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MRI of the Temporomandibular Joint (TMJ) – An Update

-by Dr. Nidhi Doshi

Happy 2024

Temporomandibular (TM) joint disorders are common in the population and encompass a range of abnormalities in structure and/or function of the TM joint components. Displacement of the articular disc is one of the commonest abnormalities encountered in practice.

A good quality, high resolution, focused (small FOV) MRI is the key to better understanding the dynamics and internal derangements of the temporomandibular joint. This is pivotal for treatment planning and monitoring.

Classically TMJ MRI studies have been performed with oblique sagittal views in the closed and open mouth positions and an oblique coronal view in the closed mouth position. This gives information about disc displacement in the anteroposterior as well as mediolateral planes but reduction only in the anteroposterior plane. This was addressed in the April 2021 Inner Spaces (https://picture-this.in/wp-content/uploads/2022/03/Apr-IS-1.pdf)

The addition of an oblique coronal sequence in the open mouth position gives additional information about mediolateral disc reduction and lateral mobility/hypermobility of the mandibular condyle. This information is essential for tailoring patient management using newer techniques.

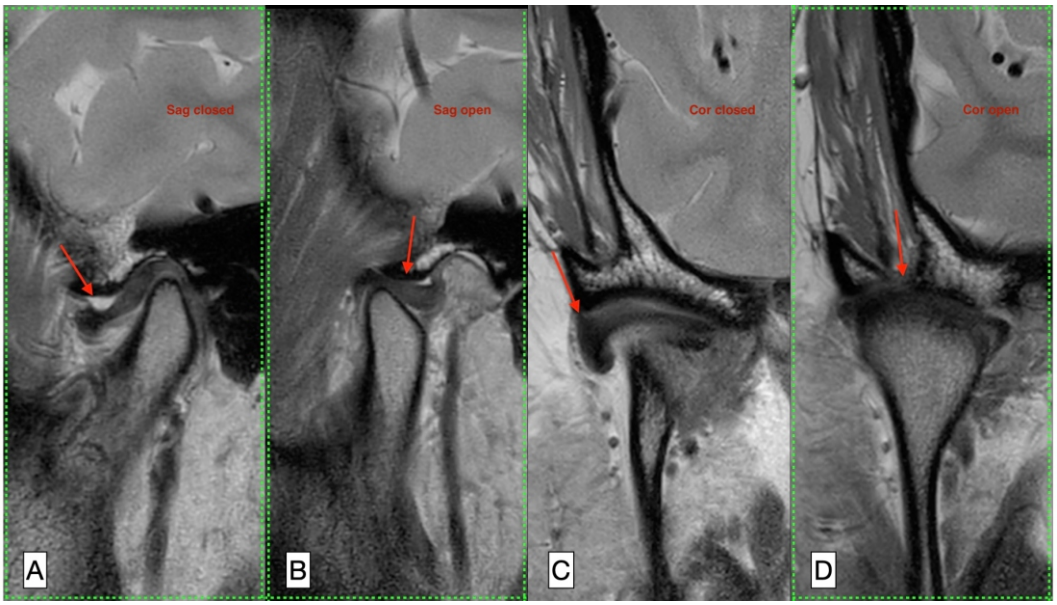

Fig 1. Anterior and lateral displacement with reduction. Oblique sagittal images in the closed (A) and open (B) mouth positions show anterior disc displacement with reduction (arrows). The oblique coronal images in the closed (C) and open (D) mouth positions show lateral disc displacement with reduction (arrows).

At a glance:

- High resolution focused MRI of the TM joints is pivotal to diagnosis and management of TMJ disorders.
- The evaluation of the articular disc and condyle in both sagittal and coronal planes gives a comprehensive understanding of the joint dynamics in each patient.
- Treating physicians need information regarding mediolateral disc displacement and reduction in addition to anteroposterior displacement and reduction for newer treatment modalities and improved patient outcomes.

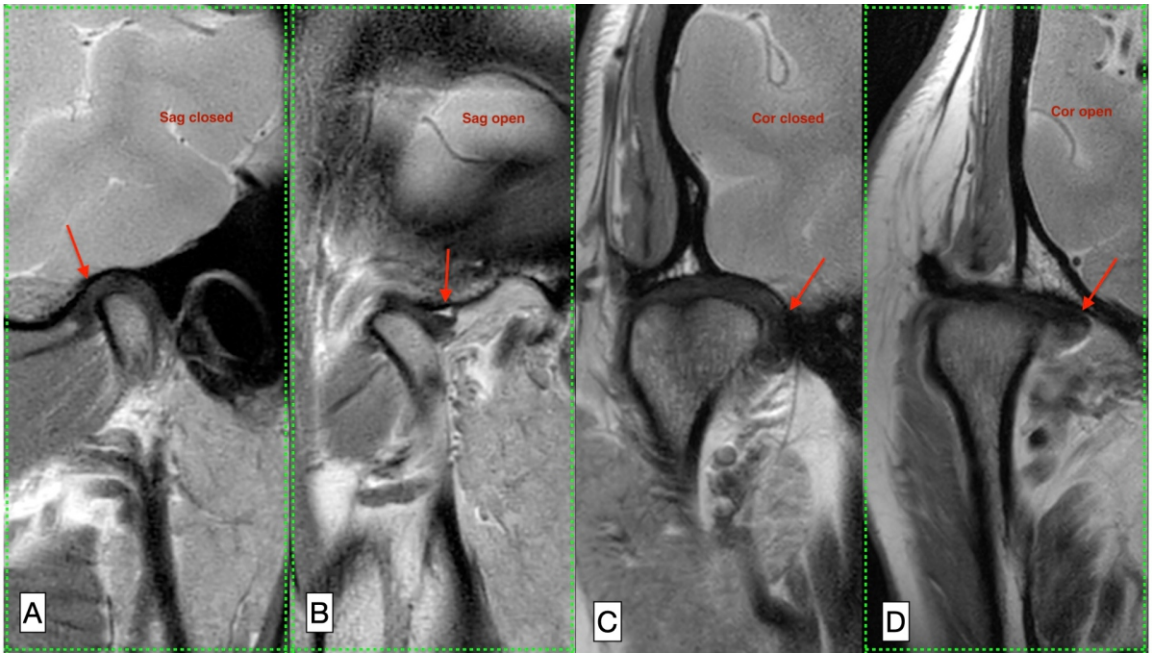

Fig 2. Posterior displacement with reduction and medial displacement without reduction. Oblique sagittal images in the closed (A) and open (B) mouth positions of the right TMJ show mild posterior disc displacement with reduction. The oblique coronal images in closed (C) and open (D) mouth positions show medial disc displacement without reduction and lateral subluxation of the mandibular condyle on mouth opening.

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