

## Fothergill Disease Wincing Facial Pain or Toothache: Incidence of Tooth extraction in Fothergill Disease

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### ABSTRACT

**Background:** Fothergill Disease commonly cause pain in jaws. Here, incidence of unnecessary tooth extraction and simple dental treatment was noted while managing this disease, is presented.

**Methods:** A prospective review of 30 consecutive patients was done, who were treated for Fothergill disease at Department of Neurosurgery, PGMI / Lahore General Hospital Lahore from 2012 to 2013. The clinical presentation, dental surgeon evaluation, simple dental procedures and tooth extractions, were noted and analyzed.

**Results:** In this study, thirty Fothergill disease patients were identified in 18 females (60%) and 12 males (40%) patients, with a mean age at diagnosis of 56.0 years. Right facial pain was relatively more common in 17 (56.66%) patients. Lower jaw was involved more alone in (n = 6) with upper jaw in (n = 12). Despite the typical nature of facial pain a large no of patients (n = 12) 40%, visited dental surgeons. Simple dental procedures in the form of local injections or root canal was done in (n = 5), while tooth extracted in (n = 7)

**Conclusions:** All peridental area pain are not due to dental disease, Exact diagnosis and treatment of jaw pain is mandatory to avoid unnecessary dental treatment.

**Keywords:** Facial Pain, dental pain, tooth extraction.

### INTRODUCTION

Fothergill disease or tic dolouroux is excruciating, electric shock like, intermittent throbbing pain in one or more division of trigeminal nerve on one half of face. It mainly affects lower face and jaw, although can cause pain around nose and above eye.<sup>1-3</sup>

Trigeminal nerve is the 5th cranial nerve for sensation to face. Word Trigeminal derived from Latin words TRIA and GEMINUS meaning three and twin. As trigeminal nerve divided into three divisions when it leaves the brain. Irritation of trigeminal nerve cause TRIGEMINAL NEURALGIA.<sup>4</sup>

Almost 1.5 million people diagnosed as having TGN every year. It's a disease of old age mainly after 50 years of. More common in females than in males. Mostly tic dolouroux is due to misfire from nerve as a result of contact of nerve with a vessel or any space

occupying lesion or in MS.<sup>5,6</sup>

Trigeminal neuralgia can be typical classic sharp shooting pain, triggered by touching any area of skin or any specific activity. Atypical pain presents as constant burning sensation affecting wider facial area. TGN tends to run in cycles. There are periods of remissions in between the pain.<sup>7,8</sup>

The diagnosis of TGN is clinical. Radiological imaging seldom revealed the exact reason of irritation of nerve, unless TGN is due to MS or by space occupying lesion.<sup>9</sup>

TGN is mostly experienced along upper and lower jaw so people assumes that the pain is from dental source. It's the utmost responsibility of dentist to exactly diagnose the nature of pain and to avoid unnecessary dental procedures. Many times the dental caries may be incidental finding.

**OBJECTIVES**

To highlight the importance of exact diagnosis of facial pain, for unnecessary dental procedures and tooth extraction.

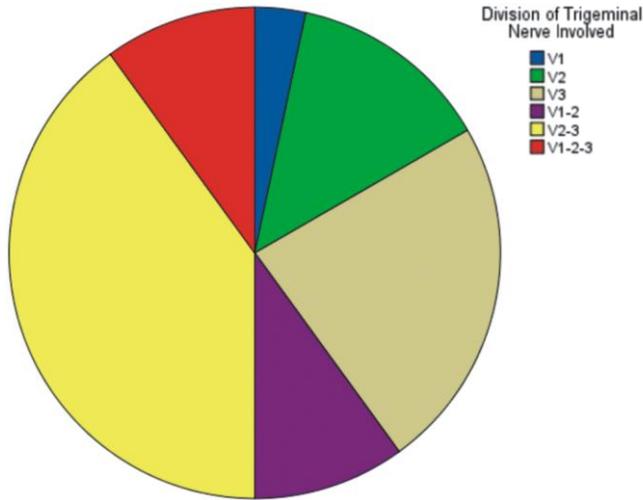


Fig. 1:

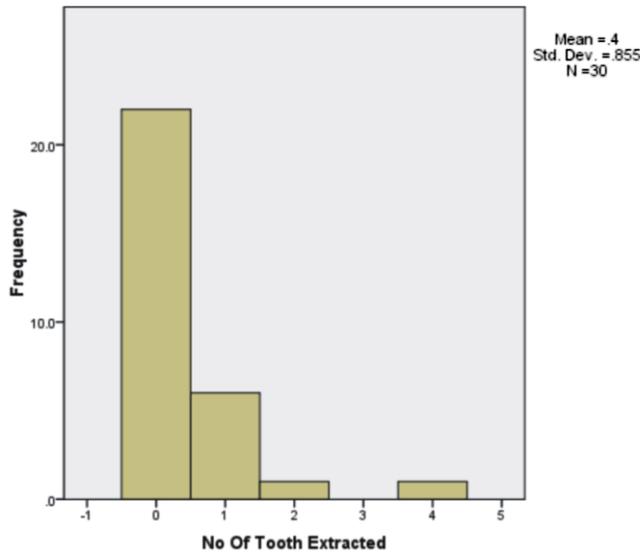


Fig. 2:

