Disclaimer

This movie is an educational resource only and should not be used to manage your dental health. All decisions about the management of TMJ Disorders must be made in conjunction with your Dental Surgeon or a licensed healthcare provider.
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INTRODUCTION

The Temporo-mandibular Joint is the joint of the jaw which we commonly refer to as the TMJ. There are two joints, one on either side of the head. Temporo-mandibular joints are located in front of your ears where your lower jaw meets the skull. You will be able to feel the joint when you place your fingers in front of your ears on either side of your head and try to open and close your mouth.
Introduction

The TMJ enables movement of your jaw when you eat your food and of course when you talk and sing. It is one of the most commonly used joints in the body.

TMJ disorder is a general term that refers to the pain or discomfort in the temporomandibular joint area. It is a very painful condition which involves the jaw joint and the muscles surrounding it.

In order to learn more about the Temporomandibular joint disorders, it is necessary to understand the normal anatomy of the TMJ.

Normal Anatomy of TMJ

The temporomandibular joint complex consists of the following structures that work in harmony for the smooth functioning of the joint:

Muscles of Mastication:
These are a complex group of muscles that allow your mouth to open and close. When these muscles are relaxed and not under stress, they work in conjunction with the other parts of the TMJ complex.

(Refer fig. 1 & 2)

The Teeth and Occlusion:
Occlusion refers to the way the upper and lower teeth come together when you bite. A bad bite may damage the joint whereas a normal occlusion provides support to the joint.

(Refer fig. 3)
Temporo-Mandibular Joint

This joint is made up of:

- Mandibular condyle
- Temporal Fossa
- Articular disc
- Ligaments
- Connective tissue

Mandibular condyle

The rounded ends of the mandible (lower jaw).

(Refer fig. 4)

Temporal Fossa

The joint socket over which the condyle glides.

(Refer fig. 5)

Articular disc

Present between the condyle and fossa and is made up of cartilage-like material. It slides in a forward direction in the socket when you open the mouth.

(Refer fig. 6)
Ligaments
These hold the disc onto the condyle and stabilize the joint.

(Refer fig. 7)

Connective tissue
This holds the disc at the back of the joint and contains blood vessels and nerves. It also surrounds the joint like a capsule.

(Refer fig. 8)
Types of TMJ Disorders

TMJ disorders are broadly divided into three types:

Myofascial pain:
This is the most common form of the disease and involves discomfort or pain in the muscles of the jaw, neck and shoulder.

(Refer fig. 9 & 10)

Internal derangement of the joint:
This type is caused by disease or damage inside the joint itself. It can be a displaced disc, dislocated jaw or a condylar injury.

(Refer fig. 11)

Degenerative joint disease:
DJD occurs in people suffering from osteoarthritis and rheumatoid arthritis. The joint surfaces wear down causing pain and grinding noises during movement of the jaw.

(Refer fig. 11)
Common causes of TMJ disorders

**Stress:** This is the main cause of TMJ pain. Stress leads to habits like clenching and grinding your teeth which can cause muscle spasm and jaw pain.

**Diseases:** Certain diseases like rheumatoid arthritis and osteoarthritis can cause pain in the joint. In both these conditions, the cartilage is lost and the bone surface erodes away.

**Injury to the jaw:** Injury can lead to fracture of the condyle and disc displacement.

**Oral habits:** Oral habits such as Bruxism (night grinding of teeth) or clenching leads to muscle spasms.

**Bad bite or Malocclusion:** Malalignment of the teeth and jaws can cause problems in the way your teeth fit with each other and place the masticatory muscles under stress.
Symptoms of TMJ disorders
You may come across the following symptoms:

- Dull, aching type of pain in the jaw
- Difficulty in swallowing, biting, opening and closing the mouth
- Headache and dizziness
- Clicking and popping sound on opening and closing the mouth
- Pain in the ears
- Stiffness in the jaw muscles

Risk Factors
The following factors increase your chances of suffering from the disease:

- Sex: Females have a greater predilection to the disorder.
- Age: Usually people between 30-50 years suffer from the problem.
- Clenching and grinding habits.
- Stressful lifestyle.
- An ill-fitting denture or a crown worn for a long time.
- Diseases like fibromyalgia and arthritis.
Diagnosis of TMJ disorders

Your dentist will ask you about your symptoms and medical history and also perform a physical examination.

Physical Exam Involves:

Examining your teeth, jaw joints, facial muscles and head. Palpation of jaw joint, facial muscles and head. Listening for clicking/popping sound when you open your jaw. Other tests that may be ordered by your dentist:

Other tests that may be ordered by your dentist:

- Xrays
- Tomogram
- CT scan
- MRI scan

Xrays

Panoramic dental X-rays can show a wide view of jaws, teeth and roots.

