



## Delayed Paraesthesia In A Menstruating Patient Following Surgical Extraction Of Wisdom Tooth: A Case Report

Dr. Giriraj Sandeep, Dr. Sushma S G, Dr. Ankesh Kumar Jain, Dr. Rohit S,  
Dr. Sathvik M, Dr. Narahari R  
Rajarajeswari Dental College And Hospital

\*Corresponding Author:  
Dr. Giriraj Sandeep

Department of Oral & Maxillofacial Surgery, Rajarajeswari Dental College And Hospital

Type of Publication: Case Report

Conflicts of Interest: Nil

### Abstract

**Background:** Paresthesia refers to a burning or prickling sensation that is usually felt in the hands, arms, legs, or feet, but can also occur in other parts of the body. The sensation, which happens without warning, is usually painless and described as tingling or numbness, skin crawling, or itching.

**Aim:** The aim of this case report is to know the reason for delayed paresthesia in a menstruating patient.

**Material and methods:** A 23 year old female with bilateral mandibular impacted teeth, surgical removal was done under Local anesthesia in 2 different appointments of 24 days apart. . Patient was operated for left lower Mandibular third molar (38) while menstruating based on patients interest and right lower Mandibular third molar was extracted later after 24 days.

**Results:** After 52nd post operative day of 38 extraction, patient reports back with Paresthesia of left lower lip.

**Conclusion:** Menstruation was the reason for delayed paresthesia. Complete curettage followed by copious irrigation was done. Post operatively antibiotics, analgesics Vitamin B12 supplements (Tab. NEUROBION FORTE once a day for 30 days) promoted nerve repair.

**Keywords:** Delayed Paresthesia, Surgical Removal, IAN (Inferior Alveolar Nerve), Mandibular Third Molar

### Introduction

Menstruations have been known to cause regular monthly oral health symptoms in some women. This worsens symptoms of gingivitis because of the increase in the hormones oestrogen and progesterin at that time of the month. Surgical procedures during this phase causes post operative complications ranging from delayed healing till septicaemia. Dental Paresthesia is loss of sensation caused by, local anesthetic administration before any dental/surgical treatment. Surgical Removal of an impacted Mandibular third molar tooth is always challenging for any oral & maxillofacial surgeon. One of these challenge is it may cause the risk of injury to the terminal branches of the trigeminal nerve, which provide sensory innervations to the oral and facial

regions.<sup>1</sup> Inferior alveolar or lingual nerve paresthesia is caused by the injury to the inferior alveolar or lingual nerve while administering local anaesthesia or while removing of wisdom tooth.<sup>2</sup> IAN/Lingual paresthesia can manifest as altered sensation to the lips, skin of the cheek and chin, tongue, intraoral mucosa, and teeth.<sup>3</sup> After surgery within a period of 4-8 weeks, 94% to 96% of inferior alveolar nerve injuries recover. Some injuries may be temporary and some injuries may be permanent, lasting longer than 4 to 6 months.<sup>4</sup> The altered sensation is usually noted by the patient on the day of surgery, once the effects of local anesthetic have resolved. However, on rare occasions, patients report onset of paresthesia a few days to months after the procedure. The biggest

difference between classic paresthesia and delayed paresthesia is that the former begins immediately after the procedure and healing is not guaranteed, while in delayed it occurs later, with restoration to original condition.<sup>3</sup> we present a rare case of delayed paresthesia of IAN after 52 days of surgical extraction of lower third molar.

### Case Report

A 23 old female reported to the Private Clinic in Bangalore in 2023 for Surgical removal of Bilateral Impacted Mandibular third Molars as per referred by the orthodontist for Orthodontic Treatment. After thorough clinical and radiographic evaluation patient was planned for surgical extraction under Local anesthesia in 2 different appointments of 10 days apart. Patient was operated for left lower Mandibular third molar (38) based on patients interest as it was an elective procedure. Surgical removal of Mandibular 38 was done on 7<sup>th</sup> January 2023 and Mandibular 48 was extracted on 16<sup>th</sup> February 2023. Patient had no relevant medical history except for the patient was menstruating on the day of surgical removal of 38.

The left lower third molar (38) reveals buccally placed with two separated roots approximating Mandibular canal (Pell & Gregory Class III Position B) whereas the right lower third molar (48) reveals horizontally impacted in relation to Mandibular second molar (47) with two separate roots approximating Mandibular canal (Pell & Gregory Class III Position B) according to the radiograph( Fig 1).

After informed consent was taken by the patient, under strict aseptic conditions patient was painted and irrigated intraorally with betadine normal saline followed by Inferior Alveolar nerve block, Lingual nerve block and long buccal nerve block in classical Inferior Alveolar nerve block technique and local infiltrations. Modified Wards incision placed followed by collar guttering by straight hand piece and sectioning of the teeth was done and removed in total (Fig-2).After through re exploring the socket and copious irrigation, the socket was primarily closed with 3-0 Black Braided Silk with No. 18 Suture needle. Post operative instructions were given followed by oral antibiotics, analgesics for a period of 5 days.

