to avoid such events and manage the consequences.

CASE

A male patient 26 years of age, reported at the Department
of Dentistry, Pakistan Institute of Medical Sciences with the complaint of numbness and occasional tingling on the entire right side of his lower jaw including the lower lip and chin, and on the left half of his tongue which also had no taste sensation. On history taking it was revealed that he had undergone surgery for the removal of both his mandibular third molars under general anesthesia, at a dental hospital abroad (location undisclosed). On examination of his presurgical panoramic tomograph and periapicals, it was revealed that both the mandibular molars were impacted, #38 (FDI) being horizontal, while #48 (FDI) was mesioangular. Additionally both these teeth were in close proximity of the inferior dental canal as shown in fig.1. This finding was indicative of probability of trauma to the mandibular and lingual nerves during removal of the impacted teeth. On further questioning, the patient also disclosed that, he being a flying officer at an international airline, was suffering from frequent and excruciating episodes of pain, in his posterior mandibular region during flights only, which became the main reason for him opting to undergo removal of both his wisdom teeth. There was no history of episodes of pain with infection and swelling, i.e. pericoronitis in the mandibular third molar regions.

On examination, the patient was afebrile but had trismus, and ulceration at the angle of the mouth (fig 2). The socket healing was normal. Thorough neurosensory examination was carried out in the form of pin prick and light touch sensation test, which confirmed the anesthesia in the areas innervated by right mandibular inferior dental nerve both intraorally as well as extraorally. Provocation taste test was conducted, which includes the placement of sugar salt and mustard on the patient’s tongue, to confirm the ageusia on the left anterior half of the tongue. It was concluded that the patient had anesthesia on the entire mandibular right side and diminished taste sensation on the left anterior part of tongue. Rest of the oral cavity had a normal presentation. There was however a crown in upper central incisor and a root treated maxillary right first molar which at the time of examination did not show any abnormality. The patient was otherwise fit and healthy.

The patient was reassured and was advised to have regular follow up with a prescription of Methylcobalamin 500µg thrice daily. He was also advised not to have hot and spicy food stuff, keep a check on his intra oral environment daily so as to detect any trauma to the mucosa which may be in the form of ulceration, and not to chew his lip in order to check for the presence of any sensation.

On first follow up appointment after 15 days the patient reported minute alleviation in symptoms, in the form of improvement in taste sensation, however paresthesia of gums and lip on the right side was the same. Neurosensory examination was again inconclusive. Patient was advised to continue treatment for 15 more days. On subsequent visit, patient reported some form of sensations at night on the left side but overall the condition remained the same. He was then referred to an oral and maxillofacial surgeon and neurologist for opinion and further management.

DISCUSSION

Mandibular third molars lie in close proximity to four most important nerves, namely inferior dental, lingual and mylohyoid and long buccal nerves. These nerves are at constant risk of damage during surgical removal of impacted mandibular third molars.

Conditions which necessitate impacted mandibular third molar removal include acute or chronic pericoronitis, presence of caries on the second molar or third molar itself, presence of cysts, periodontal disease of second molar, resorption of adjacent tooth caused by the impacted third molar, pre or post orthodontic treatment or pre orthognathic surgery.³

The incidence of third molar removal has always been high all over the world with prophylactic extractions topping the list.⁴ However since the newly published recommendations of British National Institute of Clinical Excellence (NICE), the trend for prophylactic removal of mandibular third molars has changed in the UK and has started to flip towards a more conservative
approach in the US. The guidelines given by NICE specifically oppose prophylactic removal of impacted third molars.  

Removal of impacted mandibular third molars usually involves surgery under general anesthetic. Assessment of the factors such as depth of impaction, angulation of tooth, root curvature, ramus relationship, root divergence, number of roots, relative horizontal position, periodontal membrane space, and proximity to the inferior alveolar nerve must be kept under consideration during treatment planning, as they not only govern the difficulty of the procedure but also influence the post surgical management, outcomes and needs of the patient.  

Adverse events and complications of impacted third molar removal include effects from hemorrhage to numbness.  

Barodontalgia is defined as dental pain elicited by changes in barometric pressure in an asymptomatic tooth. Dental caries, pulpitis, defective restorations, periodontal pockets, pulp necrosis, apical periodontitis, impacted teeth and mucous retention cysts have been identified as possible causes of the condition.  

Sometimes air crew patients and air passengers challenge the dental surgeon in treating several flight related conditions as was the case with current patient, who ended up having removal of both his asymptomatic impacted mandibular molars making flight discomfort the main reason. According to the patient, the side effects were conveyed to him but his profession led him into deciding for extraction. Last decision always remains with the patient, the side effects were conveyed to him but his profession led him into deciding for extraction. Last decision always remains with the patient. However, the patient’s wants may sometimes disagree with it. In such situations, the patient should be referred for opinion to a specialist.  

If removal of a mandibular impacted third molar in close proximity of inferior dental nerve is deemed necessary, apart from the conventional surgical techniques, a new approach has been developed, in the form of coronectomy of the third molar without removal of the entire tooth. This technique, first described in 1989,  has the advantage of avoiding a longer and more invasive surgery along with sparing the mandibular nerve, which exempts the patients from unnecessary trauma. This procedure involves the removal of the crown of the third molar thus promoting and facilitating the eruption and movement of retained roots away from the inferior dental canal. Once the root portion of the tooth has erupted to a safe level above the inferior dental canal, it can be removed whenever required by a second surgery. The apparent undesirability of this procedure would definitely be, that of patient undergoing two surgeries including administration of local anesthetic; however it has the advantage of avoiding extreme effects on quality of patient’s life, along with refraining from probable general anesthesia.  

Here a debate also arises, igniting an argument, as to what would be the fate of the pulp tissue and the remaining roots which have been left inside the bone? Well the answer has been provided by research on retention of retained vital roots,  which states that retained roots remain vital and may in time get covered by osteocementum and bone. Therefore it is advised in literature, not to treat or medicate the retained root pulp after coronectomy.  

Methylcobalamin is a neurologically active form of vitamin B12, which has provided promising results in treatment of patients with various nerve injuries; however its effectiveness in all cases cannot be guaranteed. Besides it has disturbing side effects and therefore should be discontinued if patient reports any symptoms like hypersensitivity reactions, gastrointestinal problems in the form of nausea and vomiting or anorexia and diarrhea.  

Although the incidence of mandibular third molars in extreme proximity of inferior dental nerve is less, the clinician must keep in mind its possibility, especially if pre operative radiographs indicate a close relation. All cases of impacted mandibular third molars in close relation to the mandibular nerve must be referred for specialist management by oral and maxillofacial surgeon.  

In general practice cases of nerve injury, if report to the clinician, must be considered for a referral to a neurologist and specialist oral and maxillofacial surgeon for management. The reparative role of vitamin B12/methylcobalamin in nerve injuries should be further investigated.  

REFERENCES  