

Surgical Versus Nonsurgical Management of Degenerative Joint Disease



Shravan Kumar Renapurkar, BDS, DMD

KEYWORDS

• Degenerative joint disease • TMJ arthralgia • Osteoarthritis • Osteoarthrosis

KEY POINTS

- Based on the stage of degeneration, the clinical features of degenerative joint disease include temporomandibular joint (TMJ) arthralgia, dysfunction, pain, malocclusion, facial/jaw deformity, and subsequent comorbidities.
- Early-stage disease without any malocclusion or deformity, when pain and limited function result from low-inflammatory/reactive changes, can be managed with nonsurgical modalities.
- When the disease is not amenable to nonsurgical treatment, minimally invasive procedures like arthrocentesis and arthroscopy are the first-line surgical treatments.
- In late stage, nonresponding patients, an open TMJ arthroplasty and reconstruction with an alloplastic total joint prosthesis are the options.
- The major goal of invasive surgical procedures is to improve form and function, with improvement in pain being a secondary benefit.

Degenerative joint disease (DJD) in the temporomandibular joint (TMJ) is a noninflammatory/low-inflammatory, progressive arthritic condition characterized by deterioration of the articular cartilage and subsequent changes in the underlying bone that results in debilitating pain, dysfunction, and possible deformity in end-stage disease. Both the terms osteoarthrosis and osteoarthritis have also been used to describe the clinicopathologic presentations.¹ Although some investigators differentiate these 2 terms on the basis of the presence of inflammation and joint changes, the difference is ambiguous and lacks high-level scientific support.² For the purpose of this article, the term degenerative joint disease (DJD) will be used to describe the condition, as endorsed in American Association of Oral and Maxillofacial Surgeons 2017 parameters of care.³ The Diagnostic Criteria for Temporomandibular Disorders also categorizes osteoarthritis and osteoarthrosis under DJD.⁴

CLINICAL AND IMAGING PRESENTATION OF DEGENERATIVE JOINT DISEASE

The course of DJD varies from one patient to another. Patients most commonly complain of pain in the TMJ, clicking or crepitus, and limitation in mouth opening. Severe cases also can present with a malocclusion or dentofacial deformity.

The diagnosis of DJD should always be confirmed with imaging modalities. Computed tomography (CT) shows bony changes well, whereas MRI will help in assessment of disc position, structure, and joint effusion (**Fig. 1**).⁵ Bony changes include surface erosion, subchondral cyst formation, condylar flattening, a “bird-beak” appearance with osteophyte formation, and loss of joint space⁴ (**Fig. 2**).

It is of interest that some patients may show significant radiographic changes but are asymptomatic, whereas others show minimal radiographic changes and have significant symptoms.

Disclosure: The author has nothing to disclose.

Department of Oral and Maxillofacial Surgery, Virginia Commonwealth University School of Dentistry, Wood Building Room 311C, 520 North 12th Street, Richmond, VA 23298, USA

E-mail address: srenapurkar@vcu.edu

Oral Maxillofacial Surg Clin N Am 30 (2018) 291–297

<https://doi.org/10.1016/j.coms.2018.04.005>

1042-3699/18/© 2018 Elsevier Inc. All rights reserved.

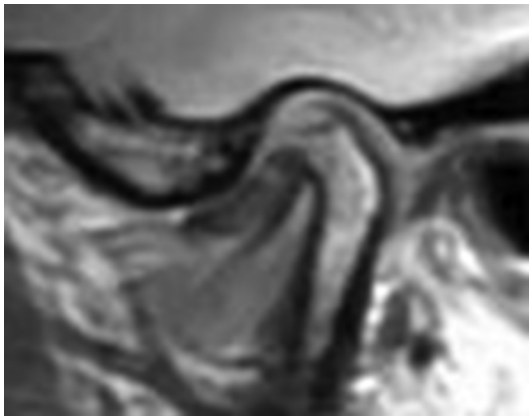


Fig. 1. MRI of TMJ with DJD and internal derangement shows anterior disc displacement and loss of the cortical outline at the superior surface of the condyle.