After 3 days of post operative patient reported back with pain at the operated site which showed clinically an inflamed gingiva at 38 region with no purulent discharge. Patient was advised to continue post operative instructions followed by regular visit to the hospital for local irrigation. During history taking for delayed healing patient informed that she was on day 1 of her menstruation on the day of surgery and pain increased in the surgical site after 3 days of extraction which was reduced after taking analgesics. After regular local irrigations with betadine and normal saline, surgical site showed signs of healing which was delayed. Hence suture removal was postponed upto 13th day after complete closure of the surgical site.

After a period of 24 days, the contralateral side surgical extraction of 48 was done under similar protocol. Post operative sequelae was uneventful. Suture removal was done on 7th day with good signs of healing, complete closure of surgical site.

After 52nd post operative day of 38 extraction, patient reports back with Paresthesia of left lower lip. Clinically, the surgical site showed inflamed gingiva with tiny pocket of around 3mm formed distal to 37 region. OPG was advised which showed marked radiolucency with unhealed bony socket with extending to the Mandibular canal inferiorly. Then patient was asked about her menstrual status which was negative on the day of her visit and explained about re exploration and curettage of the socket under LA with 1:80000 adrenaline. After patient approval planned procedure was executed.

After incision and reflection, socket was seen to be completely occupied with thick granulation tissue. Complete curettage was done followed by copious irrigation. Later closed primarily with BBS. Post operatively patient was prescribed for antibiotics ( Amoxicillin 500 Mg Potassium Clavulanate 125 MG twice a day with Tab. Metronidazole 400MG thrice a day, analgesics (Aceclofenac 100MG, Paracetamol 325MG, Serratiopeptidase 15 MG) followed by Vitamin B12 supplements (Tab. NEUROBION FORTE once a day for 30 days) to promote nerve repair.

Post operative sequelae was uneventful and showed signs of healing hence suture removal was done on day 10 with still existed paraesthesia of lower lip. Hence patient was advised to continue Vitamin B12

Supplements as advised for 30 days. On post operative day 26 of surgical re exploration, patient showed signs of recovering from paraesthesia. Hence advised to continue more for a period of 30 days. At

the end of total course of 60 days therapy with Vitamin B12 alone, patient was completely recovered from paraesthesia.

**Figure 1 - Preoperative radiographs demonstrating Bilateral Impacted lower third molar, which are approximating the inferior alveolar canal.**



**Figure 2- OPG 52nd day post operative of 38 region revealing radiolucency with unhealed bony socket with extending to the Mandibular canal inferiorly, whereas 48 shows satisfactory healing clinically and radiologically**



**Figure 3- Re exploration site showing granulation tissue on 52nd post operative day**



### Discussion

Menstruation plays an important role in the dental extraction socket healing. The purpose of the present study shows the difference in healing pattern in a single female patient who had undergone surgical removal of unilateral mandibular impacted third molar during menstruation and the contra lateral side surgical removal while non menstruating after a period of 24 days apart from the first surgery. Our first aim was to assess the pattern of healing in a split mouth. Second aim was to assess the duration of days taken for soft tissue healing over the socket. Third aim was to assess any incidence of dry socket in comparison during non menstruating.

In accordance with the first aim, healing was delayed while patient was on menstruation and was uneventful during non menstruation. Second aim to assess duration of days taken for soft tissue healing, Left surgical site (While Menstruating) had taken long duration for complete soft tissue closure of around 12 to 14 days whereas the right surgical site (Non menstruation) healed within 7 days. In accordance with third aim, there were no incidence of dry socket in any of the bilateral surgical site except delayed healing without any signs & symptoms of dry socket on left surgical site (while menstruating)

The most common complication after surgical removal of impacted third molars is AO. According to previous reports, the frequency of alveolar osteitis varies from 5% to 30%<sup>1</sup> But our case showed no

incidence of dry socket in any of the 2 sockets even while menstruation.

Mandibular 3rd molars have been found to be impacted with a frequency of 20-30 % with various indications for their removal for e.g.: pericoronitis, dental caries, associated pathologies or prophylactic etc. Mandibular 3rd molars surgical removal is associated with various complications including excruciating pain, marked oedema, trismus and sensory impairment of lingual and inferior alveolar nerves as well.<sup>6</sup>

The American Association of Oral and Maxillofacial Surgeons (AAOMS) have set the contributing risk factors that can be helpful in taking decision that when and which way to go for surgical removal. AAOMS and other health care systems have suggested that underlying pathology, infection and harm to adjacent structures as the indications for absolute removal.<sup>7,8</sup>

In the present study patient had paresthesia of IAN after 52 days of post operative surgery because the patient was menstruating on the day of surgery where as in the study by the Giuliani M et al<sup>8</sup> the compression of the alveolar nerve caused by both root infection and inflammatory response was the main cause of the paresthesia and it also mentioned that an altered tissue metabolism and bacterial toxins might also have been involved in this case. In this case the paresthesia developed immediately after the onset of the abscess, suggesting a close etiologic relationship. Even after this aggressive therapy



patient's symptoms did not completely recovered even after a 12 months.. Whereas in the present study patients symptoms healed after complete curettage was done followed by copius irrigation and patient was kept on antibiotics and Vitamin B12 supplements (Tab. NEUROBION FORTE once a day for 30 days) to promote nerve repair.

