

Treatment of Paresthesia due to Periapical Granuloma in a patient with Oral Sub-Mucous Fibrosis: Case Review

Dr. Arun Kumar Sharma, BDS, Absolute Dental Clinic, Delhi

Dr. Divya Dureja, MDS Periodontist, Delhi

Dr. Ishita Joshi, MDS Periodontist, Delhi

Corresponding Author: Dr. Arun Kumar Sharma, BDS, Absolute Dental Clinic, Delhi, India**Type of Publication:** Case Report**Conflicts of Interest:** Nil**Abstract**

The aim of this article is to describe a case of Paresthesia of Inferior alveolar nerve due to compression from a Periapical granuloma formed under mandibular 3rd molar. A detailed clinical history and a radiographic examination are the key to identify the cause of the paresthesia. A nerve compression can lead to paresthesia in most cases and relieving the compression would generally bring back the sensation eventually. Dental pathologies are one of the most common cause of mandibular nerve paresthesia followed by fractures.

Introduction

Paresthesia consists of numbness and loss of sensation which results from any type of neural injury [1]. Paresthesia in mandible can be attributed to many systemic as well as local etiological factors. Systemic factors usually consist of microbial infection, multiple sclerosis, lymphomas, diabetes etc., whereas local factors consist of mandibular fractures, cysts, tumors, infections like osteomyelitis, apical periodontitis, granulomas etc. [2,3]

For the diagnosis of paresthesia, we need correctly to evaluate the onset of the sensory alteration and its evolution as the nerve moves forward. A thorough dental and medical history is required to determine the systemic

involvement as well as to find the etiological factor. Radiographic analysis is also a key factor as for most of the mandibular cases, the cause can easily be seen in a radiograph. Periapical as well as panoramic radiographs are the first choice but if the etiology cannot be determined using these techniques then Cone Beam CT scan is the final option for diagnosis.

Case Report

A 54 years old male presented with numbness in the lower left quadrant of mouth and tingling sensation in left lower lip. Patient also complains of decayed teeth on the same side. Upon clinical checkup it was found that the mouth opening is severely decreased to almost half Figure 1. Further investigation revealed decayed Left mandibular Premolar, 1st Molar and 3rd molar. 2nd molar was missing due to which 3rd molar tilted mesially. Soft tissue examination revealed fibrotic bands on both sides of buccal mucosa presenting as oral submucous fibrosis Figure 2.



Figure 1: Restricted Mouth opening

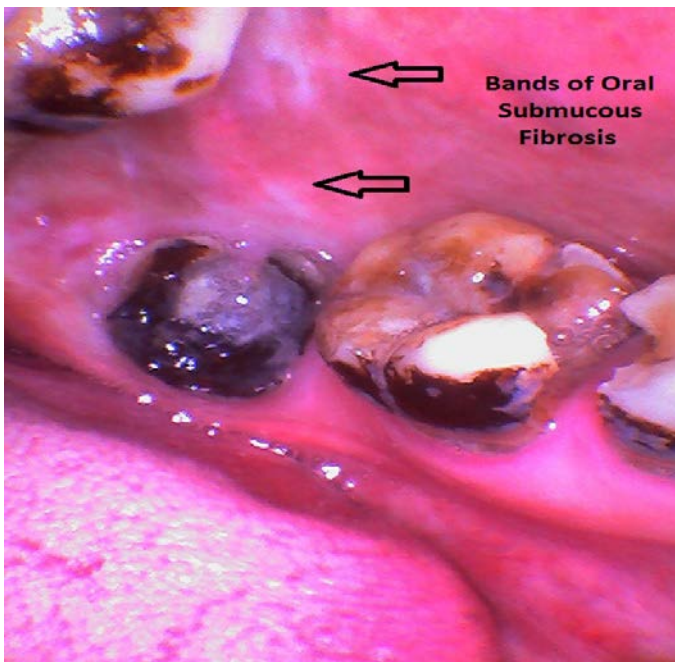


Figure 2: Fibrotic bands presenting Oral submucous fibrosis and Decayed 1st and 3rd Molars

Both panoramic and periapical Radiographs were taken, with the help of which we confirmed the differential diagnosis Figure 3 and Figure 4. Panoramic radiograph showed the evidence of nerve compression and periapical pathologies (Granuloma and Abscess).

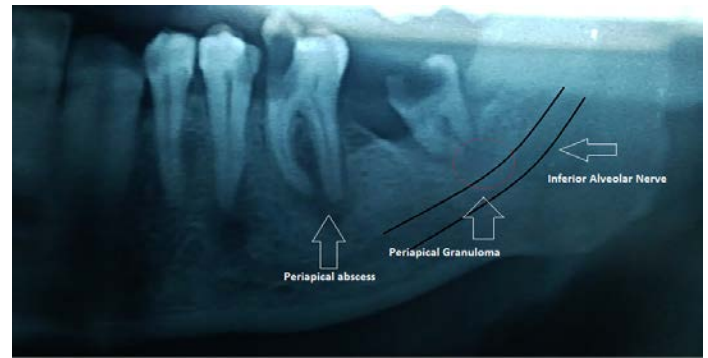


Figure 3: Periapical abscess under 1st Molar and Periapical granuloma under 3rd Molar