The diagnosis of DJD in the late stages is very straightforward based on the symptoms and articular changes, but diagnosis in the initial stages can be difficult, especially when there are few, if any, radiographic changes. Ruling out high-inflammatory arthritic conditions should also be part of the pretreatment workup. One of the commonly reported classifications for TMJ arthritis based on signs, symptoms, imaging, and management options is shown in [Table 1](#).

Pathogenesis of Degenerative Joint Disease

DJD of the TMJ is a chronic condition with gradual onset and a progressive nature. The exact cause is unknown, but it is commonly associated with microtrauma or macrotrauma, joint overload, and a resultant cascade of molecular events involving the generation of free radicals, the release of proinflammatory neuropeptides and other cytokines, and then degrading enzymes.⁶ This

cascade of events, combined with other contributing factors, such as age, sex, stress, medical comorbidities, hormones, diet, and so forth, creates a pathologic condition whereby the functional demands overcome the adaptive capacity of the TMJ resulting in degenerative changes. Displacement of the articular disc has also gathered significant interest as a factor that is associated with DJD.⁷

Management of Degenerative Joint Disease

The history, subjective symptoms, clinical examination findings, imaging findings, and stage of the disease should all be considered factors in determining an appropriate treatment plan. The biopsychosocial theory of TMJ dysfunction and arthralgia supports a multifactorial cause for DJD and generally encourages nonsurgical management as the primary treatment. Although DJD is considered a noninflammatory or low-inflammatory condition, secondary inflammation from the cascade of molecular events related to the pathophysiology contributes to the patient’s symptoms and disease progression.^{8,9} Hence, treatment of DJD aims at reducing or eliminating the inflammation and treating potential aggravating factors, thus supporting the adaptive process within the joint.

The stage of DJD plays an important role in the method of treatment selected. Early-stage DJD without significant bony changes should be treated with nonsurgical methods or minimally invasive surgical methods, such as arthrocentesis and arthroscopy, whereas late-stage disease with apertognathia and acquired mandibular retrognathia will require a combination of medical and surgical management.¹

The role of disc position, shape, and function in the cause of DJD of the TMJ has been discussed, but a cause-effect relationship cannot be proven. Some studies report disc displacement without reduction to be an important risk factor in the progression of DJD, but it seems to be a consequence of biochemical changes in the joint rather than the cause.¹⁰

CURRENT EVIDENCE FOR NONSURGICAL TREATMENT OF DEGENERATIVE JOINT DISEASE

Nonsurgical methods have been recommended as the first treatment of TMJ DJD.¹¹ These treatments include diet modification (soft, non-chewy); behavioral/lifestyle changes; pharmacotherapy with nonsteroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, antidepressants, antiepileptic agents, and corticosteroids

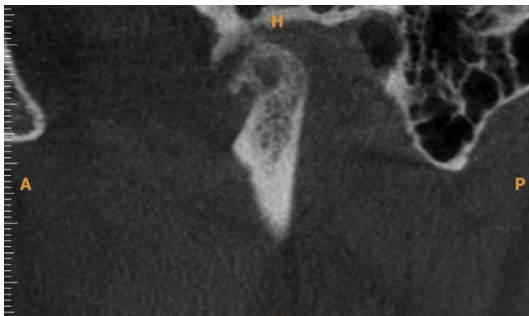


Fig. 2. Cone beam CT of TMJ with DJD shows flattening of the condylar head, “bird-beak” deformity with radiolucent “Ely” or subchondral cyst formation, and decrease of joint space.

Download English Version:

<https://daneshyari.com/en/article/8707044>

Download Persian Version:

<https://daneshyari.com/article/8707044>

[Daneshyari.com](https://daneshyari.com)