Tomogram

This type of x-ray shows different sections throughout the joint. It is used to diagnose arthritis and injuries.

CT scan

This type of scan uses a computer to make internal pictures of the joint and helps to see bony details.

MRI scan

Magnetic and radio waves are used to picture the jaw joint. It creates soft tissue images of disc, ligaments and muscles.

Treatment Options

(Continued in next page)
Treatment Options

At home: You can apply warm compresses over the painful area. Exercise your lower jaw by moving it side to side and trying to open and close your mouth. Try this after you apply a warm compress for 20 minutes.

(Refer fig. 14 & 15)

Medications: Muscle relaxant medicines are prescribed which will help control muscle spasm and pain. Non-Steroidal Anti-inflammatory Drugs (NSAID’s) like aspirin or ibuprofen will reduce pain and swelling. Low-dose antidepressants may also be given for pain modification.

Physical Therapy: Physical Therapy exercises help relax your muscles and improve jaw movements. Physiotherapists make use of Transcutaneous Electrical Nerve Stimulation (TENS) unit and ultrasound which promotes tissue healing and helps relax your muscles.

(Continued in next page)
**Diet changes:** You should eat a soft diet and eat small amounts of food at each sitting.

**Splint therapy:** This treatment is suggested to eliminate the effects of clenching or grinding the teeth. A splint is an appliance that fits over the chewing surfaces of your upper and lower teeth. It is worn for almost 1-3 months or more.

**Orthodontic Correction:** If your TMJ disorder is caused by the way your teeth fit together, it helps if the occlusion is corrected. Orthodontic braces will be used to reposition your teeth. If there is malalignment in the jaws, orthognathic surgery is required to change the positions of the jaw bones.

**Surgery:** Surgery is the last resort which is considered when all other treatment methods have failed. Surgery may be necessary if muscle spasms increase in frequency, TMJ has become arthritic or when there is injury to the joint.
Types of Surgery

Arthrocentesis: This is performed under general anesthesia or IV sedation. In this procedure, the surgeon injects local anesthesia and fluids inside the joint to flush out inflamed fluids. It is indicated in cases where the articular disc has adhered to temporal fossa. This procedure requires approximately 15 minutes.

Arthroplasty: This procedure refers to open surgery of TMJ. It includes Disc repositioning, Discectomy and joint replacement.

(Refer fig. 16 to 19)

(Continued in next page)
Disc Repositioning:
This is done in conditions of disc displacement which creates a ‘popping’ noise inside the joint. It is done with the patient under general anesthesia. The surgeon makes an incision over the joint area. The disc is then moved back to its original position and sutured.

(Refer fig. 20 to 23)
**Discetomy:**
This is done when the disc is damaged. Under general anesthesia, the surgeon makes an incision and the disc is removed.

(Refer fig. 24 to 27)

## Unit 3: Treatment Options

(Fig. 24)

(Fig. 25)

(Fig. 26)

(Fig. 27)

(Continued in next page)
Articular Eminence Recontouring:
This is indicated when the articular eminence is too deep due to excess force exerted on the condyle. In this procedure, the surgeon shortens and smooths the articular eminence.

(Refer fig. 28 to 30)

TMJ replacement:
This is indicated in cases of badly damaged joints from severe degenerative disease, advanced rheumatoid arthritis and congenital deformity of TMJ.

(Refer fig. 31 to 33)

(Continued in next page)
There are two types of TMJ replacement surgery.

Partial Joint replacement:
In this surgery only one of the components (disc, ball or socket) is replaced. If the temporal bone surface is not smooth, a metal liner (fossa replacement) is placed to restore motion. When the ends of the jawbone are damaged (condylar injury), they can also be replaced.

(Refer fig. 31 to 33)

Total joint replacement:
The ball and joint both are replaced with metal components. Once placed the two metal components glide smoothly across each other.

(Refer fig. 34 to 38)

(Continued in next page)
Follow-up care

- Your surgeon will advise a liquid diet for the first 2 weeks after surgery followed by a soft diet for the next 2 weeks.
- Take your medications as prescribed.
- Follow the post-operation instructions given to you on care of incisions, diet and physical therapy.
- Post-operative physical therapy plays an important role in the success of the surgical treatment.
Prevention

Preventing TMJ disorders can include the following measures:

* Stop grinding or clenching habit or use night guards (splints).
* Limit excessive jaw movements.
* Learn effective ways to overcome stress.
* Avoid eating hard foods.
Disclaimer

Although every effort is made to educate you on TMJ disorders and take control, there will be specific information that will not be discussed. Talk to your dentist or health care provider about any concerns you have about TMJ disorders.