Figure 4: Panoramic radiograph confirming the nerve compression near Left mandibular 3rd molar area

Treatment planning included removal of etiological factor for paresthesia which was the third Molar with granuloma as well as 1st molar which had periapical abscess. Removal of these teeth was the 1st phase of the treatment. As per surgical guideline, extractions should start from posterior towards anterior teeth but due to restricted mouth opening the only way to reach 3rd molar was after taking out the 1st molar. Adequate access was obtained after 1st molar removal. Third molar was elevated and then the granuloma was curetted out of the bone in a single piece. The Figure 5. Demonstrate the removed teeth along with the granuloma.

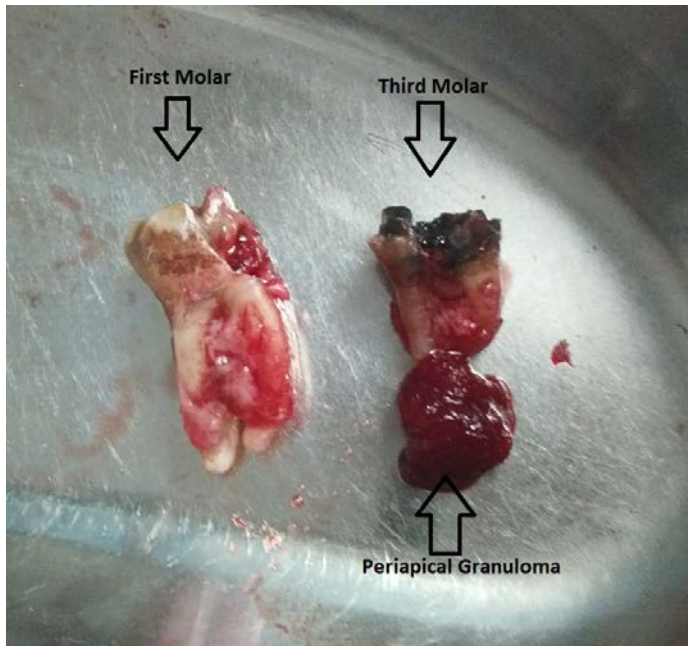


Figure 5: Extracted 1st Molar and 3rd Molar with granuloma.

After the surgical procedure, the numbness started to decrease within few weeks. After 2 months almost 90% of sensations returned and then patient was scheduled for treatment of oral submucous fibrosis.

Treatment of Oral submucous fibrosis included intralesional corticosteroid injections along with hyaluronidase injections. Patient also underwent physiotherapy for mouth opening exercises. Hyaluronidase is a fibrinolytic agent; it breaks down hyaluronic acid and decrease collagen formation. The treatment was regularly given for 10 weeks and was stopped after maximum result was obtained.

Discussion

Oral submucous fibrosis is a chronic, soft tissue disease. The most common geographical location of this disease is South east Asian countries. Areca nut chewing is one of the most common etiological factors for oral submucous fibrosis. A detailed history will provide the evidence and relation of the disease with the symptoms and signs. In the later stages of the disease, it presents as fibrotic bands located beneath an atrophic epithelium. These fibrotic

bands will eventually lead to restricted mouth opening which progresses as the disease grows.

Hyaluronidase is an enzyme that is fibrinolytic. It helps in the breakdown of hyaluronic acid, which lowers the intercellular cement substance's viscosity; it also lowers collagen formation with 1500 IU dosage for 10 weeks biweekly. A study used different intralesional injection regimens in patients, 4 mg biweekly of dexamethasone; 1500 IU biweekly of hyaluronidase with 1cc of lignocaine; 4 mg dexamethasone and 1500 IU hyaluronidase ;2cc placentex biweekly and found that there was maximum improvement in the combination of dexamethasone and hyaluronidase for seven weeks [4].

Conclusion

The aim of the article was to provide with the details of treatment of Paresthesia induced by granuloma. History of patient, clinical examinations and radiographic evidences were combined to reach a diagnosis and a treatment was planned accordingly. Timely removal of etiological factor was the prime factor in restoring the nerve sensations. After few months of exercises, intralesional corticosteroid and hyaluronidase injections the oral submucous fibrosis was treated. Other minor dental treatments were planned after restoration of nerve sensations and complete mouth opening.

References

1. Di Lenarda R, Cadenaro M, Stacchi C (2000) Paresthesia of the mental nerve induced by periapical infection: a case report. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 90: 746-749
2. Alves FR, Coutinho MS, Goncalves LS (2014) Endodontic-related facial paresthesia: systematic review. *J Can Dent Assoc* 80: e13.
3. Pogrel MA, Thamby S (1999) The etiology of altered sensation in the inferior alveolar, lingual, and mental

- nerves as a result of dental treatment. J Calif Dent Assoc 27: 534-538
4. Kakar PK., Puri RK, Venkatachalam VP. Oral submucous fibrosis-treatment with hyalase. J Laryngol Otol 1985; 99: 57-59.