

Lucid Flowchart of the Diagnostic Criteria for Temporomandibular Joint Disorders

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Abstract

‘Expanding the taxonomy of the diagnostic criteria for temporomandibular disorders (DC/TMD)’ and ‘Diagnostic criteria for temporomandibular disorders (DC/TMD) for clinical and research applications: recommendations of the International RDC/TMD Consortium Network and Orofacial Pain Special Interest Group’ have provided a comprehensive guidance for the TMD taxonomy. However, a flowchart that is quick-to-start, easy-to-understand and clear at a glance is desired during clinical practices, and such flowchart could make an easier way to remember, and promote the learning efficiency and accuracy of TMD diagnosis for interns, junior residents, and interdisciplinary specialists.

Key Words: Temporomandibular disorders, TMD, Orofacial pain, Clinical diagnosis

Rapid Communication

To Editor-in-Chief,

First of all, our sincere appreciation goes to authors of two articles, one is ‘Expanding the taxonomy of the diagnostic criteria for temporomandibular disorders (DC/TMD)’ [1] and another is ‘Diagnostic criteria for temporomandibular disorders (DC/TMD) for clinical and research applications: recommendations of the International RDC/TMD Consortium Network and Orofacial Pain Special Interest Group’ [2]. These two articles have provided a comprehensive guidance for the TMD taxonomy. However, a flowchart that is quick-to-start, easy-to-understand and clear at a glance is desired during clinical practices, and such flowchart could make this knowledge more popularized. The best technology product is what grandmothers know how to use, and the best guidance is what helps interns to make a differential diagnosis quickly. Therefore, we have proposed an easy-to-understand flowchart for the taxonomy and differential diagnosis of temporomandibular joint disorders according to expanding the taxonomy of the DC/TMD.

In the article “Expanding the taxonomy of the DC/TMD,” several minor points did not completely conform with clinical symptoms. For example, in the taxonomy of joint disorders from disc displacement with reduction (DDWR), disc displacement with reduction with intermittent locking (DDWRWL), disc displacement without reduction with limited opening (DDWORWLO), disc displacement without reduction without limited opening (DDWORWOLO), adhesion, ankylosis, subluxation, to luxation joint pain was completely absent, while the majority of patients with joint disorders come to clinics due to a complaint of joint pain. TMD is a very complicated disease that may be complicated with multiple concomitant diseases. A patient may have more than one diagnosis of TMD; clinically it is not uncommon to see the concurrence of DDWOR/DJD, or DJD/SLE/RA. Therefore, a specific note is added on the flowchart to indicate that a diagnosis of over 2 TMD conditions is acceptable.

Furthermore, DDWOR may be a precursor of DJD and a concomitant DDWOR with crepitus sound is quite common. In DC/TMD, it was only mentioned in the comment of DDWOR that DDWOR could not be excluded based on the absence of joint sound, while the possibility of joint sound in DDWOR was not indicated in Expanding the taxonomy of the DC/TMD. For joint disorders, the taxonomy in our flowchart is based on with or without joint pain and with or without joint sound, which is less controversial. Furthermore, the laboratory test items required to exclude systemic arthritides have not been described in the Expanding the taxonomy of the DC/TMD while test items needed for the differential diagnosis of systemic arthritides are noted in the comment of our flowchart [3-5]. Among them, sensitivity and specificity of rheumatoid factor (RF) for the diagnosis of rheumatoid arthritis (RA) are both 70%, while anti-cyclic citrullinated peptide antibody (anti-CCP) has a sensitivity of 70% and specificity of 95% for rheumatoid arthritis. As for the diagnosis of systemic lupus erythematosus (SLE), scleroderma, and Sjögren’s syndrome based on the anti-nuclear antibody (ANA), the sensitivity is 95%, 90%, and 80%, respectively, but all with low specificity. The sensitivity of anti-double stranded DNA (anti-ds-DNA) for the diagnosis of SLE is 70% with a specificity of 90%, while sensitivity and specificity of anti-SSA (RO)/anti-SSB (LA) of Sjögren’s syndrome are both medium. The sensitivity of anti-DNA topoisomerase I (anti-Scl 70) for scleroderma is 15% with specificity over 90%. The prevalence of human leukocyte antigen (HLA-B27) is 90%~95% in Caucasians with ankylosing spondylitis, 40~80% in those with reactive arthritis, 70% in those with juvenile spondyloarthritis, 15% in those with psoriatic peripheral arthritis, 50% in those with enteropathic spondyloarthritis, 70% in those with undifferentiated spondyloarthritis, 80% in those with reitter’s syndrome, and 80% in those with rheumatoid arthritis. Due to a high association between thyroid function and autoimmune rheumatic disease, T3, free T4, and TSH are examined. Since leukopenia and thrombocytopenia are commonly concomitant, CBC/DC is required for SLE

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patients, which could also act as the reference for the diagnosis of myositis, infectious arthritis, and active phase in gout arthritis. Uric acid testing is helpful for the diagnosis of gout arthritis, while erythrocyte sedimentation rate (E.S.R) is not to be used for diagnosis, but monitoring for RA and inflammation treatment response. In comparison, C-reactive

protein (CRP) may be more efficient for the diagnosis of current inflammation than ESR, while lactate dehydrogenase (LDH) is quite helpful for the screening of subacute myositis and organic inflammation (heart/liver/spleen/lung/kidney/skin/muscle) (Figure 1).

