

LINGUAL NERVE DAMAGE DURING THIRD MOLAR SURGERY

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ABSTRACT

The aim of this study was to investigate the relationship of lingual nerve damage to the experience of the operator and anesthetics modality during lower third molar surgery. A total of 300 patients had surgical removal of lower third molars. Surgeries were done under local and general anesthesia. The patients were asked about any numbness of tongue immediately after recovery or on the next morning in case of indoor patients. In the follow up appointments on first, 3rd and seventh day, they were asked again about any numbness of the tongue or any improvement noted. The frequency of 6% of altered lingual sensation was found in this study. The care was taken to include even trivial alterations in sensation of the lingual nerve occurring in the immediate post-operative period or even if there was quick recovery. The lingual nerve damage was recorded high (10%) with the most junior operator. No direct link of nerve damage was found with anesthesia but frequency of nerve damage was noted high during general anesthesia i.e., 7.14%. It was concluded that the frequency of nerve damage was more when the experience of the operator was less.

Key Words: Lingual nerve damage, 3rd molar surgery, local and general anesthesia.

INTRODUCTION

Third molar may be partially or totally unerupted. Impacted third molar removal is one of the most commonly performed surgical procedure in oral and maxillofacial surgical practice. Atraumatic surgical tooth removal required extensive training, skill and experience in local anesthesia, sedation and general anesthesia.¹⁰

The teeth may be removed due to pain or for preventive measure to avoid crowding, impactions of other teeth and pericoronitis. To prevent complications impacted lower tooth should be removed earlier.

Injury of the lingual nerve can result in permanent numbness, loss of taste and dyesthesia of the anterior

two-thirds of the tongue on the side of the mandibular third molar removed, causing a lifetime distress.¹¹ The nerve injury may be temporary or permanent.⁴ The operator's seniority has a significant effect on the nerve injury. The choice of anesthesia for third molar removal has an indirect effect on the nerve injury.¹¹

METHODOLOGY

A total of 300 patients had lower third molars surgically removed during the period of four months. A Proforma was prepared containing the information to be recorded and distributed among different operators who carried out surgery of lower impacted wisdom teeth. These teeth were removed in Oral & Maxillofacial Surgery Department, Khyber College of Dentistry, Oral and Dental Hospital, Peshawar included indoor and outdoor patients. The information recorded was related to factors which were thought to influence the lingual nerve damage. These were; age, gender, operators (Professors, senior and junior registrars, senior and junior house officers, post graduates and undergraduates students, operation details (type of flap, bone removal, sectioning of tooth, types of instruments

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used, suturing, post-operative Investigation, altered lingual sensation, improvement of disturbed lingual sensation and type of anesthesia.

The patients were asked about any numbness of tongue immediately after recovery or on the next morning in case of indoor patients. In the follow up appointment on the first, 3rd and seventh day, they were asked again about any numbness of the tongue and any improvement if noted.

The collected data were analyzed using SPSS Version 16. The association between lingual nerve damage to the experience of the operator and anesthetics modality was tested using an χ^2 test with the probability level of 5%.

RESULTS

The frequency of lingual nerve damage was found to be less when operated by Professors and Associate Professors (3.6%). The lingual nerve damage among Assistant Professor and Registrar, Post Graduate Students, Dental practitioners and house surgeons was 4.54%, 6.6%, 7% and 10%, respectively as shown in table 1.

The chance of lingual nerve damage under general anesthesia is high as compared to the local anesthesia as illustrated in table 2.

The association between lingual nerve damage to the experience of the operator and anesthetic modality was found to be less than 0.05.

TABLE 1: LINGUAL NERVE DAMAGE ASSOCIATION TO OPERATOR'S SENIORITY

	Total cases	Altered lingual sensation	Percentage
Professors & Associate Prof.	30	1	3.6%
Assistant Prof & Registrar	100	5	4.54%
Post-graduate students	30	2	6.6%
Dental surgeons/ practitioners	110	7	7%
House surgeons	30	3	10%
P=0.03			

TABLE 2: LINGUAL NERVE DAMAGE ASSOCIATION TO ANESTHESIA

	Total cases	Altered lingual sensation	Percentage
General anesthesia	140	10	7.14%
Local anesthesia	160	8	5%
P=0.03			

DISCUSSION

Altered lingual sensation was 6% in this study. The care was taken to include even trivial alterations in sensation of the lingual nerve occurring in the immediate post-operative period and even when there was quick recovery. The depth of the impacted mandibular third molar and its lingual angulation are other factors which may affect the probability of nerve damage. A study done by Valmaseda¹³ to assess the risk of lingual nerve injury after surgical removal of lower third molars, concluded that anatomical factors such as lingual angulation of the third molar, surgical maneuvers such as retraction of the lingual flap or vertical tooth sectioning, and less experience of the surgeon increase the risk of lingual nerve damage, although permanent lesions seem to be very rare.¹³

The less the experience of the operator, the higher the chances of lingual nerve damage because of difficult surgical procedure. The lingual nerve damage may occur due to fully bony impacted lower third molar, extensive flap retraction for longer time. Similarly extensive bone cutting may lead to the nerve damage.

In some studies no statistical difference was found among the different operators and the frequency of impaired lingual sensation.²

There is no direct link between the choice of anesthesia i.e. local and general anesthesia. But the frequency of the nerve damage has been found higher under general anesthesia. It may be because there is no response from the patient under general anesthesia and soft tissues may be retracted more aggressively by operators resulting lingual nerve injury.

It has been reported in the literature that operating under general anesthesia increases the chances of lingual nerve damage.^{11,13} Some studies have reported the causes of altered lingual sensation due to administration of endotracheal intubation for non-oral procedure.¹⁴ It has been related to the stretching of soft tissues in the lower molar region or compression of nerve between pterygoid or between medial pterygoid and the ramus during intubation. In the present study although cases

were operated under general anesthesia, the frequency was lower.

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