

JUVENILE IDIOPATHIC ARTHRITIS MASQUERADING AS TEMPOROMANDIBULAR JOINT DYSFUNCTION: A CASE REPORT OF BILATERAL CONDYLAR EROSION WITH ELY'S CYST

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ABSTRACT

Juvenile idiopathic arthritis (JIA) is the most common chronic rheumatologic disease of childhood, and the temporomandibular joint (TMJ) — often referred to as the "forgotten joint" is frequently involved, sometimes as the presenting site of disease. The disease is characterized by chronic synovitis, arthralgia, impaired joint mobility in at least one joint and erosion with destruction of subchondral bone and cartilage. Systemic involvement may or may not be associated with every subtype of the disease. This case highlights the importance of considering Juvenile Idiopathic Arthritis as a differential diagnosis in TMJ pain and dysfunction.

KEYWORDS: Juvenile idiopathic arthritis; Temporomandibular joint; Condylar resorption; Ely's cyst; Myofascial pain

1. INTRODUCTION:

Juvenile idiopathic arthritis (JIA) encompasses a heterogeneous group of chronic inflammatory arthritis of unknown etiology, defined by the onset of arthritis before 16 years of age and persistence of symptoms for at least six weeks. It is the most common chronic rheumatologic condition affecting the paediatric population.

The temporomandibular joint (TMJ), a synovial joint that is also the primary site of mandibular growth, can be involved in any subtype of JIA and at any stage of the disease.^[2,3] TMJ involvement has been reported in a wide range of patients — figures in the literature vary from roughly 17% to as high as 87%.^[4]

This report describes a 13-year-old girl who presented with several months of unilateral TMJ pain and clicking, in whom cone-beam computed tomography revealed bilateral condylar erosion and a cystic lesion of the condyle.

2. CASE REPORT:

A 13-year-old female patient reported to the department of Oral Medicine and Radiology with a chief complaint of pain on opening and closing of the mouth for the preceding five to six months. She reported that she had been asymptomatic until that time, when she began experiencing pain and clicking on the right side of the jaw during mastication. She had consulted a private practitioner and was prescribed medication (details unavailable), which provided only temporary relief after two doses. Subsequently, the pain became sharp and shooting in character, aggravated by chewing hard food and relieving spontaneously. On lifestyle evaluation, she followed a mixed diet and reported a history of psychological stress. On examination, bilateral TMJ clicking was noted, characterized by a late closing click and an early opening click, without any deviation of the mandible on opening or closing. On palpation, both the right medial pterygoid and right lateral pterygoid muscles were tender, each scoring 8 out of 10 on the Visual Analogue Scale (VAS), consistent with myofascial spasm.

Based on the clinical findings, a provisional diagnosis of Angle's Class I molar relationship with suspected bilateral internal derangement of the TMJ (Axis I, Group II — DC/TMD) and differential diagnosis as Myositis and juvenile idiopathic arthritis was considered.

However, Cone-beam computed tomography (CBCT) of the bilateral TMJs was performed which showed resorptive changes on the condylar head giving "beak appearance". There was presence of partly corticated focal area of radiolucency measuring about 1.6mm is seen in the lateral part of the condyle s/o Ely's Cyst.

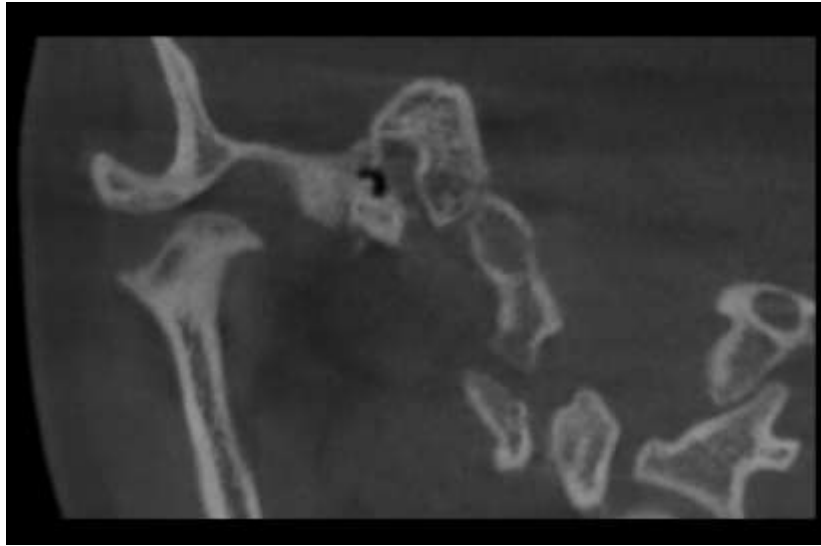


Fig 1: This is coronal section showing resorption or erosive changes on medial aspect of the right condylar head as beak appearance. Flattening of the condyle is noted.

