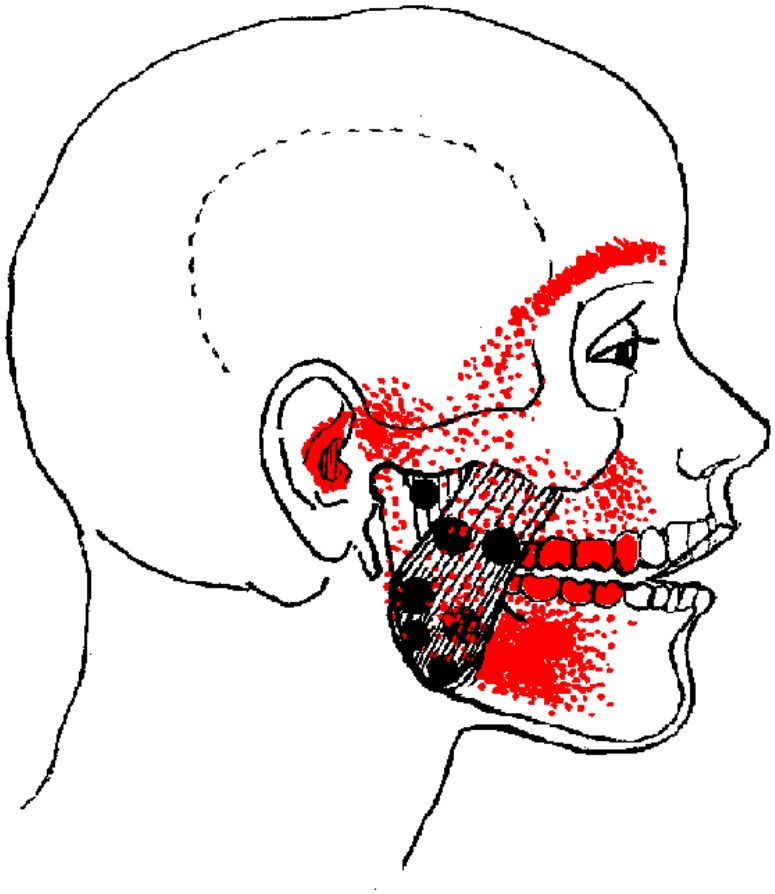
WAKEFIELD SPORTS CLINIC

Temporomandibular Disorders - Suzanne Jacobson

Pain involving the head and face is very common. One of the most common causes of orofacial pain is a group of musculoskeletal disorders known as temporomandibular disorders (TMD). This embraces a number of clinical problems that involve the temporomandibular joint(TMJ), the muscles of chewing and swallowing, and associated structures (De Leeuw 2008).

