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<1>
Unique Identifier
25000161
Status
MEDLINE
Authors
Wright E; Evans J.
Authors Full Name
Wright, Edward; Evans, James.
Title
Oral pre-trigeminal neuralgia pain: clinical differential diagnosis and descriptive study results.
Source

AIMS: To better quantify oral pre-trigeminal neuralgia (PTN) symptoms, attempt to identify PTN symptoms that could reliably differentiate between PTN and odontogenic tooth pain, and determine whether an anesthetic test would reliably differentiate these disorders.

METHODOLOGY: This was accomplished through a survey of symptom recall for 49 trigeminal neuralgia patients who had PTN tooth and/or gum pain.

RESULTS: The variability of oral PTN symptoms, factors that worsened or improved them, and how dental anesthesia affected them, explain the reason for variations found in the literature. A throbbing pain quality is not in the literature, but present for 63% of respondents.

CONCLUSIONS: No specific PTN symptom would reliably differentiate PTN from odontogenic tooth pain. The results also suggest that an anesthetic test would not be totally reliable for differentiating these disorders. A protocol is provided that should help practitioners identify the tooth pain source when there is no dental pathology.

Publication Type
Journal Article.
Date Created
20140708
Year of Publication
2014

<2>
Unique Identifier
22925627
Status
MEDLINE
Authors
Shiiba S; Tanaka T; Sakamoto E; Oda M; Kito S; Ono K; Wakasugi-Sato N; Matsumoto-Takeda S; Seta Y; Imamura Y; Nakanishi O; Inenaga K; Morimoto Y.

Institution
Shiiba,Shunji. Department of Control of Physical Functions, Kyushu Dental College, Kitakyushu, Japan.
Tanaka,Tatsurou. Department of Oral Diagnostic Science, Kyushu Dental College, Kitakyushu, Japan.
Sakamoto,Eiji. Department of Control of Physical Functions, Faculty of Dentistry, Kyushu University, Fukuoka, Japan.
Kito,Shinji. Department of Oral Diagnostic Science, Kyushu Dental College, Kitakyushu, Japan.
Ono,Kentaro. Department of Oral Bioscience, Kyushu Dental College, Kitakyushu, Japan.
Matsumoto-Takeda,Shinobu. Department of Oral Diagnostic Science, Kyushu Dental College, Kitakyushu, Japan.
Seta,Yuji. Department of Oral Diagnostic Science, Kyushu Dental College, Kitakyushu, Japan.
Imamura,Yoshiki. Department of Oral Diagnostic Science, Nihon University School of Dentistry, Tokyo, Japan.
Nakanishi, Osamu. Department of Control of Physical Functions, Kyushu Dental College, Kitakyushu, Japan.

Inenaga, Kiyotoshi. Department of Oral Bioscience, Kyushu Dental College, Kitakyushu, Japan.

Morimoto, Yasuhiro. Department of Oral Diagnostic Science, Kyushu Dental College, Kitakyushu, Japan; Center for Oral Biological Research, Kyushu Dental College, Kitakyushu, Japan. Electronic address: rad-mori@kyu-dent.ac.jp.

Title
Can the neurovascular compression volume of the trigeminal nerve on magnetic resonance cisternography predict the success of local anesthetic block after initial treatment by the carbamazepine?

Source

Abstract
OBJECTIVES: Whether NVC volume on magnetic resonance (MR) cisternography might be related to the success of local anesthetic block by tetracaine (TNB) as an additional treatment after carbamazepine (CBZ) treatments in patients with trigeminal neuralgia (TN) was evaluated.

STUDY DESIGN: Detectable NVC volumes were measured from MR cisternography in 65 patients with TN treated by TNB after CBZ treatments. The correlation between the success of TNB and the NVC volume or the improvement in pain by CBZ was evaluated retrospectively.

RESULTS: A significant difference was found between the improvement in pain by CBZ and the success of TNB, but not between NVC volume on MR cisternography and the success of TNB.

CONCLUSIONS: The present results suggest that the success of CBZ as initial treatment, but not NVC volume on MR cisternography, may be a significant predictor of the success of TNB as additional therapy in patients with TN.

Zhu, Shuangxi. Department of Oral and Maxillofacial Surgery, The First Affiliated Hospital, Sun Yat-sen University, Guangzhou, China.

Title
Pterygopalatine fossa segment neurectomy of maxillary nerve through maxillary sinus route in treating trigeminal neuralgia.

Source

Abstract
PURPOSE: To explore an effective surgical treatment for pain in the distribution area of the maxillary branch of trigeminal nerve (TN).