**MATERIALS AND METHODS**

After obtaining approval from the ORA (Office of research affairs), a prospective study was done to identify 30 consecutive patients treated for Fothergill Disease from 2012 to 2013. The clinical information including age, gender, presenting symptoms, medical history, side of face involved, division of trigeminal

nerve involved, previous dental consultation due to this facial pain, any dental procedure or tooth extraction by dentist due to this disease was analyzed. Statistical analysis of data was done using SPSS version 17. All the variables were identified. Demographic variables of the patients were analyzed using simple descriptive statistics. Mean and Standard deviation were calculated for age n no of tooth extracted. Frequency and percentages were determined for qualitative variables i.e. gender, side of face and division of nerve involved, dental consultation, simple dental procedures and tooth extraction.

**RESULTS**

Thirty Fothergill disease patients were identified in 18 female (60%) and 12 male (40%) patients, with a mean age at diagnosis of 56.0 (range 35 - 73) years. Fothergill disease presented as a severe intermittent current like pain mainly in lower face, individual involvement of lower jaw mandibular division in (n = 7). Maxillary division or upper jaw involved in (n = 4). Many patients presented with both upper and lower jaw pain, or involvement of both maxillary n mandibular division (n = 12). Right facial pain was relatively more common in 17 (56.66%) patients. Despite the typical nature of facial pain a large no of patients (n = 12) 40%, visited dental surgeons. Unfortunately many of them underwent simple dental procedures in the form of local injections or root canal (n = 5), while few very unlucky extracted their tooth (n = 7). Mainly they extracted one tooth before visiting neurosurgeon for definitive treatment. One patient extracted 2 teeth and most unlucky patient extracted four teeth before diagnosis of tic dolouroux.

**DISCUSSION**

Pain in teeth and peridental area is mostly of dental origin. However as the TGN can cause pain in jaws so frequently TGN patients visits dental surgeons and received unnecessary treatment.

In our setup, mostly the people are illiterate. Lack of education and poor socioeconomic status as well as bad cultural habits of eating beetals n tobacco leads to worst oral hygiene. Moreover the pain in peridental area further restricts cleaning, brushing and flossing.<sup>10</sup> No custom of regular dental care here. All these factors lead to extremely poor dental hygiene.<sup>11</sup>

We conducted a study on surgical management of trigeminal neuralgia, while collecting data it was

realized that most of the patients before arrival to neurosurgeon visited dentist for sharp shooting facial pain. We collected all information about their dentist appointment dental procedures and tooth extraction. Our main aim is to highlight the importance of exact diagnosis of trigeminal neuralgia to avoid unnecessary dental treatment.

In our study we found that mostly TGN is affecting females comparable to all literature available.<sup>12</sup> We found right facial pain more prevalent same as documented by Raskin.<sup>13</sup> Lower half of face was involved in most of the patients almost all the literature documented the same.<sup>2,3,14</sup>

In our study 12 (40%) patients visited dentist and underwent dental procedures including tooth extraction. Although all the patients have very classical tic douloureux. Basically pain has considerable impact on quality of life.<sup>15</sup> The unpredictable episodic pain forces patient to adopt unpredictable life style. Severe sharp shooting pain is not tolerable by patients and they want to get rid of that even they are ready to sacrifice their teeth. After failure of dental treatment finally they reached to neurosurgeons for appropriate management.

Fothergill disease is initially managed by medical therapy. No of excellent drugs are available in the market in the form of carbamazepine, oxycarbamazepine, baclofen, and gabapentine. Surgical treatment reserved after medical treatment fails or toxicity to medication developed.<sup>16-19</sup> Surgical treatment may be in form of neurectomy or injection in peripheral nerve. Mechano – compression, glycerol rhizotomy or radio-frequency rhizotomy of ganglion. Microvascular decompression of root entry zone in cerebellopontine angle is the treatment of choice in most of the cases. Stereotactic radiosurgery is another option of treating Fothergill disease.<sup>20-26</sup>

Simply to treat Fothergill disease is not difficult but yes its exact and timely diagnosis is important. Awareness of disease is not only recommended for public as well as for dentist.

## CONCLUSION

All peridental area pain are not due to dental disease, Exact diagnosis n treatment of jaw pain is mandatory to avoid unnecessary dental treatment.