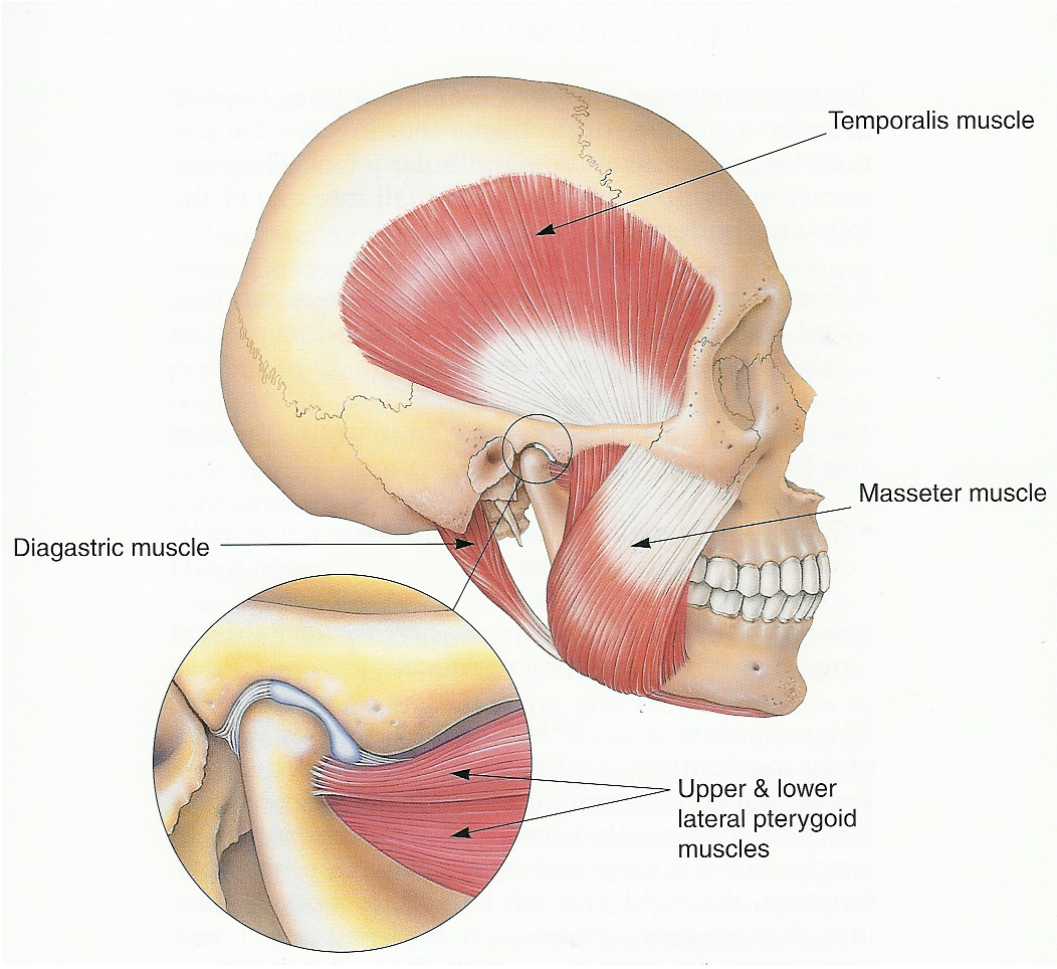
Pain is the most common symptom and may be present in conjunction with interference or limitations in mouth opening (locking), asymmetric jaw movements, and joint sounds (clicking or grating). muscle spasm and/or tenderness, and abnormal bite patterns. Pain is commonly experienced in the temporomandibular joint, as a headache behind or around the eyes, and/or radiating into the teeth, temples, ear, side of the neck or upper shoulder. Other associated signs and symptoms may include earache, tinnitus, headache, neck pain, and increased tooth wear.



Generally, TMD will be provoked by some form of trauma. Blunt trauma to the face or jaw during sport in the form of contact with the ground, balls, other players or equipment could lead to ongoing TMD (Pullinger and Seligman 1991). Sometimes an acute episode will settle only to be re-aggravated months and sometimes years later. Other forms of trauma may include dental work, car accidents, facial injuries or excessive use (grinding, clenching, or repetitive chewing).

Muscle of Mastication disorders

There are a number of muscles that are involved in the movement and function of the Temporomandibular joint. These include Temporalis, Masseter, Medial and Lateral Pterygoid, Digastric and Neck stabilizer muscles.



A balance of contraction of these muscles occurs around the joint during jaw movement to create functional opening, closing and chewing.

Response to trauma initially will be protective co-contraction (Stohler and Ash 1986). When jaw elevators are involved, jaw opening is limited and pain produced when the jaw is stretched open. This usually resolves in the short term if the affected muscles are rested and further loading avoided.

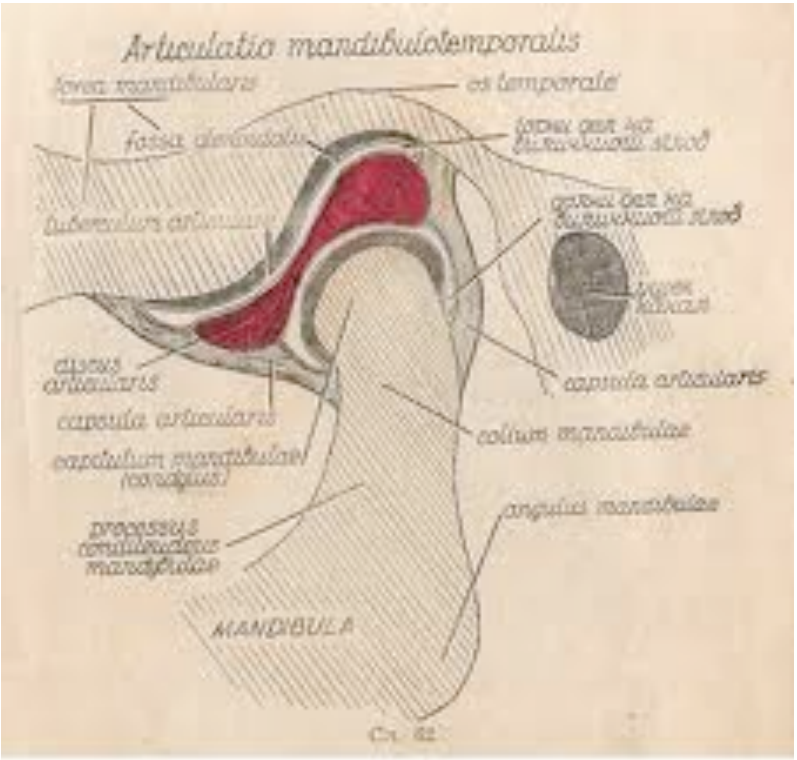
Delayed onset muscle soreness is a non-inflammatory disorder and presents as tender, painful muscles with sensations of jaw fatigue. Muscle stiffness, weakness and limited or asymmetrical mouth opening are usually present. This can be a result of excessive chewing, opening or grinding (Lieber and Friden 2002) or viewed as a progression of unresolved protective co-contraction.