MATERIALS AND METHODS: Twenty-six patients with pain in the distribution of the maxillary branch of TN were followed up after they had undergone pterygopalatine fossa segment neurectomy of maxillary nerve through maxillary sinus route.

RESULTS: In all cases, the pain initially resolved after operation, with anaesthesia or paraesthesia in the operated side of the maxillary nerve-distributed area. After a mean follow-up period of 24 (range 3-36) months, 19 (73.08%) of the 26 patients had an excellent response, 5 (19.23%) had a good response, 2 (7.69%) had a fair response, and none (0%) had a poor response. One patient had a recurrence with palatal pain 3 months after the operation.

CONCLUSIONS: The maxillary sinus route can provide a clear vision for sectioning of the maxillary nerve. This new surgical technique has proven to be safe and effective. It provides another option for the weak elderly who are intolerant of craniotomy or patients who have contraindications for craniotomy when radiofrequency thermocoagulation (RFT)
percutaneous glycerol neurolysis (PGR) treatment is not possible. Copyright 2013 European Association for Cranio-Maxillo-Facial Surgery. All rights reserved.

**Title**

Trigeminal neuralgia – latest 20 articles

**Abstract**

Trigeminal neuropathic pain affects millions of people worldwide. Despite decades of study on the neuronal processing of pain, mechanisms underlying enhanced pain states after injury remain unclear. N-methyl-D-aspartate (NMDA) receptor-dependent changes play a critical role in triggering central sensitization in neuropathic pain. These receptors are regulated at the glycine site through a mandatory endogenous co-agonist D-serine, which is synthesized by astrocytes. Therefore, the present study was carried out to determine whether astrocytes are involved, through D-serine secretion, in dynamic mechanical allodynia (DMA) obtained after chronic constriction of the infraorbital nerve (CCI-IoN) in rats. Two weeks after CCI-IoN, an important reaction of astrocytes was present in the medullary dorsal horn (MDH), as revealed by an up-regulation of glial fibrillary acidic protein (GFAP) in allodynic rats. In parallel, an increase in D-serine synthesis, which co-localized with its synthesis enzyme serine racemase, was strictly observed in astrocytes. Blocking astrocyte metabolism by intracisternal delivery of fluorocitrate alleviated DMA. Furthermore, the administration of D-amino-acid oxidase (DAAO), a D-serine-degrading enzyme, or that of L-serine O-sulfate (LSOS), a serine racemase inhibitor, significantly decreased pain behavior in allodynic rats. These results demonstrate that astrocytes are involved in the modulation of orofacial post-traumatic neuropathic pain via the release of the gliotransmitter D-serine.

**Source**


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**Title**

Anatomical study of the relatively safe needling angle of minimally invasive treatment for trigeminal neuralgia.

**Abstract**

Trigeminal neuralgia affects approximately 182 in 100,000 Chinese, and the number keeps increasing these years. The role of surgery for patients with medically refractory trigeminal neuralgia is well established. Computed tomographic images provided by the First Affiliated Hospital of Jilin University were used to reconstruct the 3-dimensional skull models. We measured the positional relationship between oval foramen and trigeminal impression to analyze the relatively safe puncture angle for the internal carotid artery protection. Point O, A,
and B are the projection of 3 points on plane C; the center of oval foramen, the medial edge of trigeminal impression, and the lateral edge of trigeminal impression, respectively. The length of OA was 11.02 mm (95% confidence interval [CI], 10.64-11.40 mm), and OB was 13.59 mm (95% CI, 13.20-13.98 mm). Angle study included the angle contained by the median sagittal plane and OA or OB, angle alpha or beta, and the angle contained by OA and OB, angle . Angle alpha was 50.74 degrees (95% CI, 48.60-52.88 degrees). Angle beta was 6.62 degrees (95% CI, 4.02-9.22 degrees). Angle was 44.12 degrees (95% CI, 41.95-46.29 degrees). So the ideal horizontal angle between the needle axis and the median sagittal plane ranges between angle alpha and beta, 6.62 to 50.74 degrees, and the best puncture angle should be 33.18 degrees. The depth of needling insertion after entering the oval foramen should be less than the minimum length of the 95% CI of OA and OB, 10.64 mm.

