Non Surgical Management of Temporomandibular Joint Disorders

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ABSTRACT:

Temporomandibular Joint Disorders (TMDs) are multifactorial conditions affecting the temporomandibular joint (TMJ), often presenting as pain, joint sounds, limited jaw movement, and associated myofascial symptoms. This article explores the pathophysiology, diagnosis briefly, and non-surgical therapeutic modalities in detail employed in the management of TMD. Emphasis is placed on conservative and minimally invasive interventions that aim to alleviate pain, restore function, and prevent progression.

Anatomically, the TMJ's unique structure allows both rotational and translational movements, making it vulnerable to mechanical, inflammatory, and neuromuscular disruptions. TMDs may result from trauma, arthritis, bruxism, or psychological stress. Diagnosis involves clinical evaluation, imaging, and classification based on joint or muscular origin.

Pharmacological management includes NSAIDs, antidepressants, and anticonvulsants to modulate inflammation and pain pathways. Non-invasive modalities such as physical therapy, low-level laser therapy (LLLT), ultrasound, and electrical stimulation are utilized to improve joint function and reduce muscular tension. Occlusal splints offer stabilization and occlusal correction in cases of bruxism.

Minimally invasive techniques like botulinum toxin (BTX) and hyaluronic acid (HA) injections have demonstrated efficacy in reducing hyperactivity of masticatory muscles and improving joint lubrication, respectively. Arthrocentesis serves as a therapeutic joint lavage to reduce intra-articular inflammation and adhesions.

Overall, non-surgical management strategies provide significant symptomatic relief in most TMD cases, with individualized treatment plans optimizing patient outcomes. The shift from surgical to biopsychosocial and multidisciplinary approaches marks a paradigm evolution in TMD management, highlighting the importance of integrated, evidence-based care.

KEY WORDS: Temporomandibular Joint, regerative medicine, intra articular injection, pharmacoltheraphy, hyaluronic acid