



Original Research Article

Trigeminal neuralgia: clinical features and therapeutic attitude at the Idrissa Pouye General Hospital in Dakar

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ABSTRACT

Objective: To study the characteristics of trigeminal pain and the treatments applied to this condition in the odontostomatology department of the Idrissa Pouye General Hospital in Dakar (Senegal).

Materials and Methods: This is a retrospective study, involving records of patients with trigeminal neuralgia who were followed in the odontostomatology department between January 2015 and June 2020. The inclusion criterion was any patient record containing complete information and presenting trigeminal neuralgia treated in the odontostomatology department. We used sociodemographic, clinical and therapeutic variables.

Results: Of the 52 patients, 70% were female. According to profession, half of the patients (49.9%) were unemployed. The pains described were mainly of the type of electric dump (42.3%) and strock stab (30.76%). Pain was triggered at a trigger point related to touch on trigger zone in 28.84% of cases, and spontaneous pain in 26.92% of cases. Trigeminal neuralgia affected the V1, V2 and V3 nerve. The duration of symptoms varied over one or more years. Carbamazepine was routinely prescribed in patients in this study in combination with vitamin B1B6B12. Depending on the intensity of pain, prednisone was also prescribed. Thirty-four patients were given alcohol. The pain subsided in the patients over a period of 1 month to 1.5 years.

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1. Introduction

Trigeminal neuralgia or "Trousseau's painful tic" belongs to the complex group of orofacial algæ. It is marked by the dazzling and disabling nature of the pain, which can last for years.¹ It is a rare condition with a low incidence of 5 new cases per year per 100,000 subjects.² The delay in consultation noted in Senegal is often due to self-medication and the practice of traditional medicine.³ Diagnosis is often difficult, due to the lack of knowledge of this painful neuropathic condition by some practitioners, particularly dental surgeons, which often leads to inappropriate and late treatment that is very detrimental to the patient.

It is characterized in its typical form by paroxysmal, intermittent, unilateral and strictly localized pain in one or more branches of the trigeminal gland. Carbamazepine constitutes a true diagnostic test by the disappearance of symptoms within the first hours of taking the drug.¹ It is probably due to a vascular-nervous conflict according to Han.⁴ The method of alcoholization of the affected V-branch is an alternative of choice in the treatment of trigeminal neuralgia given the frequent failures or reduced efficacy of the drug treatment, as it provides immediate and lasting sedation of the pain.⁴⁻⁶ The objective of this work was to study the characteristics of trigeminal pain and the treatments applied to this condition in the odontostomatology department of the Idrissa Pouye General

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2. Materials and Methods

This is a retrospective study, involving records of patients with trigeminal neuralgia who were followed in the odontostomatology department between January 2015 and June 2020 (5 years). We used sociodemographic (age, sex, occupation), clinical (pain characteristics) and therapeutic (medication, alcohol, follow-up) variables. Carbamazepine is a reference drug in the symptomatic treatment of trigeminal neuralgia. It is an anticonvulsant, anticholinergic drug that works by blocking voltage-gated sodium channels. Its half-life in plasma, when administered regularly, is on average 16 to 24 hours. The dosage depends on the clinical response of the patient. It has a lot of side effects at high doses. Thus, we had carried out a progressive prescription making it possible to define the dose necessary for the patient and to prevent the side effects of the first days caused by the drug. Carbamazepine is gradually increased to doses between 600 and 1200 mg per day. The injection of alcohol is performed after the ineffectiveness or failure of carbamazepine. The absence or reduction of pain is then observed for weeks or even months. Follow-ups are always necessary for months depending on the painful sedation.

The inclusion criterion was any patient record containing complete information and presenting trigeminal neuralgia treated in the odontostomatology department of the Idrissa Pouye General Hospital in Dakar during the study period. The criterion for non-inclusion was any file that was incomplete or poorly completed. Excel and SPSS 13.0 software were used to analyze the data, calculating frequencies, means, standard deviations, and percentages.

