

Images of Interest / Imagens de Interesse

Chronic Septic Arthritis of the Temporomandibular Joint: A Case Report

*Artrite Sética Crónica da Articulação Temporomandibular: Relato de Caso*João Dourado¹, Helena Martins Gomes², Maria Inês Rodrigues¹, Rute de Paula¹, Duarte Rosa^{1,3}¹Serviço de Radiologia, Unidade Local de Saúde de São João, Porto, Portugal²Serviço de Radiologia, Unidade Local de Saúde de Viseu Dão-Lafões, Viseu, Portugal³Faculdade de Medicina, Universidade do Porto, Porto, Portugal

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Received: 05/01/2025

Accepted: 17/04/2025

Published: 19/11/2025



Abstract

Septic arthritis (SA) of the temporomandibular joint (TMJ) is a rare condition that can lead to joint destruction and chronic dysfunction in cases of delayed diagnosis.

We report the case of a 75-year-old man with metabolic syndrome and a history of recurrent acute external otitis who presented with preauricular swelling and referred pain to the right TMJ for at least six months. Dedicated imaging of the TMJ revealed signs suggestive of advanced SA, namely erosion of the mandibular condyle secondary to osteomyelitis, periarthral inflammatory changes and ipsilateral otomastoiditis. Following percutaneous drainage of the TMJ and intravenous antibiotic therapy, the patient had a favourable clinical outcome.

Keywords

Temporomandibular joint; Arthritis infectious;
Multimodal imaging.

Resumo

A artrite séptica (AS) da articulação temporomandibular (ATM) é uma condição rara, que pode levar à destruição articular e disfunção crónica em casos de diagnóstico tardio.

Descrevemos o caso de um homem de 75 anos com síndrome metabólica e antecedentes de otites externas agudas de repetição que apresentou edema pré-auricular e dor referida à ATM direita, com pelo menos seis meses de evolução. Estudos imagiológicos dirigidos à ATM revelaram sinais sugestivos de AS avançada, com destruição óssea subcondral do côndilo secundária a osteomielite, bem como envolvimento inflamatório dos espaços cervicais adjacentes e otomastoidite ipsilateral. Após drenagem percutânea da ATM e terapêutica antibiótica endovenosa, o paciente apresentou evolução clínica favorável.

Palavras-chave

Articulação temporomandibular; Artrite infecciosa; Imagem multimodal.

Case Report

A 75-year-old male with a medical history of type 2 diabetes mellitus, hypertension, and dyslipidaemia presented with a six-month history of preauricular swelling, otalgia, and pain in the right temporomandibular joint (TMJ). These symptoms were associated with recurrent episodes of acute otitis externa that were treated with several oral antibiotics. Clinical examination revealed marked tenderness over the right TMJ, mild trismus, and erythema and swelling of the ipsilateral preauricular area.

Further investigation was done with both computed tomography (CT) and magnetic resonance imaging (MRI) of the TMJ. CT revealed significant abnormalities, including large right TMJ effusion with synovial enhancement and extensive bony changes (Figure 1). Notably, subchondral cortical

destruction of the mandibular condyle was accompanied by a periosteal reaction (Figure 1B). Additionally, adjacent soft tissue oedema involving the masticator, parapharyngeal, and parotid spaces was observed. MRI corroborated these findings (Figure 2). It provided supplementary detail, revealing hyperintensity of the mandibular condyle bone marrow on fat-saturated T2-weighted sequences and hypointensity on T1-weighted sequences, with prominent post-contrast enhancement (Figure 3). These imaging characteristics were consistent with advanced chronic septic arthritis (SA) of the TMJ and concurrent osteomyelitis. Ipsilateral otomastoiditis was also identified.

The patient was admitted for percutaneous drainage of the joint, which yielded purulent material. However, microbiological cultures were negative, likely due to the administration of empirical antibiotics prior to sample



Figure 1 – Axial soft tissue window (A) and coronal bone window (B) contrast-enhanced CT images showing right TMJ effusion with synovial enhancement (asterisk) and adjacent soft tissue oedema (A), as well as subchondral cortical destruction of the mandibular condyle (arrowhead) and periosteal reaction (arrow, B).

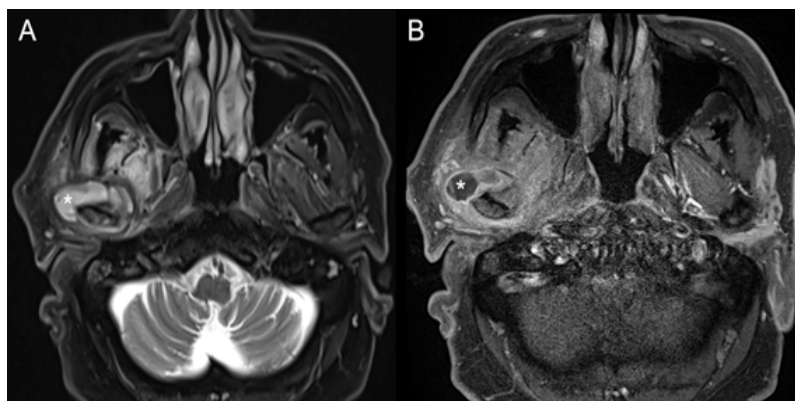


Figure 2 – Axial fat-saturated T2-weighted (A) and axial fat-saturated T1-weighted after gadolinium injection (B) MR images showing right TMJ effusion (asterisks) with synovial enhancement and adjacent soft tissue oedema.

