ejpmr, 2025, 12(5), 516-517

SJIF Impact Factor 7.065

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Review Article

ISSN 2394-3211

EJPMR

SLUDER'S NEURALGIA: REVISITING A RARE CAUSE OF CRANIOFACIAL PAIN

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Article Received on 21/03/2025 **Article Revised on 11/04/2025** **Article Published on 01/05/2025**

ABSTRACT

Sluder's neuralgia, also referred to as anterior ethmoidal nerve syndrome, is a rare and often misdiagnosed cause of craniofacial pain characterized by unilateral nasal, orbital, and maxillary pain. Originally described in the early 20th century by Greenfield Sluder, the condition is now understood to arise from irritation of the anterior ethmoidal branch of the nasociliary nerve. This article provides a comprehensive overview of the etiology, clinical presentation, differential diagnosis, and management of Sluder's neuralgia, aiming to raise awareness and guide accurate diagnosis and effective treatment.

KEYWORDS: Craniofacial pain, nasal neuralgia, anterior ethmoidal nerve, facial pain.

INTRODUCTION

Sluder's neuralgia is an uncommon neuralgic syndrome presenting as persistent or episodic facial pain, often misattributed to sinusitis, migraine, or dental pathology. First identified by Sluder in 1908, the condition was termed "sphenopalatine neuralgia" due to the proposed involvement of the sphenopalatine ganglion. Later studies localized the pain origin more accurately to the anterior ethmoidal nerve, a branch of the ophthalmic division (V1) of the trigeminal nerve.

Despite its rarity, awareness of Sluder's neuralgia is crucial, particularly for otolaryngologists, neurologists, and primary care physicians, due to its impact on quality of life and potential for mismanagement.

MATERIALS AND METHODS

This article is based on a comprehensive review of the existing medical literature and clinical experience related to Sluder's neuralgia, also known as anterior ethmoidal nerve syndrome. A structured search was conducted using databases such as PubMed, Scopus, and Google Scholar to identify relevant peer-reviewed articles published between 1900 and 2024. Keywords included "Sluder's neuralgia," "anterior ethmoidal nerve," "craniofacial pain," "nasal neuralgia," and "sphenopalatine ganglion." Preference was given to clinical reviews, anatomical studies, case series, and interventional studies that provided insights into diagnosis, differential diagnosis, and treatment options. In addition, diagnostic and therapeutic information was supported by clinical findings from patient encounters at a tertiary care otolaryngology and neurology clinic. Anatomical correlations were cross-referenced with modern surgical atlases and cadaveric dissection studies. The aim was to synthesize both historical perspectives and current evidence to provide a clinically relevant overview of Sluder's neuralgia.

Clinical Presentation

Sluder's neuralgia typically presents as deep, unilateral facial pain that is often centered behind the eye or around the nasal region. Patients frequently describe the pain as dull, aching, or pressure-like, with radiation to the maxilla, orbit, ear, temple, or even the upper teeth.[1,3] One of the hallmark features is the presence of associated autonomic symptoms such as nasal congestion, rhinorrhea, lacrimation, and conjunctival injection, which can lead to confusion with other craniofacial pain syndromes[3,4] Some individuals report worsening symptoms in certain environmental conditions, such as changes in barometric pressure or exposure to cold air. Due to the overlap in symptoms with conditions such as sinusitis, trigeminal neuralgia, and temporomandibular joint disorders, Sluder's neuralgia is frequently misdiagnosed, which may delay appropriate management.[6,7] A thorough clinical history and careful attention to the pattern and location of symptoms are essential for distinguishing this syndrome from more common causes of facial pain.

Diagnosis

The diagnosis of Sluder's neuralgia is primarily clinical, relying heavily on a detailed patient history and a high

index of suspicion.[3,5] A thorough nasal endoscopic examination is essential, as it may reveal mucosal contact points, septal deviations, or turbinate hypertrophy that could be contributing to nerve irritation.[12,13] Imaging studies, such as computed tomography (CT) or magnetic resonance imaging (MRI), are valuable in ruling out sinus pathology, tumors, or structural anomalies that may be compressing the anterior ethmoidal nerve.[11] Diagnostic nerve blocks can also serve as both a therapeutic and confirmatory tool; the application of a local anesthetic to the anterior ethmoidal nerve region may provide temporary symptom relief, supporting the diagnosis.

Differential Diagnosis

Sluder's neuralgia shares features with several other craniofacial pain syndromes, establishing an accurate diagnosis requires careful differentiation[8] which includes trigeminal neuralgia (particularly V2 or V1 distribution), cluster headache and other trigeminal autonomic cephalalgias (TACs)[9], and sinusitis and nasal polyposis. Other considerations include dental pathologies, temporomandibular joint dysfunction, and atypical facial pain syndromes, all of which may mimic the facial pain associated with Sluder's neuralgia but have distinct diagnostic and therapeutic profiles.[10]

MANAGEMENT

The management of Sluder's neuralgia involves a combination of conservative, interventional, and occasionally surgical approaches. Initial treatment often includes medical therapy aimed at neuropathic pain control, with tricyclic antidepressants such as amitriptyline and anticonvulsants like gabapentin or carbamazepine commonly used. Non-steroidal anti-inflammatory drugs (NSAIDs) may offer symptomatic relief in some cases. Nasal decongestants and topical anesthetics may also help alleviate symptoms, particularly in patients with concurrent nasal congestion or inflammation.[2] Avoidance of known triggers, including allergens and nasal irritants, should be advised. For patients who do not respond to pharmacologic therapy, targeted nerve blocks using local anesthetics and corticosteroids can provide temporary relief and further confirm the diagnosis. In cases where anatomical factors such as septal deviation or turbinate hypertrophy are implicated, endoscopic sinus surgery—such as septoplasty or turbinate reduction—may be beneficial.[12,13] More advanced interventional options, including radiofrequency ablation or cryoneurolysis of the anterior ethmoidal nerve, may be considered in refractory cases. A multidisciplinary approach involving otolaryngology, neurology, and pain specialists often yields the best outcomes.

CONCLUSION

Sluder's neuralgia is a diagnostically elusive condition that warrants greater clinical awareness. While rare, it remains a significant cause of craniofacial pain and should be considered in patients presenting with unilateral facial pain and autonomic nasal symptoms. Timely diagnosis, guided by thorough history, targeted imaging, and nerve block evaluation, can lead to effective treatment and improved patient outcomes.

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