

From Diagnosis to Relief: Multidisciplinary Protocol and Neuromodulation for Refractory Facial Pain

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Abstract

Introduction: Refractory facial pain (RFP) is a complex clinical entity often resistant to standard pharmacological and surgical treatments. Due to its multifactorial etiology and overlapping symptomatology with dental, neurological, ENT, and musculoskeletal disorders, accurate diagnosis and effective treatment remain challenging. To address this, we implemented a structured multidisciplinary team (MDT) approach aimed at improving diagnostic accuracy and optimizing therapeutic outcomes.

Method: A comprehensive MDT protocol was developed and implemented at Dubrava University Hospital. The MDT includes experts from neurosurgery, neurology, psychiatry, otorhinolaryngology, maxillofacial and oral surgery, anesthesiology, radiology, and physical medicine. The protocol is organized into three escalating treatment lines: (1) Diagnostic clarification and pharmacological therapy, (2) Interventional pain management, and (3) Advanced neuromodulatory and surgical options. Patients are referred via a centralized MDT email system and undergo coordinated assessment and individualized treatment planning. Regular follow-ups are conducted to evaluate clinical response and determine progression through therapeutic lines.

Results: To date, a number of patients with refractory facial pain have completed the MDT evaluation and treatment process. Diagnostic precision was significantly improved, enabling the exclusion of secondary causes and appropriate patient stratification. Several patients progressed to the third treatment line and were treated with motor cortex stimulation (MCS). These patients demonstrated marked reduction in pain intensity and significant improvements in quality of life, with minimal adverse effects. Clinical success was most evident in cases with confirmed neuropathic pain phenotypes.

Discussion: These findings suggest that a structured MDT framework not only enhances diagnostic clarity but also ensures timely access to advanced treatments for appropriate candidates. The collaborative decision-making process promotes individualized care and may serve as a model for managing other complex chronic pain conditions.

Conclusions: The structured MDT approach offers a systematic and effective framework for managing refractory facial pain. It facilitates accurate diagnosis, reduces unnecessary diagnostics, and enables timely initiation of advanced treatments, such as MCS, for carefully selected patients. Our early clinical experience supports the continued development and potential expansion of this protocol as a model for comprehensive facial pain management.

References

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