

SPECIALTY: MAXILLOFACIAL SURGERY

CLINICAL PROBLEM: JAW JOINT DISORDERS

MANAGEMENT GUIDELINES

The jaw joint or temporomandibular joint (TMJ) is a diarthrodial structure. The lower joint space allows condylar rotation while the upper joint space accommodates antero-posterior gliding and lateral protrusion. The TMJ is unique in its dual joint anatomy; whatever happens in one joint is reflected in its contra-lateral counterpart. In addition the teeth exert extra-articular guidance and any alteration in the dentition can throw abnormal stresses on the TMJ.

DISORDERS

- ◆ **Dysfunction** ± internal derangement
- ◆ **Hypermobility**
- ◆ **Acute traumatic dysfunction**
- ◆ **Arthritis** - in particular rheumatoid and psoriatic arthritis.
- ◆ **Osteoarthrosis** - the end point of all the above categories or as a primary disorder.
- ◆ **Giant Cell Arteritis (GCA)** - is an important differential diagnosis in the elderly.

TMJ DYSFUNCTION

Signs and Symptoms

- ◇ **Functional jaw pain** - with jaw movement and mastication. There may be mild capsular tenderness.
- ◇ **Clicking or coarse crepitus** - may have been a feature for years or only a few days.
- ◇ **Locking** - Initially released by a trick movement or by lateral joint pressure but may progress to a fixed lock.
- ◇ **Masticatory muscle tenderness & spasm**

Unless the patient demonstrates **Functional jaw pain** and **Clicking or crepitus** he/she does not have TMJD and other causes must be looked for e.g. Atypical facial pain, myofascial pains, neck and other referred pains. There is an overlap with parotid and auditory/mastoid abnormality.

Frequency

TMJD is a common complaint with a point prevalence of 5% and lifetime prevalence of >25%.

In only 5% does the condition represent a significant problem distinguished by frequency, persistence and severity of symptoms - and in common with many musculo-skeletal disorders a psychosocial overlay predominates.

THE CLINICIAN IS CAUTIONED NOT TO RECOMMEND TREATMENT AFTER MERELY DETECTING SIGNS IN THE ABSENCE OF A COMPLAINT.

Diagnosis

History and clinical examination

It is important to determine at the offset whether the symptoms are predominantly isolated to the joint, or the facial muscles. Specialists refer to the 'finger-hand' sign which allows them to identify patients who are most likely to benefit from surgery. Patients whose pain involves a larger area of the face tend to do less well. Patients who point at the problem area tend to do better.

X-Rays - Radiographs are not indicated routinely, but may help to exclude arthritic changes and other causes of jaw pain e.g. caries/sinus pathology. **If requested an orthopantomogram (OPT) is the most useful view.** Do not request "TMJ views" as you will get a transcranial view which is difficult to interpret. Dynamic MRI imaging is now increasingly helpful, but decisions concerning these scans require specialist input.

Management of TMJD

There is little information available to support any of the treatments for mechanical TMJ pain.

1. First appointment:

Counselling - reassurance that the disorder usually follows a benign course and 80% of cases resolve spontaneously. Jaw opening should be restricted to 1.5cm, food needs to be cut up and not too chewy & yawns need to be stifled. Nail biting, gum chewing & similar activities must cease. Consider mild anti-inflammatory medication, especially if joint capsule(s) are tender, but warn to discontinue if no benefit after 1-2 weeks. Review at 3 months.

2. Second appointment :

Further **reassurance** & reinforce previous dietary and behavioural advice.

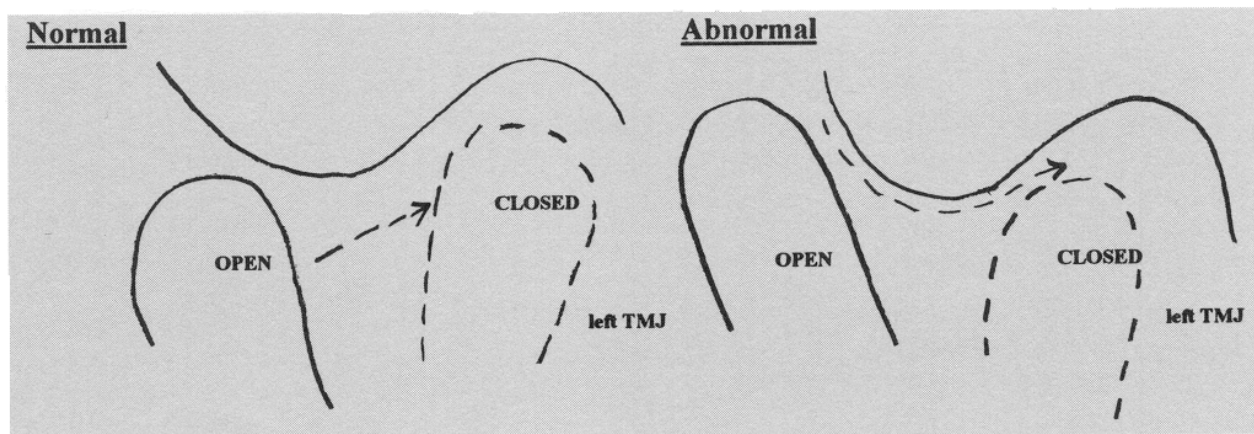
If problem is no better **refer to Maxillofacial Unit** where the following may be recommended:-