Abstract

Trigeminal neuralgia is the worst pain that human beings have ever experienced. Surgery might be the only solution for some patients because no other way can relieve their severe pain. They experience intolerable pain before operation and during radiofrequency thermocoagulation of the gasserian ganglion. The aim of the current study was to prospectively evaluate the preoperative and perioperative analgesic effects of preoperative single peripheral nerve block. Sixty patients with classic trigeminal neuralgia who were scheduled to undergo radiofrequency thermocoagulation of the gasserian ganglion were randomly divided into a control group (n = 30) and a nerve block group (n = 30). Patients in the nerve block group were treated with single peripheral nerve block using 1% lidocaine and betamethasone on the day of admission. Average pain, worst pain, quality of sleep, and analgesia satisfaction were evaluated before surgery. The incidence and intensity of episodic pain were determined before the needle reached the gasserian ganglion. Compared with the control group, a single peripheral nerve block significantly attenuated average pain (P < 0.01) and worst pain (P < 0.01), ameliorated the quality of sleep (P < 0.01), and increased analgesia satisfaction (P < 0.01). Moreover, patients in the nerve block group experienced a decrease in incidence (P < 0.01) and intensity (P < 0.01) of episodic pain during surgery as compared with the participants in the control group. These
results demonstrate that a single peripheral nerve block may be an effective way to relieve preoperative and perioperative intolerable pain of trigeminal neuralgia.

INTRODUCTION: In trigeminal neuralgia, when drug treatment proves ineffective, other management options must be considered. In this context, conventional radiofrequency of Gasser's ganglion is a safe and effective alternative.

MATERIAL AND METHODS: We describe 5 patients with long-evolving trigeminal neuralgia subjected to conventional radiofrequency according to the Sweet technique, with a follow-up of two years.

RESULTS: Pain relief was complete after two months in all cases. One patient suffered an unexpected episode of nausea, vomiting and foul odor sensation that subsided after three days of rest and drug treatment. Three patients described non-painful hypoesthesia in the region of the treated nerve branch that subsided within three months. The patients remained free of symptoms over long-term follow-up. In one case the same radiofrequency technique had to be repeated after 21 months because of the reappearance of symptoms in the same zone, followed by immediate pain relief.

CONCLUSIONS: In our series of patients trigeminal neuralgia was not controlled by drug treatment, and conventional radiofrequency targeted to Gasser's ganglion proved very effective, with no major complications.

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Pain intensity and psychosocial characteristics of patients with burning mouth syndrome and trigeminal neuralgia.


**Abstract:**
This study compared pain intensity and psychosocial characteristics between patients with burning mouth syndrome (BMS) and those with trigeminal neuralgia (TN). Data from 282 patients with BMS and 83 patients with TN were analyzed. Patients reported duration of illness: duration < 6 months was defined as acute illness and > 6 months as chronic illness. Present pain intensity and worst pain intensity during the past 6 months were reported using a 0-10 numeric rating scale (NRS). In addition, depression and somatization scores were evaluated on questionnaires. Patients with chronic BMS reported significantly higher pain intensity and had worse psychosocial characteristics than did those with acute BMS. Pain intensity was higher in TN patients than in BMS patients, although neither pain intensity nor psychosocial characteristics significantly differed between patients with acute and chronic illness. Logistic regression analysis of BMS and TN patients revealed that the odds ratio for worst pain was significantly lower for BMS patients than for TN patients and that the odds ratio for somatization score was 3.8 times higher in BMS patients. These findings suggest that BMS patients may require pain control targeting the central nervous system or psychosocial characteristics.

**Publication Type:** Comparative Study. Journal Article. Research Support, Non-U.S. Gov't.

**Date Created:** 20121211

**Year of Publication:** 2012
10,000 person-years in comparison subjects. Cox proportional analysis revealed that the adjusted hazard ratio (HR) of TN during the 5-year follow-up period for subjects with CP was 1.65 (95% CI = 1.34-2.03) times higher than that of comparison subjects. However, the study subjects who had undergone a gingivectomy or periodontal flap operation did not have a higher adjusted risk of TN than comparison subjects (HR = 0.93, 95% CI = 0.54-1.61).

CONCLUSION: Our study detected a greater risk for TN among patients with CP than matched comparison subjects.

CASE REPORT: A 64-year-old patient with a severe cervical pain on the left side was evaluated with no defined diagnosis. During physical examination, an elongated styloid process could be palpated and with CT scan image, the Eagle's syndrome diagnosis was done. The patient was successfully submitted to surgical resection of the elongated styloid process on the left side by an extraoral-cervical approach. After 6 months follow-up, the patient referred no symptom after the surgical treatment.

CONCLUSION: The extraoral/cervical approach is a safe alternative that achieves adequate treatment of Eagle's syndrome.

OBJECTIVE: To describe the clinical characteristics and treatment of trigeminal neuralgia (TN) in a group of Thai patients.
MATERIALS AND METHODS: Records of 188 patients with TN were reviewed retrospectively for patient demographics, the characteristics of the pain and treatment modalities.