3. Results

3.1. Socio-demographic data

The mean age was 57 ± 15 years, with extremes at 26 and 84 years. [Figure 1] Of the 52 patients, 70% were female. [Figure 2] According to the profession, half of the patients (49.9%) were unemployed, followed by the trader (13.4%) and retired workers (13.4%). [Figure 3]

3.2. Clinical data

These are characteristics of pain. The pains described were mainly of the type of electric dump (42.3%) and stroke stab (30.76%). [Figure 4] Pain was triggered at a trigger point related to touch on the trigger zone in 28.84% of cases, and spontaneous pain in 26.92% of cases. [Figure 5] Trigeminal neuralgia affected the V2 nerve in 40.38% of cases, the V3 nerve in 23.07% of cases and both branches in 32.69% of cases. [Figure 6] The duration of symptoms varied over one or more years. [Figure 7]

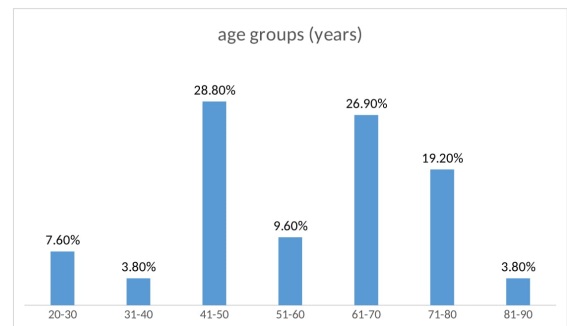


Fig. 1: Distribution of patients by age group