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## REFERENCES

1. Mauskop A. Trigeminal neuralgia (tic douloureux). *J Pain Symptom Manage.* 1993 Apr; 8 (3): 148-54.
2. Zakrzewska JM, Linskey ME. Trigeminal neuralgia. *BMJ.* 2014; 348: g474.
3. Cheshire WP Jr. The shocking tooth about trigeminal neuralgia. *N Engl J Med.* 2000 Jun 29; 342 (26): 2003.
4. Burchiel KJ. Trigeminal neuralgia. In: *Conn's Current Therapy*, 1999: 948-50.
5. Devor M, Amir R, Rappaport ZH. Pathophysiology of trigeminal neuralgia: the ignition hypothesis. *Clin J Pain,* 2002 Jan – Feb; 18 (1): 4-13.
6. Burchiel KJ. Abnormal impulse generation in focally demyelinated trigeminal roots. *J Neurosurg.* 1980 Nov; 53 (5): 674-83.
7. Gronseth G, Cruccu G, Alksne J, Argoff C, Brainin M, Burchiel K, Nurmikko T, Zakrzewska JM. Practice parameter: the diagnostic evaluation and treatment of trigeminal neuralgia (an evidence-based review): report of the Quality Standards Subcommittee of the American Academy of Neurology and the European Federation of Neurological Societies. *Neurology,* 2008; 71 (15): 1183–1190.
8. Bagheri, SC; et al. Diagnosis and treatment of patients with trigeminal neuralgia. *Journal of the American Dental Association,* December 1, 2004; **135** (12): 1713–7.
9. Jensen TS, Rasmussen P, Reske – Nielsen E. Association of trigeminal neuralgia with multiple sclerosis: clinical and pathological features. *Acta Neurol Scand.* 1982 Mar; 65 (3): 182-9.
10. Ibrahim S. Trigeminal neuralgia: diagnostic criteria, clinical aspects and treatment outcomes. A retrospective study. *Gerodontology,* 2014; 31 (2): 89–94.
11. Law AS, Lilly JP. Trigeminal neuralgia mimicking odontogenic pain. A report of two cases. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 1995; 80 (1): 96–100.
12. Patten J. Trigeminal neuralgia. In: *Neurological Differential Diagnosis.* 2nd ed. London: Springer. 1996: 373-5.
13. Raskin NH. Trigeminal neuralgia, 2nd ed. 1988.
14. Eller JL, Raslan AM, Burchiel KJ. Trigeminal neuralgia: definition and classification. *Neurosurg Focus.* 2005 May 15; 18 (5): E3.
15. Zakrzewska JM, McMillan R. Trigeminal neuralgia: the diagnosis and management of this excruciating and poorly understood facial pain. *Postgrad Med J.* 2011; 87 (1028): 410–416.
16. Obermann M. Treatment options in trigeminal neuralgia. *Ther Adv Neurol Disord.* 2010; 3 (2): 107–115.
17. Spatz AL, Zakrzewska JM, Kay EJ. Decision analysis

- of medical and surgical treatments for trigeminal neuralgia: how patient evaluations of benefits and risks affect the utility of treatment decisions. *Pain*, 2007; 131 (3): 302–310.
18. Cruccu G, Gronseth G, Alksne J, Argoff C, Brainin M, Burchiel K, Nurmikko T, Zakrzewska JM, American Academy of Neurology S. European Federation of Neurological S AAN – EFNS guidelines on trigeminal neuralgia management. *Eur J Neurol*. 2008; 15 (10): 1013–1028.
  19. Jorns TP, Zakrzewska JM. Evidence – based approach to the medical management of trigeminal neuralgia. *Br J Neurosurg*. 2007 Jun; 21 (3): 253-61.
  20. Tatli M, Satici O, Kanpolat Y, Sindou M. Various surgical modalities for trigeminal neuralgia: literature study of respective long-term outcomes. *Acta Neurochir (Wien)*. 2008 Mar; 150 (3): 243-55.
  21. Asplund P, Blomstedt P, Bergenheim AT. Percutaneous Balloon Compression vs. Percutaneous Retrogasserian Glycerol Rhizotomy for the Primary Treatment of Trigeminal Neuralgia. *Neurosurgery*, 2015 Oct 13.
  22. Bender MT, Pradilla G, Batra S, See AP, James C, Pardo CA, et al. Glycerol rhizotomy and radiofrequency thermocoagulation for trigeminal neuralgia in multiple sclerosis. *J Neurosurg*. 2013 Feb; 118 (2): 329-36.
  23. Taha JM, Tew JM Jr. Treatment of trigeminal neuralgia by percutaneous radiofrequency rhizotomy. *Neurosurg Clin N Am*. 1997 Jan; 8 (1): 31-9.
  24. Olson S, Atkinson L, Weidmann M. Microvascular decompression for trigeminal neuralgia: recurrences and complications. *J Clin Neurosci*. 2005 Sep; 12 (7): 787-9.
  25. Sandell T, Eide PK. Effect of microvascular decompression in trigeminal neuralgia patients with or without constant pain. *Neurosurgery*, 2008 Jul; 63 (1): 93-9.
  26. Kondziolka D, Lunsford LD, Flickinger JC, et al. Stereotactic radiosurgery for trigeminal neuralgia: a multi-institutional study using the gamma unit. *J Neurosurg*. 1996 Jun; 84 (6): 940-5.

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