

Case Report

Numbness and bleeding from the ear following inferior alveolar nerve block: report of a case

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ABSTRACT

The inferior alveolar nerve block is a Mandibular nerve block given to anesthetize the mandibular teeth. Due to its proximity to other nerves and muscles and salivary glands it has many complications if the technique in which it is given is wrong. IANB usually presents with mild or minimal complications following its administration. The complications that arise are usually reversible when the action of the local anaesthetic wears off. These complications are usually associated with improper technique and anatomical variations, which can be rectified there itself with slight modifications. This is a very rare complication which has been reported where the patient has experienced numbness of the auricle on the side of inferior alveolar injection which lasted for an hour. This is seen due to the accidental anesthetic injection to the auriculotemporal nerve resulting in numbness. To perform successful inferior alveolar nerve blocks it is mandatory to be familiar with anatomical landmarks. Proper technique can reduce the complications.

Keywords: IANB, Auriculotemporal nerve, Ear bleed, Faulty injection technique

INTRODUCTION

Administration of local anaesthesia is one of the most common procedure in oral and maxillofacial surgery. Inferior alveolar nerve block is usually safe for most procedures in the mandibular arch. This nerve block is technique sensitive, which may result in local complications. Systemic complications do not merely depend on the technique. Local anesthetics administered carefully and within recommended dosage limits have established an enviable record of safety.^{1,3} Although life threatening systemic reactions do occur, most adverse effects or complications are local and temporary. Localized responses to anesthetic injections are fairly common. Immediate local complications of local anesthesia include hematoma formation, tissue blanching, facial paralysis, diplopia, needle breakage, positive blood aspiration, and burning sensation on the injected site.² Momentary blanching of mucous membrane, intra-arterial

injections even after aspiration and ocular complications. Such as temporary blindness, ophthalmoplegia, diplopia, hysterical blindness, myosis and ptosis were also reported in many literatures.⁴ Also systemic complications are common on patients on cardiac medications.

Here we presented a case wherein the patient reported numbness of the ear and the surrounding area and bleeding from the external auditory meatus. Numbness of the ear and the surrounding area was reported in one literature while bleeding from the ear was not mentioned in any literature till now. There were reported instances of ear bleed following tooth extraction in the literature.

CASE REPORT

A 52 year old male patient reported to the department of oral and maxillofacial surgery with complaint of bleeding from the ear, numbness in and around the left ear region

and a blocked feeling in the ear canal after being administered an inferior alveolar nerve block for an endodontic procedure in the left side second molar tooth before 15 min. He was referred to us from the endodontics department following this complication. They informed that the patient made an abrupt movement following the administration of the nerve block, initially complaining of pain inside the left ear followed by numbness in and around the left ear, fullness in the ear canal and bleeding through the external auditory meatus. The patient showed visible signs of anxiousness following this event. On clinical evaluation of ear there was bleeding inside the ear canal, anaesthesia over the auricle and surfaces of the external ear including the tragus. The external auditory meatus was packed with a cotton roll which showed frank bleeding. On palpation patient was unable to identify touch or pain sensation extending from left lower lip to the skin of pre auricular region, tragus and pinna of the left ear.

The patient was initially reassured and informed about the transient paresthesia that happens as a complication of this particular nerve block. A cotton was placed in the left ear and bleeding arrested. The dental treatment was terminated for the day. The patient was made to wait in our department for a couple of hours until the effects of the local anaesthetic wore off. The anaesthesia in the ear and the surrounding area wore off. Patient was advised to take an ENT consultation before leaving, following which antibiotics were given so as to prevent any possible chance of middle ear infection. The patient recovered completely after two hours.

DISCUSSION

The auriculotemporal nerve is not usually anaesthetized when inferior alveolar nerve block is given. There are few instances where the auriculotemporal nerve is anaesthetized when a Gow gates technique is followed.³

There are three possible chances of anaesthesia of the auriculotemporal nerve following IANB. Variations in the location of auriculotemporal nerve and its communication with other cranial nerves could be one of the reason. The anatomic variation includes a low origin of the auriculotemporal nerve from the mandibular nerve trunk that is close to the inferior alveolar nerve. Presence of the connecting nerve branch with the inferior alveolar nerve could be also a reason for anaesthesia of area supplied by auriculotemporal nerve.⁴ Another possible reason for the anaesthesia of the auriculotemporal nerve is that the local anaesthetic agent spread via the masticatory space anaesthetising the inferior alveolar and the lingual nerves. Communication of the pterygoid space, with the auriculotemporal nerve and the pterygoid plexus may have caused the anaesthetic to reach a superior location than that was expected.^{5,6}

The auriculotemporal nerve has a close connection with the temporal branch of the facial nerve within the parotid

gland capsule. This could also be a reason why the numbness happened in the external surface of the ear.

Ear bleed is often considered as an irritating complication related to a traumatic event, such as a tooth extraction due to fracture of styloid process. In our case it happened following a nerve block which could again cause for anxiety in the patient. Ear bleed can be attributed to laceration in the anterior aspect of external acoustic meatus or in the ear drum. Injection technique would have inadvertently caused the laceration which caused the bleeding from the ear. This would have happened when the needle might have travelled superiorly in the vicinity of the parotid gland. There is a branch of the auriculotemporal nerve innervating the external auditory meatus. There could also be an associated neurovascular bundle. The needle striking this particular neurovascular bundle might have caused bleeding through the meatus, fullness of the ear and consequent anaesthesia in the external surface of the ear.

CONCLUSION

Numbness of the ear and bleeding from the external auditory meatus is a very rare complication which is evident from the number of literatures reported on the same. There is no relevant literature that showed bleeding from the ear following IANB. The symptom reversed once the effect of the local anaesthetic wore off.

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