RESULTS: Of the 188 patients, 37.2% were men and 62.8% were women. The peak incidence (46.8%) was in the age range of 50-69 years. Pain occurred on the right side of the face more often than on the left (1.8:1). The mandibular division of the trigeminal nerve was the most frequently affected (30.3%), followed by the combined maxillary and mandibular divisions (29.3%) and the maxillary division alone (25%). The majority described their attack as a sharp pain (77.6%), and the most common primary locations were at previous extraction sites (40.5%). The most common triggers were chewing (61.2%) and speaking (47.3%). Carbamazepine was the most common prescribed drug (76.1%) for the initial treatment. Combination drug therapy was introduced when the monotherapy failed to control the pain. Surgical intervention was the alternative choice of treatment in refractory cases.

CONCLUSION: TN affected women more than men, and this disorder occurred most frequently in patients aged 50 years and older. The mandibular division of the trigeminal nerve was most commonly involved. Copyright 2011 The Gerodontology Society and John Wiley & Sons A/S.

Use of single- and multi-drug regimens in the management of classic (idiopathic) trigeminal neuralgia: an 11-year experience at a single Sri Lankan institution.

Source

Abstract
AIM: The aim of this retrospective study was to evaluate the outcome of medical treatment of classic trigeminal neuralgia and to assess the factors affecting the choice of drug regimen (single or multiple), and the duration of treatment for pain control.

METHODS: A total of 260 consecutive patients were included in the study. Sixty-one patients with less than 6 months' follow up were excluded. All patients were treated with carbamazepine alone or in combination with other drugs. The dosage was adjusted according to the level of pain control and side-effects.

RESULTS: Treatment was terminated in 99 patients (49.7%) after a mean follow-up period of 36.46 months (standard deviation: +/-26.5). Of these, 39.4% were on a single drug. Carbamazepine was the drug used in 36 patients. The rest (61%) needed various combinations of drugs. One-hundred patients (50.3%) continued with medical treatment during the follow-up period. Of these, 67.4% were on multi-drug therapy.

CONCLUSION: The present study showed that the administration of multidrug regimens is a useful alternative in controlling trigeminal neuralgia in patients who are unable to tolerate higher doses of carbamazepine. Age, sex, ethnicity, and the side of affliction did not have a significant influence on the choice of drug regimen and the duration of treatment for pain control. Copyright 2011 Blackwell Publishing Asia Pty Ltd.
The aim of this article is to review the clinical, pathophysiological, and therapeutic aspects of traumatically induced trigeminal nerve pain. We introduce a new and, in our view, more accurate terminology: peripheral painful traumatic trigeminal neuropathy (PPTTN) to define this patient group. The proposed pathophysiology of PPTTN is largely based on studies in spinal nerve injury models. However, trigeminal nerve injury studies have shown some subtle differences in response to physical and inflammatory insults, and these are discussed. The treatment of painful neuropathies is difficult and carries a poor prognosis. Based on the available literature on efficacy and side effects, we propose a treatment algorithm for traumatic trigeminal neuropathies. Copyright 2011 John Wiley & Sons A/S.

AIMS: To field-test carefully designed criteria for pain following trigeminal nerve trauma. METHODS: In order to characterize the clinical phenotype, posttraumatic pain patients were studied and compared with classical trigeminal neuralgia patients (CTN, defined according to the International Headache Society's criteria). Based on etiology and features, trigeminal pain following trauma was defined as "peripheral painful traumatic trigeminal neuropathy" (PPTTN). Data were analyzed with t tests, ANOVA, chi-square, and regression analyses.
RESULTS: A total of 145 patients were included: 91 with PPTTN and 54 with CTN. Findings indicated that PPTTN criteria are clinically applicable in the detection and characterization of relevant cases. In contrast to accepted characteristics for PPTTN, the observed profile included both continuous and paroxysmal pain that was stabbing and/or burning. The quality, duration, and intensity were significantly different from the CTN patients (P < .05). PPTTN was consistently accompanied by trigeminal sensory abnormalities (96%) that were mostly allodynia, hyperor hypoalgesia, and only 1% of the PPTTN cases had anesthesia.

CONCLUSION: Overall, the proposed PPTTN criteria have proven to be clinically useful. In view of these results, modified PPTTN diagnostic criteria are proposed for use in future research.

OBJECTIVES: Trigeminal neuralgia (TN) is a rare form of neuropathic facial pain characterised by severe paroxysmal pain in the face. The treatment for trigeminal neuropathic pain disorder continues to be a major therapeutic challenge, as relief provided by medical therapy generally decreases over time. When medical therapy fails either due to poor or diminishing responses to drugs or to unacceptable side effects, peripheral intervention or surgical management of TN should be considered.