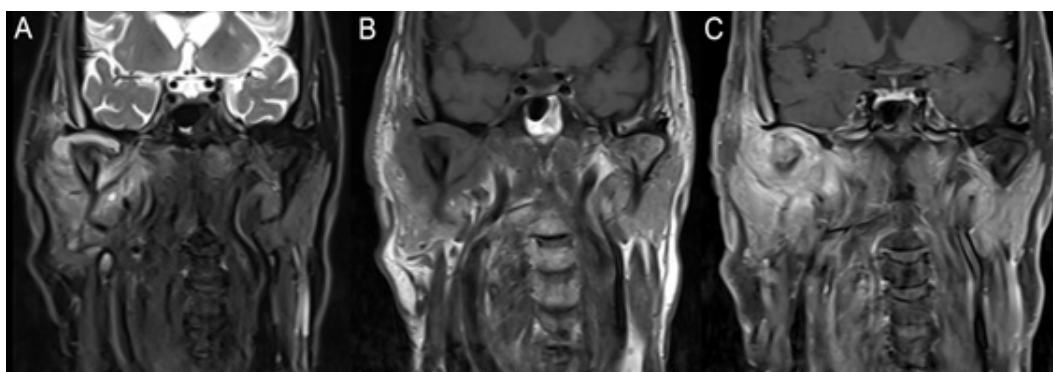


Figure 3 – Coronal fat-saturated T2-weighted (A), T1-weighted (B) and fat-saturated T1-weighted after gadolinium injection (C) MR images showing findings consistent with right mandibular condyle osteomyelitis.

collection. Intravenous antibiotic therapy was initiated, leading to significant clinical improvement. The patient was discharged after 15 days with a course of oral antibiotics for continued treatment.

Discussion

Chronic SA of the TMJ is a rare condition characterised by progressive joint destruction, often due to delayed diagnosis or suboptimal initial treatment.^{1,2} The prolonged disease course in this case -spanning six months- resulted in severe bone involvement, with osteomyelitis and cortical destruction. Risk factors such as diabetes mellitus and recurrent infections, including otomastoiditis, predispose patients to such outcomes.^{1,2}

The diagnosis is mainly clinical and laboratory, but imaging studies help support the diagnosis and characterise joint changes and assess extension to surrounding cervical spaces.^{1,2,3} MRI allows detailed visualisation of joint effusion, synovial enhancement, surrounding soft tissue and osteomyelitis.^{2,3} CT has a greater sensitivity to identify bony

changes like cortical destruction and periosteal reaction.² The lack of pathogen identification in this case underscores the limitations of microbiological confirmation, particularly when empirical antibiotics are initiated prior to sample collection.

Management involves a combination of surgical and medical approaches.^{1,2} Joint aspiration aids in decompressing the joint and removing infectious material, while antibiotic therapy remains the cornerstone of treatment.^{1,2} In chronic cases, prolonged antibiotic courses or surgical drainage may be necessary to fully eradicate the infection and prevent recurrence.^{1,2}

Conclusion

SA of the TMJ should be considered in patients presenting with persistent symptoms and significant risk factors. Early recognition and intervention are critical to preventing severe complications. Imaging plays an important role in diagnosis, guiding interventions and supporting comprehensive management to optimise outcomes and minimise morbidity.

Ethical Disclosures / Divulgações Éticas

Conflicts of interest: The authors have no conflicts of interest to declare.

Conflitos de interesse: Os autores declaram não possuir conflitos de interesse.

Financing Support: This work has not received any contribution, grant or scholarship.

Suporte financeiro: O presente trabalho não foi suportado por nenhum subsídio ou bolsa.

Confidentiality of data: The authors declare that they have followed the protocols of their work center on the publication of data from patients.

Confidencialidade dos dados: Os autores declaram ter seguido os protocolos do seu centro de trabalho acerca da publicação dos dados de doentes.

Protection of human and animal subjects: The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

Proteção de pessoas e animais: Os autores declaram que os procedimentos seguidos estavam de acordo com os regulamentos estabelecidos pelos responsáveis da Comissão de Investigação Clínica e Ética e de acordo com a Declaração de Helsínquia da Associação Médica Mundial.

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