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Inner Spaces

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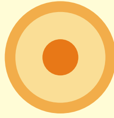

Points

- The TM joint, at the best of times, is a difficult joint to image.
- Most TM joint pain in daily routine practice, is due to internal derangements of the disc, which is a meniscus-like structure within the joint
- High-resolution MRI with special surface coils, in the open and closed mouth position, is the only modality available that allows us to accurately depict the anatomy and pathology of the disc.

TM Jt MRI

The TM joint is an unusual joint that connects the mandible to the cranium. It has a meniscus/disc, which divides this joint between the mandibular condyle and the glenoid cavity into superior and inferior halves.

Traditionally, imaging the TM joint, at the best of times, has been a difficult proposition. Plain radiographs are obtained in oblique positions and it is not always easy to get good views of the TM joint. OPGs have made TM joint imaging easier, but they still only allow us to look at the bones.

CT scans are excellent for evaluating the bony component of the TM joint, and are especially useful in patients with trauma and ankylosis.

The only modality however, that is able to evaluate the soft tissues in detail, is MRI.

To evaluate the TM joint, special surface coils are used to provide high-resolution images of this small joint. The study is performed in the closed mouth position and then repeated in the open mouth position. The oblique sagittal plane is best suited for accurate depiction of TM joint anatomy and pathology.

MRI allows depiction of the bones, the marrow, the joint space and the disc along with its anterior and posterior bands (Fig. 1). Normally, the disc is well seen in closed mouth, between the condyle and glenoid cavity (Fig. 1A) and in open-mouth, between the condyle and the articular eminence (Fig. 1B).

The painful TM joint in most instances in practice is due to functional derangement of the disc. Most often, in the closed mouth position, the disc is anterior displaced (Fig. 2A) as compared to the normal situation. On opening the mouth, two things can happen; either this abnormally positioned disc reduces to its normal position between the condyle and articular eminence (Fig. 2B), a situation called "anterior displacement with reduction", or the disc remains anterior dislocated (Fig. 3), in which case the situation is called, "anterior displacement without reduction".

In both situations, there may be clicks and the patient often has pain during mouth opening or closing.

Once the basic anatomy and pathology of the disc is known, the joint is evaluated for degenerative changes (Fig. 4) and then the further course of action can be decided.

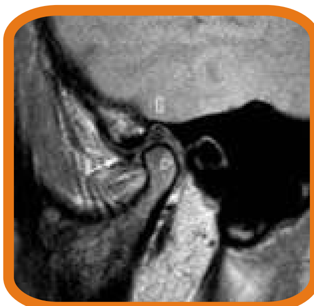

Fig. 1A

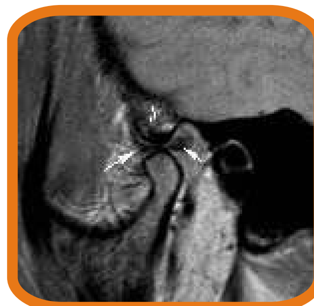

Fig. 1B

Fig. 1 (A, B): Normal anatomy. Closed (A) and open (B) mouth views show the normal position of the disc (white arrows). C condyle, G glenoid, A articular eminence.

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Fig. 2A

Fig. 2B

Fig. 2 (A, B): Anterior displacement with reduction. Closed (A) and open (B) mouth views, show an anteriorly displaced disc (white arrow) in A, which reduces normally (white arrow) in B.

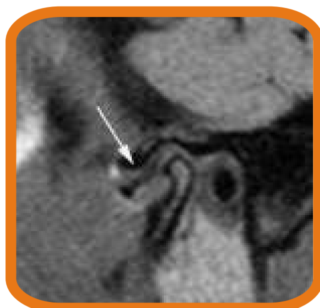
Fig. 3A

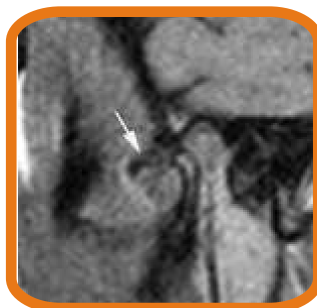
Fig. 3B

Fig. 3 (A, B): Anterior displacement without reduction. Closed (A) and open (B) mouth views, show an anteriorly displaced disc (white arrow) in A, which does not reduce and remains displaced (white arrow) in B.

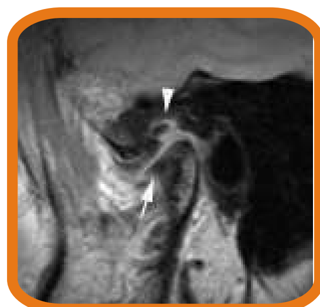
Fig. 4

Fig. 4: Osteoarthritis. Closed mouth view shows abnormal flattening of the condyle with eburnation (white arrow) with remodeling of the glenoid (white arrowhead).

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