STUDY DESIGN: Fourteen patients (eight men and six women) who were not responsive to further medical treatment and who were diagnosed with TN previously at other health centres were selected for treatment. For this purpose, the affected nerve was infused with 60 mL (1 mL h(-1)) of 0.5% bupivacaine HCl with a pain pump via an temporary epidural catheter. Patient's visual analogue scores (VAS) were recorded on the fifth preoperative day and on postoperative day 5, 2 weeks, 1, 3, 6 and 9 months.

RESULTS: There was a significant difference between mean preoperative and postoperative VAS value at day 5, 2 weeks, 1, 3, 6 and at the end of 9 months ((68.85 +/− 1.43) (13.57 +/− 6.68) (11.43 +/− 6.70) (14.29 +/− 6.52) (20.71 +/− 6.41) (20.71 +/− 6.41) and (21.43 +/− 6.10) respectively; *P<0.05). Two of 14 patients did not show any pain relief.

CONCLUSIONS: Continuous administration of 60 mL of 0.5% bupivacaine HCl at 1 mL h(-1) with a pain pump and epidural catheter can be used as a transition treatment for patients with side effects from high-dose antiepileptic drugs and for patients awaiting neurosurgery or individuals who refuse cranial surgery. It should not be considered as an alternative treatment of neurosurgical approaches, such as MVD, which has a definite long-lasting results. Copyright 2011 European Association for Cranio-Maxillo-Facial Surgery. Published by Elsevier Ltd. All rights reserved.

Publication Type
Clinical Trial. Journal Article.

Date Created
20120124

Year of Publication
2012

<19>

Unique Identifier
21210165

Status
MEDLINE

Authors
Balasundram S; Cotrufo S; Liew C.
Authors Full Name

Cotrufo, Stefano; Liew, Colin.
Institution

Balasundram, Sathesh. Oral and Maxillofacial Surgery Unit, Eastman Dental Hospital, University College London Hospital, London, UK. satbala@yahoo.com

Title
Case series: non vascular considerations in trigeminal neuralgia.

Source

Abstract
An abnormal vascular course of the superior cerebellar artery is often cited as the cause for trigeminal neuralgia. However, among patients with TN-like symptoms, 6% to 16% are variously reported to have intracranial tumours. Aneurysms, tumours, or other lesions may impinge or irritate the trigeminal nerve along its course. Uncommonly, an area of demyelination from multiple sclerosis may be the precipitant. We would like to present a series of unusual lesions, all of which initially presented with neuralgic-like symptoms and were refractory to treatment. Collated case series with photographs and imaging are reviewed in this paper. Discussion of case presentation and management are done for evaluation. A wide range of other compressive lesions can cause trigeminal neuralgia. This paper illustrates the clinical presentation of atypical trigeminal neuralgia and emphasises the value of diagnostic imaging in trigeminal neuralgia patient. Suggested algorithm for management of trigeminal neuralgia.

Publication Type
Case Reports. Journal Article.

Year of Publication
2012

Unique Identifier
21670221

Authors
DaSilva AF; DosSantos MF.

Authors Full Name

DaSilva, A F. Headache & Orofacial Pain Effort, Department of Biologic and Materials Sciences and MCOHR, School of Dentistry, University of Michigan, 1011 N. University Ave., Ann Arbor, MI 48109-1078, USA.

Title
The role of sensory fiber demography in trigeminal and postherpetic neuralgias. [Review]

Source

Abstract
In this study, we systematically investigated fiber demography, based on function and distribution, from the periphery to their destinations in the various central (sub) nuclei in the trigeminal brainstem nuclear sensory complex. Conventional and novel compelling information is provided, demonstrating that the ratio and somatotopy of types A and C sensory fibers at the site of a lesion can elucidate important puzzles in TNP disorders. For instance, we explain how of a major shift in the fibers' direction and ratio at the level of the trigeminal root entry zone (REZ) influences the pathophysiology of pre- and typical trigeminal neuralgia. As a result, there is a high A/C ratio of oral and peri-oral fibers in the supero-medial region of the REZ, which is mostly susceptible to vascular compression. However, this A/C ratio varies considerably at lower proportions in other areas along the peripheral trigeminal pathway, where an injury (viral, vessel compression, or trauma) can lead to a broader spectrum of fiber involvement and, consequently, pain outcome. In summary, we explain how fiber demography can influence pain quality, location, temporal features, progress, and treatment prognosis of TNP in those patients who develop it.
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