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## Case Report

# Management of a case of trigeminal neuralgia in pregnancy with radiofrequency ablation of the nerve

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## ABSTRACT

WHO in a publication about neurological disorders states, “adequate pain treatment is a human right and it is the duty of every health care system to provide it.” Pregnancy being a hyperestrogenic state, is a predisposing factor, for Trigeminal Neuralgia. Trigeminal neuralgia is a debilitating condition that causes serious morbidity to the patient, thus hampering the daily activities of a patient. Thus, it becomes imperative to effectively manage and treat patients with trigeminal neuralgia. Various treatment regimens are being practised to manage trigeminal neuralgia. Carbamazepine is the drug of choice but being teratogenic, it can not be used during pregnancy. Radiofrequency ablation is another treatment modality for treatment of trigeminal neuralgia which is safer compared to the medical management.

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## 1. Introduction

Trigeminal Neuralgia (TGN), is this intense stabbing electric shock like pain that is caused by irritation of the trigeminal nerve and it's three branches namely ophthalmic (V1), maxillary (V2), mandibular (V3). The pain can be triggered by any action as minor as touching face, strong winds or brushing teeth.<sup>1,2</sup> Causes of TGN can be either primary, where irritation to the nerve is cause of pain or secondary where compression of nerve causes pain.

Normally the TGN affects only one side of the face, rarely however both sides can be involved. Patients with severe TGN may experience the attack several times a day, this may further complicate overall quality of patient life, and lead to other disorders such as depression, isolation and weightlessness.<sup>3</sup>

Management of TGN is with the use of antiepileptics such as carbamazepine, however the same cannot be used in pregnancy owing to its teratogenic effect on the fetus. Thus

posing a challenge in management of the same.<sup>4</sup>

## 2. Epidemiology

Older generation is more prone to TGN, however younger generation if affected are known to be more resistant to treatment. In gender divisions female are more prone to TGN than males.<sup>3,5</sup>

## 3. Aim

To report a rare case on management of pregnancy induced TGN.

## 4. Case Report

A 22-year old female primigravida with 12 weeks pregnancy presented with electric shock like pain on right half of her face, pain extending to the right eye and towards the jaw. Her pain was aggravated on moving face, chewing, or touching the face, her EEG and ECG reports were normal CT scan was done for this patient which

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also turned out to be normal and patient was diagnosed with primary Trigeminal neuralgia.<sup>2,6</sup> She has no history of similar episodes in the past nor does her family has any similar history. Her pain did not reduce on intensity, she was in severe agony with Visual Analogue Scale (VAS) of 9/10.<sup>7</sup> She was started on simple analgesic paracetamol 500mg 6hrly however pain did not subside, and she was started on tramadol 6hrly, but to no avail. It was then decided to undergo, Percutaneous Diagnostic Nerve Block with 5ml of 2% lignocaine using a peripheral nerve stimulator (PNS) of all three divisions of trigeminal nerve following which patient had good pain relief for 48 hrs but pain reappeared and patient was still unable to bear the pain her visual analogue scale was 7/10.<sup>7</sup> It became difficult for patient to eat, drink and perform her daily activities like brushing teeth next to impossible, her nutritional status also started deteriorating. In order to not compromise on her nutritional status due to pregnancy, decision was taken to perform percutaneous radio frequency ablation for this patient. In order to prevent the risks of exposure to radiation to the growing fetus, the procedure was done at 15 weeks of gestation, when the effects of radiation to fetus are minimal. During the procedure, the patient was covered with two layers of lead suit from upper chest to midhigh above and below the patient. Patient withstood the procedure and was discharged once patient was free of pain, and could easily perform her routine activities and started her regular diet. At 18 weeks of pregnancy, anomaly scan done for any fetal malformations, and no anomaly was detected. Patient was then on regular ANC follow up and her Visual Analogue scale was 3/10 on subsequent ANC visits.<sup>7</sup> At 38 completed weeks of pregnancy, patient was delivered by LSCS owing to cephalo-pelvic disproportion. Both mother and baby are doing well postdelivery.

**Table 1:**

	VAS Scale after 2 hours	VAS Scale after 48 hours
No treatment	9/10	
Routine analgesics	9/10	9/10
Percutaneous	3/10	7/10
Diagnostic nerve block		
Radioablation of the nerve	3/10	3/10

## 5. Discussion

Trigeminal neuralgia a painful condition that can be diagnosed with good clinical experience and imaging such as, CAT scan and MRI help in detection of trigeminal nerves. There are various causes of TGN, such as meningioma, pregnancy, granulomatous autoimmune disorders, lymphoproliferative disorders etc, TGN

is more susceptible in pregnant women.<sup>3</sup> Pregnant women have increase in the levels of estrogen that increase noiception thus activating extracellular signal-regulated kinase (ERK) in trigeminal ganglions.<sup>1,3,7</sup> The activation of ERK was examined in trigeminal nerves with help of immunohistochemistry and western blotting. Thus, pregnancy can stimulate or aggravate the highly complicated condition and making it difficult to manage as the medication of choice are teratogenic in nature. Several interventional therapies are available for TGN which are either surgical or percutaneous interventions. Pregnancy we do not prefer surgical interventions and hence, percutaneous interventions are used. Most common percutaneous intervention is radio frequency ablation of the gasserian ganglion.<sup>8</sup> Few precautions to be kept in mind are radiation exposure in fetus due to fluoroscopy, and gestation age of 8-15 weeks when risk of radiation is highest.<sup>9</sup>

## 6. Conclusion

Abundant literature and research about TGN have been published and researched about however not enough is known for TGN with pregnancy. Thus, management of such difficult situations becomes challenge. This case report about management of a case of TGN which caused serious complications to patient with pregnancy demonstrates that radiofrequency ablation of gasserian ganglion can be safe and effective in managing pain of trigeminal neuralgia.

## 7. Source of Funding

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## 8. Conflict of Interest

None.

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