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TRIGEMINAL NEURALGIA: EMERGENCY MANAGEMENT AND NEUROSURGICAL CONSIDERATIONS

Mariam Namgaladze[1], Saba Papiashvili[1], Velodi Gakharia[2]

[1]Ivane Javakhishvili Tbilisi State University, Faculty of Medicine, Tbilisi, Georgia

[2]First University Clinic of Tbilisi State Medical University, Tbilisi, Georgia

Trigeminal neuralgia (TN) is a severe neuropathic pain disorder characterized by recurrent, unilateral, brief, electric shock-like facial pain triggered by otherwise innocuous stimuli. Although TN is generally managed in outpatient settings, severe exacerbations may present to the emergency department as an acute pain crisis, with inability to eat, drink or take oral medication, resulting in dehydration and physical exhaustion. This review aims to develop an evidence-informed clinical framework for the emergency recognition, acute management, and appropriate neurosurgical referral of patients presenting with severe TN.

Classical TN is most commonly associated with neurovascular compression of the trigeminal nerve root entry zone, frequently involving the superior cerebellar artery. Focal demyelination and abnormal ectopic impulse transmission contribute to the characteristic paroxysmal pain. In the emergency department, recognition of the typical clinical phenotype is essential, while red flags - including young age at onset, bilateral symptoms, persistent facial sensory deficits, atypical pain characteristics, or additional cranial nerve abnormalities - should prompt evaluation for secondary causes such as multiple sclerosis or cerebellopontine angle lesions and consideration of neuroimaging.

The proposed emergency management framework emphasizes rapid clinical assessment, identification of complications, hydration when oral intake is compromised and targeted rescue therapy in severe pain exacerbations. Conventional analgesics are generally insufficient for TN-associated paroxysmal pain. In monitored settings, intravenous agents such as lidocaine or fosphenytoin may be considered for acute rescue treatment, followed by optimization of established oral therapy, particularly carbamazepine or oxcarbazepine, when appropriate. Following stabilization, patients with persistent or medically refractory symptoms should undergo neurological and neurosurgical assessment.

For classical TN refractory to medical therapy, microvascular decompression (MVD) through a retrosigmoid approach provides a definitive treatment option by addressing neurovascular compression while aiming to preserve trigeminal nerve function. Percutaneous ablative procedures and stereotactic radiosurgery may provide alternatives for selected patients, particularly those with increased surgical risk.

This framework highlights the importance of integrating emergency stabilization with early specialist decision-making. Prompt recognition of TN, exclusion of secondary pathology, appropriate acute treatment and timely neurosurgical referral may improve continuity of care and facilitate definitive management of medically refractory disease.

Keywords: Trigeminal neuralgia, acute pain crisis, emergency medicine, microvascular decompression, neurosurgery