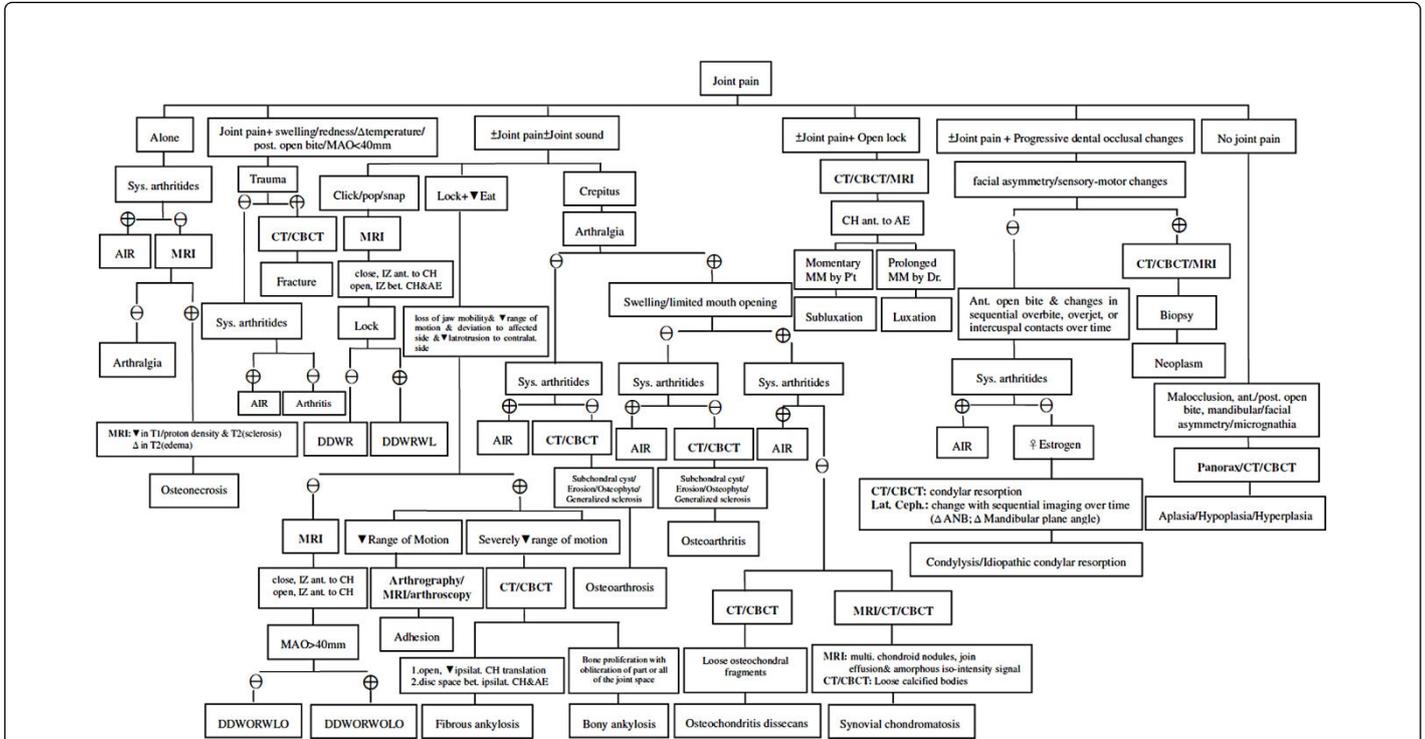


Figure 1. Lucid flowchart of the DC/TMD.

Note. ⊕= positive, ⊖= negative, ±= with or without, / = or, = limitation/ decrease, Δ= increase. AE= articular eminence, AIR= Consult Allergy, Immunology and Rheumatology Physicians, ant.= anterior; bet.= between, CBCT= Cone beam computed tomography, Ceph.= cephalometric film, CH= condylar head, CT= Computed Tomography, contralat.= contralateral, DDWR= disc displacement with reduction, DDWRWL= disc displacement with reduction with intermittent locking, DDWORWLO= disc displacement without reduction with limited opening, DDWORWOLO= disc displacement without reduction without limited opening, Dr.= doctor, IZ= intermediate zone, ipsilat.= ipsilateral, lat.= lateral, MAO= maximal assisted opening, MM= manipulative maneuver, MRI= Magnetic Resonance Imaging, multi.= multiple, Panorax= panoramic film, P't= patient, post.= posterior: Sys.= Systemic, Sys. arthritides= RF, anti-CCP, ANA, anti-ds DNA, anti-SSA(RO)/SSB(LA), HLA-B27, anti-Scl 70, T3, free T4, TSH, CRP, LDH, E.S.R, Uric acid, CBC/DC

All diagnoses (primary diagnosis) in this flowchart may be concomitant with other diagnoses (secondary diagnoses).

Providing an easier way to remember, flowchart could promote the learning efficiency and accuracy of TMD diagnosis for interns, junior residents, and interdisciplinary specialists, while detailed physical examinations and differential diagnosis still have to rely on 'Expanding the taxonomy of the DC/TMD' and 'DC/TMD.' In the end, we express our sincere appreciation once again to those authors of 'Expanding the taxonomy of the DC/TMD and DC/TMD.' Our enthusiasm for this area is undoubtedly inspired by their studies, endless discussions, devotions, and efforts.

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