- **Jaw exercises** - encouraging the patient to avoid excessive opening and propulsive opening movements.
- **Anti inflammatory** - helpful if signs/symptoms of arthritis. Rarely of any use if muscular symptoms predominate.
- **Bite appliance** - alters muscle activity patterns and the weight bearing characteristics of the joint. May relieve intra-articular pain and reduce the damaging effects of clenching or bruxism. Different designs available for different aspects of the condition.
- **Tricyclics** – or similar, with sedative profile, modify muscular activity/para-activity
- **Antispasmodics** – selected cases
- **Physiotherapy** – May be of benefit, especially if muscular symptoms prevail. H-wave & acupuncture can be very effective in selected cases.
- **Peri or intra-articular steroids.** For arthritic conditions
- **Botox** – Masticatory muscle spasm
- **Arthrocentesis** may be helpful in the acute closed lock. Use in other situations can be effective but is not predictably so.
- **Arthroscopy** – Now increasingly used to visualise joints, and utilise simple treatments such as adhesiolysis. Much less morbidity than standard arthrotomy
- **MUA** – Can be a useful diagnostic aid if surgery is contemplated. Often employed with arthrocentesis to break up adhesions in the upper joint space
- **Open Surgery** - rarely indicated and success varies. A variety of operations may be indicated, from disectomy to total joint replacement.

A small number of patients present with symptoms similar to TMJD but caused by **joint hypermobility**.

Signs and Symptoms

- ◇ Subluxation on maximal jaw opening, confirmed on OPT.



- ◇ Joint reduces with a **loud jolt and pain**.
- ◇ Patient exhibits **guarding** when asked to open maximally.
- ◇ Some patients will present with **recurrent irreducible dislocation**.

Treatment

- If persistent - surgery may be the only option.

TMJ ACUTE POST TRAUMATIC DYSFUNCTION

Signs and Symptoms

- ◇ **Indicative history** e.g. whiplash injury, direct trauma.
- ◇ Capsular **swelling and tenderness**.
- ◇ **Trismus**.
- ◇ **Deranged dental occlusion** due to joint effusion.

Treatment

- **NSAID's** e.g. Ibuprofen 400 mg tds
- **Rest** - soft diet
- Early referral for **physiotherapy** (during the first two weeks) can be beneficial.

TMJ - INFLAMMATORY ARTHRITIS

Usually one element of a **polyarthritis** - RA, psoriatic arthritis.

Basic Screen

1. Clinical history and examination.
2. FBC, ESR, CRP, RF, ANA (if SLE suspected).
3. Lab tests can be normal despite significant arthritis, particularly in the early phases. If the patient has generalised joint symptoms, even if the blood tests are normal, **referral to a rheumatologist may be indicated.**
4. Maxillofacial treatment may include **bite splints** and **intra-articular steroids.**
5. Involvement of the jaw joints in growing children may lead to disturbances of occlusion

TMJ - OSTEOARTHROSIS

Almost universal in >70 yrs but seldom gives rise to significant symptoms. Premature OA occurs if the meniscus perforates secondary to internal derangement.

There is a poor correlation between symptom severity and radiographic appearance.

- ◇ Characteristic fine crepitus - "soldiers marching on gravel".
- ◇ Reduced maximal opening (< 4 cm).
- ◇ Pain - not necessarily a major feature.

X-ray - OPT view of TMJs may show reduced joint space, microcondyle, flattening and osteophytic lipping of condyle, sub-articular cyst(s).

Treatment

Usually follows a benign course with a strong tendency to spontaneous symptom remission.

- NSAIDs.
- If pain is intractable refer to Maxillofacial Unit. Surgery is rarely indicated, as medical management usually suffices. However, in patients where symptoms isolated to the joint surgery can be very effective.

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DATE PUBLISHED: 05/97

REVIEWED: 05/99, 10/02, 05/07,
09/09, 08/11

NEXT REVIEW: 08/13