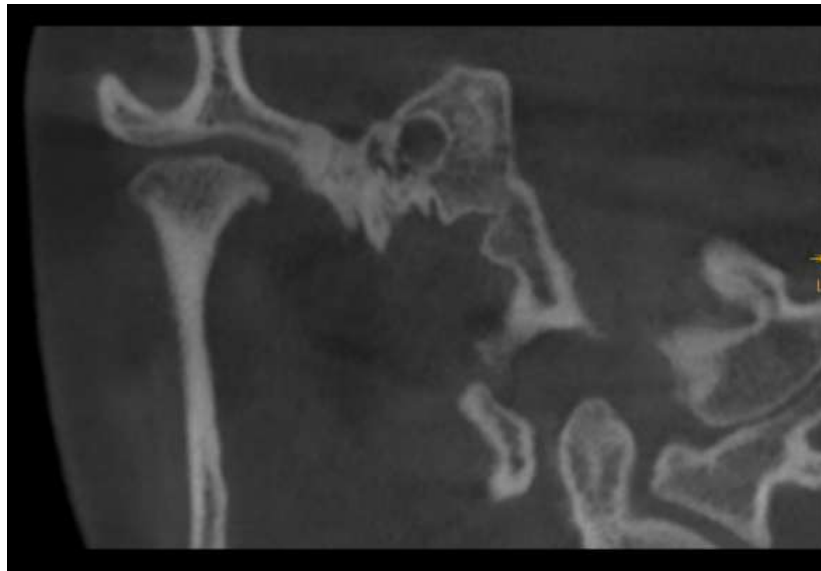


Fig 2: This is coronal section showing resorption or erosive changes on medial aspect of the left condylar head as beak appearance.

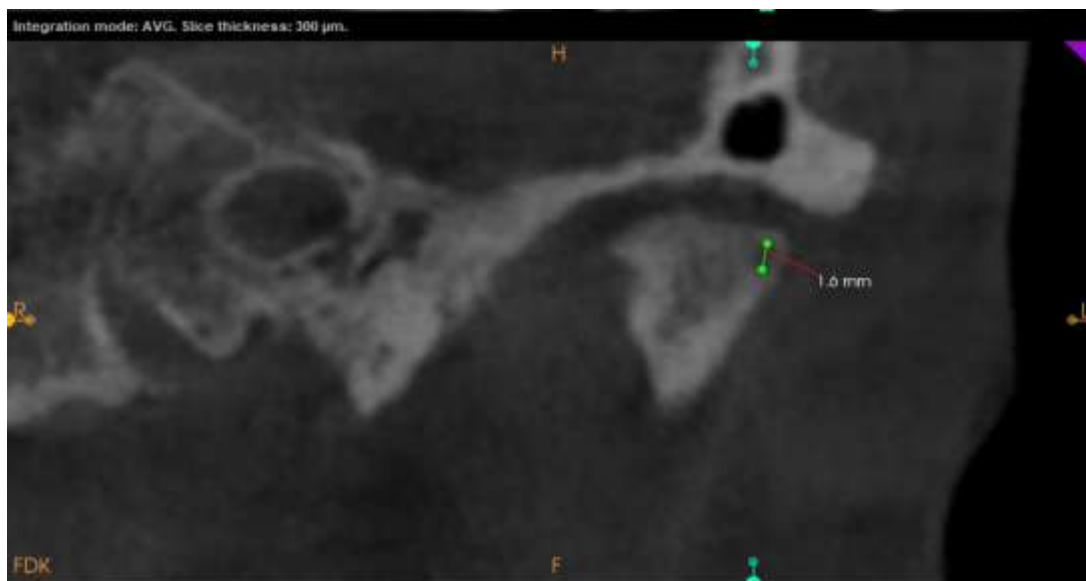


Fig 3: Presence of partly corticated focal area of radiolucency measuring about 1.6mm is seen in the lateral part of the condyle s/o Ely's Cyst.

Based on the radiographic findings, diagnosis of Juvenile Idiopathic Arthritis with cyst of left body of condyle was considered.

The patient was managed conservatively for symptomatic relief. A combination analgesic-muscle relaxant tablet (chlorzoxazone-paracetamol-diclofenac combination, brand name Flexon-MR) was prescribed twice daily for seven days, along with a soft diet and alternating hot and cold fomentation to the affected muscles along with low level laser therapy. It was given on right side of face at 660nm and 100mw for 8 mins for 1 week. This gave the patient relief.

3. DISCUSSION

Juvenile idiopathic arthritis remains the most common chronic rheumatic disease of childhood, and involvement of the TMJ is now recognized as considerably more frequent than was once appreciated.^[3] In all subtypes of JIA, the TMJ may be affected unilaterally or bilaterally, at any point in the disease course, and as in the present case may be one of the earliest or only clinically evident sites of joint involvement. Reported prevalence figures for TMJ involvement in JIA range widely, from roughly 17% up to 87%, a spread that largely reflects differences in diagnostic modality (clinical examination versus MRI) and disease subtype studied.^[4,7]

A literature review reveals that clicking, crackle, and pain are the most found criteria for the study of the juvenile TMJ. Moreover, the clinical symptoms of juvenile TMD change during the growth of the patients, making the analysis difficult, because previous published scientific articles did not divide patients into different age groups.