Myofascial pain is a regional muscle pain associated with myofascial trigger points. The pain may involve the area of the trigger point and be referred into more distal locations (Gerwin 2001). An example would be the referred pain patterns shown in the figure below for Sternocleidomastoid muscle. Scientific validity of myofascial pain is yet to be established.

Common myofascuial trigger points in the right sternocleidomastoid muscle

Temporomandibular Joint Disorders

The temporomandibular joint (TMJ) is a complex articulation which hinges and glides. It comprises of two synovial joints, an articular disc, capsule and ligaments.



Internal disc derangement is one possible source of TMJ dysfunction. It is thought that the disc displaces due to elongation and tearing of the discal ligaments (Isberg-Holm and Westesson 1982). A disc displacement can relocate during opening or closing and is usually accompanied by a click and some jaw deviation. Alternatively, discs can displace and not relocate spontaneously causing 'locking'. This is often painful with limited jaw opening and jaw deviation. In chronic cases, the pain becomes less prominent, mouth opening improves but, osteoarthritic changes may develop associated with stiffness and grating (Minakuchi et al 2001).

Dislocation is the movement of the condyle forward out of its socket beyond the limiting bony margin. This results in wide mouth opening without the ability to close and significant pain and spasm. This condition is a medical emergency if the patient is unable to self reduce the joint and requires jaw manipulation by a specialist in the field.

Inflammation of the synovial lining, ligaments and/or capsule of the TMJ can also occur. This can be a result of trauma, autoimmune disease, or infection (Schille 1986). Clinically these present with pain over the joint that worsens with use. Sometimes swelling is palpable and movement becomes limited depending on which structure is involved.

Osteoarthritis (OA) is another joint disorder that can occur. This is a degenerative condition that results in the deterioration and remodeling of the articular cartilage and subchondral bone (De Bont et al 1985). These changes once established are evident on X-ray. OA is often non-symptomatic but may be associated with pain, and asymmetrical jaw movement if the above inflammatory disorders occur as a result of the degenerative change.

Management of Temporomandibular Disorders.

The treatment of TMD is targeted at resolving pain and restoring functional balance to the jaw. This may include an approach that includes practitioners from multiple areas in the health care team. Dentists may be involved in assessing tooth wear and bite disorders and can provide splinting to support the teeth and TMJ. Pyschologists may be involved in implementing strategies to manage stress related to grinding and clenching. Doctors are well placed to assess for TMD and refer to relevant practitioners and prescribe appropriate medication. This may include pain killers, anti-inflammatory drugs, low dose antidepressants, and/or muscle relaxants.

Physiotherapy has a valid role to play. As specialist practitioners in the assessment and treatment of musculoskeletal disorders we are well equipped to provide education and management of TMD. Firstly the underlying dysfunction will be assessed, and other possible diagnoses negated (ie.Neck disorders can also refer into the head and face). Treatment will be targeted at resolving the dysfunction and can include postural training, muscle strength and flexibility exercises, local muscle release techniques, jaw mobilisations to release capsular or ligamentous stiffness, active exercises to help to relocate disc derangement and education on self management strategies..

References

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ABOUT THE AUTHOR

Suzanne joined the Wakefield Sports Clinic family after running her own practice for 15 years in the southern suburbs. She specialises in upper limbs (specifically shoulders), cervical spine, TMJ and the treatment of headaches, musculoskeletal rehabilitation, post surgical management, Pilates and hydrotherapy.

She has also acted as a clinical tutor for for UniSA at Flinders Medical Centre and currently at the Royal Adelaide Hospital.

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