Disorders of the Masticatory Muscles

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KEYWORDS

• Masticatory muscles • Persistent orofacial muscle pain • Myalgia • Myofascial pain • Temporomandibular joint disorder • Fibromyalgia

KEY POINTS

- It is clear that there are several types of disorders of the masticatory muscles, each of which may have a complex etiology, clinical course, and response to therapy.
- Masticatory muscle disorders include both regional and centrally mediated problems. Host susceptibility plays a role at several stages of these disorders, including pain modulation and response to therapy.
- Disorders of the masticatory muscles must be accurately identified and differentiated from primary temporomandibular joint disorders such as those involving pain from osteoarthritis, disc displacement, or jaw dysfunction.

INTRODUCTION

Muscle disorders involving the masticatory muscles have been considered analogous to skeletal muscle disorders throughout the body.[1,2] However, emerging research has shed new light on the varied etiology, clinical presentation, diagnosis, and treatment of myofascial pain and masticatory muscle disorders.[3–6] This article reviews the etiology and classification of regional masticatory muscle disorders, the clinical examination of the patient, and evidence-based treatment recommendations.

Mechanisms behind masticatory muscle pain include overuse of a normally perfused muscle or ischemia of a normally working muscle, sympathetic reflexes that produce changes in vascular supply and muscle tone, and changes in psychological and emotional states.[7] Neurons mediating pain from skeletal muscle are subject to

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strong modulatory influences. Bradykinin, serotonin, substance P, prostaglandins, and neuropeptides sensitize nociceptors and can easily sensitize nociceptive endings. Painful conditions of muscle often result in increased sensitivity of peripheral nociceptors and hyperexcitability in the central nervous system with hyperalgesia.[8]

Muscle disorders can be divided into regional disorders, such as myalgia associated with temporomandibular joint (TMJ) disorder, and systemic disorders, such as pain associated with fibromyalgia.[2] The paucity of data on the etiology and pathophysiology of muscle pain limits the ability to clearly delineate all groups of muscle disorders. Frequently the clinician must rely on clinical judgment to establish a diagnosis. It is clear that well-designed controlled trials and additional research is necessary for the development of validated diagnostic criteria and treatment protocols.[3,9–11]

CLASSIFICATION OF MASTICATORY MUSCLE DISORDERS

Chronic myalgia of the muscle of mastication (MOM) is one aspect of temporomandibular disorders (TMDs).[2,3] Historically, clinicians and researchers have subclassified TMDs into intracapsular disorders and masticatory muscle disorders such as local myalgia, myofascial pain, centrally mediated myalgia, myospasm, myositis, myofibrotic contracture, and masticatory muscle neoplastic disease.[9] Conflicting classification schemes and terminology have led to significant confusion among clinicians, and perhaps inaccurate diagnosis and treatment of patients. In fact, many studies continue to group muscle pain and painful TMJ disorders together under the term TMD, although these entities are pathophysiologically and clinically distinct.[3,12–14] Although the most common feature of most masticatory muscle disorders is pain, mandibular dysfunction such as difficulty chewing and mandibular dysfunction may also occur. The clinician needs to differentiate masticatory muscle disorders from the primary TMDs such as those that involve pain associated with osteoarthritis, disc displacement, or jaw dysfunction (**Table 1**).

The clinical features of masticatory muscle disorders are as follows.

Features of Local Myalgia

- Sore MOM with pain in cheeks and temples on chewing, wide opening, and often on waking (eg, nocturnal bruxism)
- Bilateral
- Described as stiff, sore, aching, spasm, tightness, or cramping
- Sensation of muscle stiffness, weakness, fatigue
- Possible reduced mandibular range of motion
- Differential diagnosis: myositis, myofascial pain, neoplasm, fibromyalgia

Features of Myofascial Pain

- Regional dull, aching muscle pain
- Trigger points present and pain referral on palpation with/without autonomic symptoms
- Referred pain often felt as headache
- Trigger points can be inactivated with local anesthetic injection
- Sensation of muscle stiffness and/or malocclusion not verified clinically
- Otologic symptoms including tinnitus, vertigo, and pain
- Headache or toothache
- Decreased range of motion
- Hyperalgesia in region of referred pain
- Differential diagnosis: arthralgia, myositis, local myalgia, neoplasia, fibromyalgia