Imaging plays a central role both in diagnosis and in staging of TMJ involvement. MRI with gadolinium contrast is considered the most sensitive tool for detecting early synovial inflammation, effusion, and bone marrow edema, changes that typically precede any visible osseous change on plain imaging. Panoramic and cephalometric radiographs may show secondary growth disturbances such as osteopenia, flattened or "pencil-shaped" condyles, and an enlarged glenoid fossa, while CT and CBCT as used in this case are particularly useful for characterizing established osseous change, including condylar erosion, flattening, beak-like deformity, osteophyte formation, and anterosuperior condylar displacement.^[9]

Management of JIA with TMJ involvement is necessarily multidisciplinary. First-line pharmacologic therapy typically includes NSAIDs for symptomatic relief, though these have limited efficacy against the underlying joint inflammation when used alone. Disease-modifying anti-rheumatic drugs, particularly methotrexate, form the mainstay of systemic disease control, with leflunomide as an alternative in methotrexate-intolerant patients. Biologic agents TNF- α inhibitors such as etanercept and adalimumab, and IL-6 inhibitors such as tocilizumab are reserved for refractory or polyarticular/systemic disease. Beyond systemic therapy, dental and orthodontic management is essential: functional appliances or splints may help correct emerging malocclusion and micrognathia, severe skeletal deformity may eventually require surgical correction such as distraction osteogenesis, and physiotherapy with jaw exercises and thermal modalities helps preserve mobility and reduce the risk of ankylosis.^[10]

4. CONCLUSION

Temporomandibular joint involvement can be an early and sometimes isolated manifestation of juvenile idiopathic arthritis, frequently masquerading as a simple myofascial pain or internal derangement complaint in adolescent patients. Careful clinical examination combined with cross-sectional imaging such as CBCT or MRI is essential for early detection of condylar erosion, flattening, and cystic change, before irreversible growth disturbance occurs.

REFERENCES

1. Arabshahi B, Cron RQ. Temporomandibular joint arthritis in juvenile idiopathic arthritis: the forgotten joint. *Curr Opin Rheumatol*. 2006;18(5):490-495.
2. Abbass, M. M. S., Rady, D., El Moshay, S., Ahmed Radwan, I., Wadan, A.-H. S., Dörfer, C. E., & El-Sayed, K. M. F. (2024). The Temporomandibular Joint and the Human Body: A New Perspective on Cross Talk. *Dentistry Journal*, 12(11), 357. <https://doi.org/10.3390/dj12110357>
3. Ringold S, Cron RQ. The temporomandibular joint in juvenile idiopathic arthritis: frequently used and frequently arthritic. *Pediatr Rheumatol Online J*. 2009;7:11.
4. Cannizzaro E, Schroeder S, Müller LM, Kellenberger CJ, Saurenmann RK. Temporomandibular joint involvement in children with juvenile idiopathic arthritis: a comprehensive review. *J Craniomaxillofac Surg*. 2016 (comprehensive review, TMJ and JIA).
5. Pinto JRR, Pedron IG, Utumi ER, Miranda ME, Pinto ECP, Nucci LP. Temporomandibular joint disorders as the only manifestation of juvenile idiopathic arthritis: a case report. *Einstein (Sao Paulo)*. 2018;16(3):eRC4003.
6. A rare case of severe isolated temporomandibular joint arthritis in juvenile idiopathic arthritis: case report. *J Clin Med Case Rep*. 2023.
7. Costello A, Twilt M, Lerman MA; CARRA Registry Investigators. Provider assessment of the temporomandibular joint in juvenile idiopathic arthritis: a retrospective analysis from the CARRA database. *Pediatr Rheumatol Online J*. 2024;22(1):41.
8. Kellenberger CJ, Junhasavasdikul T, Tolend M, Doria AS. Temporomandibular joint atlas for detection and grading of juvenile idiopathic arthritis involvement by magnetic resonance imaging. *Pediatr Radiol*. 2018;48(3):411-426.
9. Twilt M, Schulten AJ, Nicolaas P, Dülger A, van Suijlekom-Smit LW. Facioskeletal changes in children with juvenile idiopathic arthritis and TMJ involvement. *J World Fed Orthod*. 2021 (Preliminary report, Children's Healthcare of Atlanta cohort).
10. Synodinos PN, Polyzois I. Oral health and orthodontic considerations in children with juvenile idiopathic arthritis: review of the literature and report of a case. *J Ir Dent Assoc*. 2008;54(1):29-36.