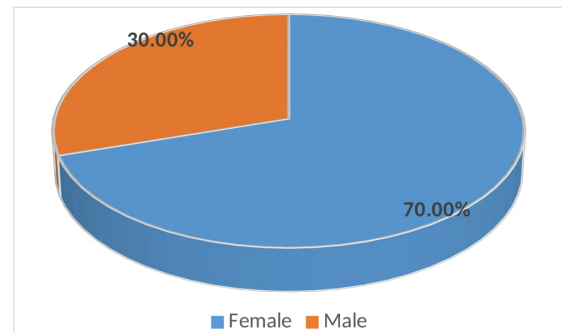


Fig. 2: Distribution of patients by sex

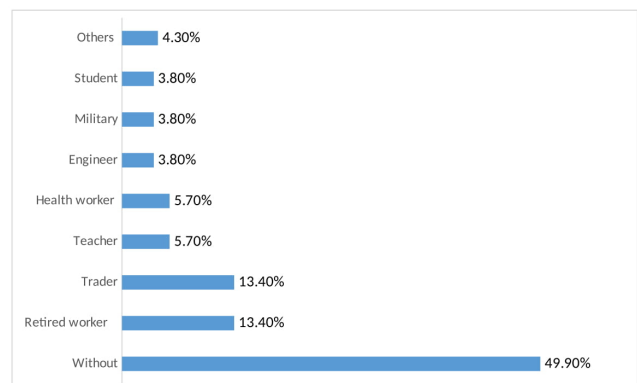


Fig. 3: Distribution of patients by profession

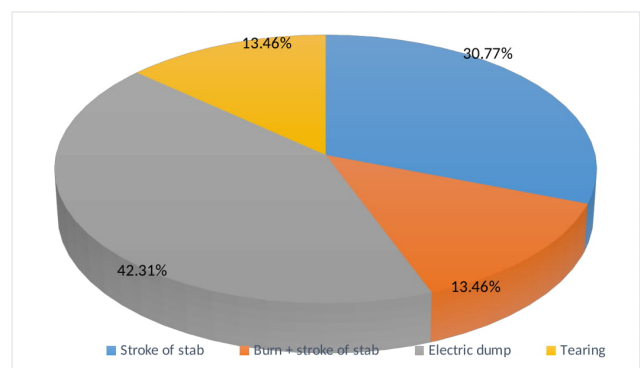


Fig. 4: Distribution of patients by type of pain

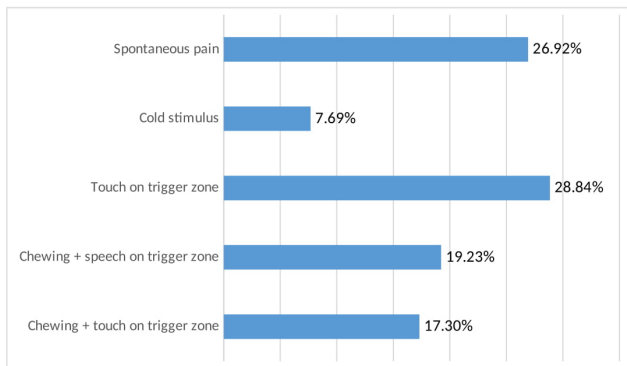


Fig. 5: Distribution of patients by the onset of pain

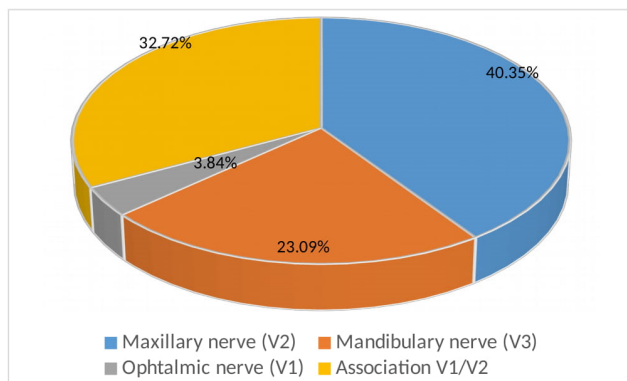


Fig. 6: Distribution of patients according to the affected branch of the V

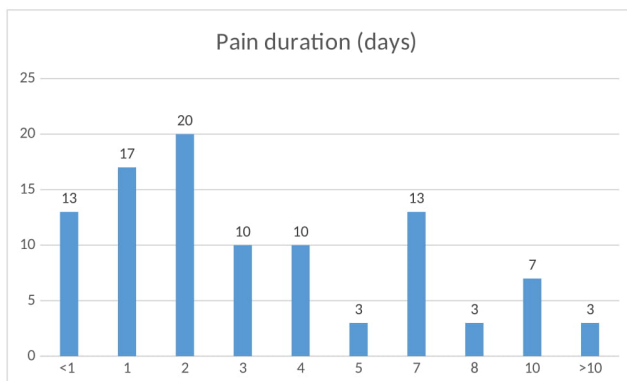


Fig. 7: Distribution of patients according to the duration of the pain

3.3. Therapeutic attitudes

Carbamazepine was routinely prescribed in patients in this study in combination with vitamin B1B6B12. Depending on the intensity of pain, prednisone was also prescribed. [Figure 8] Thirty-four patients (65.38%) were given alcohol. [Figure 9] The pain subsided in the patients over 1 month to 1.5 years. [Figure 10]