According the study by Morse D R et al<sup>9</sup> in the first case (Case A ) although the distal root canal was overfilled, if the overfill caused the paresthesia, it should have occurred soon after the obturation. Considering the paresthesia appeared almost 2 and 1/2 y following the obturation. The patient had cellulitis and the periapical lesion had expanded; and the expanding lesion caused an apparent deflection of the roof of the inferior alveolar canal .Paresthesia resolved within 2 weeks of the periapical surgery and antibiotic therapy. Whereas in second case (Case B) the paresthesia was relatively mild after treatment. The pretreatment periapical radiograph showed that the root apex and periapical lesion were not close to the mental foramen, and instrumentation at the initial visit was confined to the root canal, it is probable that microbes and their products spread beyond the apex to the region of the mental foramen.The most rapid improvement occurred following the administration of cephalixin.

Similar findings were published by Nagaraj M et al<sup>10</sup> where the inferior alveolar nerve injury was more frequent in horizontal and distoangular third molars. 4 days after surgery patients called for the neurosensory tests, all the patients were specifically questioned about sensibility. Where 3 patients had inferior alveolar nerve dysfunction on the operated site (6% of the surgical procedure). Most patients who subjectively reported neurosensory disturbance also exhibited objective impaired function of the nerve in all of these tests. A six week follow-up examination by objective methods demonstrated normal sensations in all the patients. Subjective evaluation was normal in all cases after six weeks.

## Conclusion

There are high chances of delayed wound healing even after a thorough surgical planning and thorough asepsis maintenance. In our study the reason for delayed wound healing was systemic factor menstruation. There is a clear demarcation of differences in socket healing in extraction during

menstruation and extraction while ot menstruating in the same patient operated by a same experienced surgeon. Patients with paresthesia in the distribution of the inferior alveolar nerve usually do not require surgical intervention but when there is complete loss of sensation postoperatively it should be evaluated radiographically<sup>11</sup>. After 3 months of injury, monitoring reveals little or no sensory recovery then referral is again indicated and further radiographic assessment is done and surgical exploration and 'decompression' of the nerve is considered if the canal is disrupted. In our study patient recovered from parasthesia in less than 60 days. Further studies are required to come for a new staged protocol to operate on a patient during menstruation.

## Reference

1. Meyer RA, Bagheri SC. Nerve injuries from mandibular third molar removal. *Atlas Oral Maxillofac Surg Clin North Am.* 2011 Mar;19(1):63-78. doi: 10.1016/j.cxom.2010.11.009. PMID: 21277501.
2. Ahmad M. The Anatomical Nature of Dental Paresthesia: A Quick Review. *Open Dent J.* 2018 Feb 22;12:155-159. doi: 10.2174/1874210601812010155.
3. Doh RM, Shin S, You TM. Delayed paresthesia of inferior alveolar nerve after dental surgery: case report and related pathophysiology. *J Dent Anesth Pain Med.* 2018 Jun;18(3):177-182. doi: 10.17245/jdapm.2018.18.3.177.
4. Sarikov R, Juodzbaly G. Inferior Alveolar Nerve Injury after Mandibular Third Molar Extraction: a Literature Review.*J Oral Maxillofac Res* 2014;5(4)
5. Noroozi AR, Philbert RF: Modern concepts in understanding and management of the "dry socket" syndrome: Comprehensive review of the literature. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 107:30, 2009Gokkulakrishnan Sadhasivam et al.2017, Sensory Impairment of The Lingual And Inferior Alveolar Nerve Following Removal of Impacted Mandibular Third Molar. *Int J Recent Sci Res.* 8(4), pp. 16793-16795. DOI: <http://dx.doi.org/10.24327/ijrsr.2017.0804.0216>
6. American association of oral maxillofacial surgeons:Report of a workshop on the management of patients with third molar teeth. *J Oral Maxillofac Surg* 2013; 52:1102.

7. National Institute of Dental Research. Removal of third molars. NIH consensus development program statement 1979; November 28-30; 2:65-68.
8. Giuliani M, Lajolo C, Deli G, Silveri C. Inferior alveolar nerve paresthesia caused by endodontic pathosis: a case report and review of the literature. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2001 Dec;92(6):670-4.
9. Morse DR. Infection-related mental and inferior alveolar nerve paresthesia: literature review and presentation of two cases. *J Endod.* 1997 Jul;23(7):457-60.
10. Nagaraj M, Chitre AP. Mandibular third molar and inferior alveolar canal. *J Maxillofac Oral Surg.* 2009 Sep; 8(3):233-6.
11. Loescher AR, Smith KG, Robinson PP. Nerve damage and third molar removal. *Dent Update.* 2003 Sep;30(7):375-80, 382.