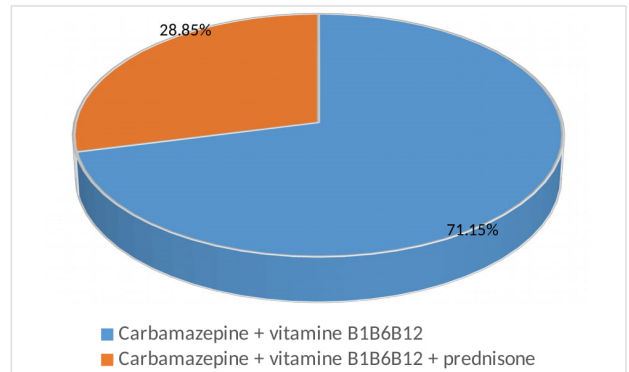


Fig. 8: Distribution of patients according to drug treatment

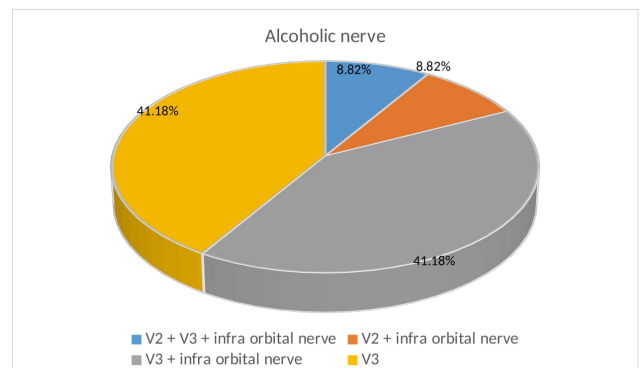


Fig. 9: Distribution of patients according to alcoholic branches of V

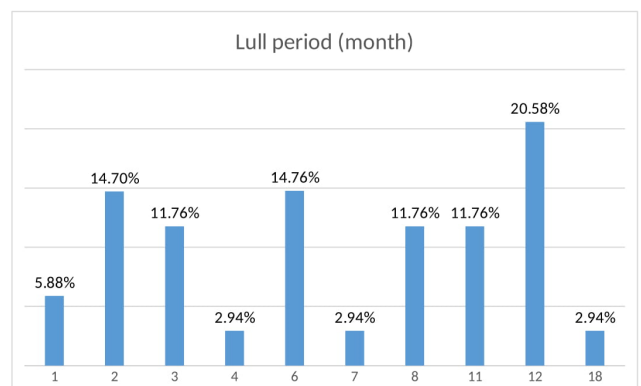


Fig. 10: Distribution of patients according to the lull after alcohol

4. Discussion

The essential limitation of this work concerns the type of study which is certainly transversal descriptive but retrospective on patient files with missing data not exploited. Tests concerning the intensities of pain could not be carried out with the DNA questionnaire.

Trigeminal neuralgia is a rare disease according to Donnet.¹ For this study, we only recorded 52 cases over 6 years. However, the number of recorded cases seems low because the department receives on average one case per month. It would seem that many cases were not indexed because of a lack of archiving of records or insufficient recording of information. Authors have reported a frequency of four to five new cases per year per 100,000 inhabitants.^{1,6} This corroborates the results of Dia-Tine, which recorded 27 cases over six years.³

In our series, trigeminal neuralgia mainly concerned elderly subjects with an average age of 57 ± 15 years. Between 41 and 70 years of age, trigeminal neuralgia affected 65% of patients. The work of Dia Tine and Maarbjerg corroborates these results with an average age of 54 ± 13 and 52.9 years respectively.^{3,7} According to Donnet, trigeminal neuralgia is a disease of the elderly with pain that most often appears after the age of 50.⁴ The onset of pain is rare after the age of 70.

Women were more represented (70%) in our study. Trigeminal neuralgia most often affects women. In fact, several authors report in their work that this pathology is predominantly feminine, with a ratio of three women to two men.¹⁻³ On the other hand, Omoregie in Nigeria found a male predominance with 61.5%.⁸

The majority of patients were non-professional. Socio-economic status may influence the onset of trigeminal neuralgia. However, a larger study has yet to be carried out on the subject, including a larger number of cases.

The pain described was always intense and of the type of electric shock (42.3%) or stabbing (30.76%) and was triggered in 36.53% of cases by power, speech, or the flush of a trigger zone.

Donnet describes an intense and paroxysmal pain, proceeding by painful flashes of electric discharges, sometimes crushing and tearing or burning.¹

The pain was triggered by a trigger zone linked to the touch of an area of the face innervated by the V2 or V3 in 96% of cases. Pain was spontaneous in 26.92% of cases. According to Maarbjerg, in 91% of cases, the pain was triggered by chewing, touching, tooth brushing, talking, and cold.⁷

In the present study, the maxillary nerve was affected in 40.38% of cases, compared to 23.07% for the mandibular nerve. In 32.69% of cases, an association of V2 and V3 was noted. The frequency of V2 involvement was found in several studies.^{3,9} These authors also found an association between V2 and V3 in about one-third of cases.

The time from the first consultation in the odontostomatology department ranged from a few months to more than 15 years, with an average of 4.6 ± 3.6 years.

Maarbjerg reported an average of 6.4 years, while Siegfried reported a delay of a few months to 27 years between the first manifestation and diagnosis.^{7,10} Patients preferred traditional treatment or self-medication. In some cases, they were treated by practitioners who were unable to diagnose or treat the disease effectively.^{3,7} This therapeutic wandering prolongs the time required to consult, diagnose and treat patients in appropriate care structures.

In the face of the presumption of trigeminal neuralgia, all patients received drug treatment with carbamazepine, which is the indicated diagnostic test. Indeed, carbamazepine allows the disappearance of symptoms within 48 hours and constitutes a genuine diagnostic test. For all patients who responded positively to carbamazepine treatment, the diagnosis of trigeminal neuralgia was confirmed.⁴

Vitamin B1B6B12 was systematically combined with carbamazepine in the present study as an adjunct to the treatment of algae with a neurological and neuromuscular component.¹¹

Prednisone was also combined with carbamazepine in 9 patients. Indeed, this drug is also used in neurology for its powerful anti-inflammatory effect.¹²

The failure or reduced efficacy of the drug treatment led us to carry out the alcoholization of the relevant V-branch as recommended by Yadav.¹³ This non-invasive therapeutic modality remains a widely practiced option in the Department of Odontostomatology at the Idrissa Pouye General Hospital in Dakar. It allows effective symptomatic treatment of V neuralgia by obtaining immediate and lasting sedation of the pain. It consists in performing absolute chemical neurolysis with alcohol of the trigeminal branch concerned by the neuralgia by a slow injection of 70° alcohol at the emergence of the nerve according to the appropriate local or locoregional anesthesia technique of the concerned area. For the maxillary nerve (V2), alcohol is injected into the suborbital nerve when it emerges from the suborbital hole: puncture point at the base of the wing of the nose, the needle (green, 21G, 60 mm) is oriented upwards and outwards in the direction of the external angle of the eye.¹³ As soon as bone contact occurs, inject 0.5 ml of anesthetic and look for the suborbital canal opening that will be catheterized as far as possible. Place the index finger at the level of the orbital cavity to feel the tip of the needle, as the suborbital canal may be dehiscent at this level 0.2 to 0.3 ml of alcohol can then be injected in a completely painless manner.¹³ For the chin nerve, alcohol can be injected at the level of the chin foramen. Thus 34 patients have given alcohol, 6 of them underwent V2 alcoholization at the suborbital foramen and the large round foramen and 14 underwent V3 alcoholization at the foramen chin or mandibular foramen (lingula).

After alcoholization, there was a lull period of 1 to 16 months in all patients. Repeated administration of alcohol does not reduce the effectiveness of this technique.^{14,15}

Yadav finds a duration of acalmia of 6 to 12 months.¹³ According to a study conducted by Han in 2017 on 465 patients who had undergone trigeminal nerve stem alcoholization, immediate relief was achieved at the first alcoholization in 99% of the patients.⁴ A second alcoholization was performed in 46.9% of the patients after a period of 36 to 51 months. Alcoholization thus provides pain relief for a considerably longer period. A second alcoholic drink makes it possible to prolong this period of calm. In this study, the lull period after alcohol consumption was from months to a year and a half. Fardy noted an average sedation period of 39 months for a first alcohol treatment and 37 months for a second alcohol treatment in the peripheral branches.¹⁶ Tiwari obtained sedations from 13 to 17 months after a first peripheral alcohol injection and from 8 to 11 months after a second injection in the mandibular foramen.¹⁷ Alcohol is certainly effective, but some authors have reported postoperative complications. McLeod noted complications such as pain, burns, edema or local infections in 4% of patients who had undergone peripheral alcohol treatment.¹⁴ These same complications were minimal (0.73%) in Fardy's study with the retrogasser technique. No cases of complications were noted after alcoholization.¹⁶

5. Conclusion

Trigeminal neuralgia is a disabling condition whose diagnosis is based on the characteristics of the pain felt by the patient and described during the interview. Taking carbamazepine relieves the patient but decreases its effectiveness.

In the long term. Alcohol has given good results and remains the only alternative while awaiting the development of neurosurgical treatment in Senegal.

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