



Revista Española de Cirugía Oral y Maxilofacial

Publicación Oficial de la SECOM CyC Sociedad Española de Cirugía Oral y Maxilofacial y de Cabeza y Cuello

Artículo Aceptado para su pre-publicación / Article Accepted for pre-publication

Título / Title:

Condromatosis sinovial de la articulación temporomandibular: a propósito de un caso que destaca las dificultades diagnósticas / Temporomandibular joint synovial chondromatosis: a case report highlighting diagnostic pitfalls

Autores / Authors:

Aicha Benabdallah, Mohammed Charaf Eddine Chatar, Zainab El Zouiti, Adil Eabdenbi Tsen

DOI: [10.20986/recom.2026.1754/2026](https://doi.org/10.20986/recom.2026.1754/2026)

Instrucciones de citación para el artículo / Citation instructions for the article:

Benabdallah Aicha, Chatar Mohammed Charaf Eddine, El Zouiti Zainab, Eabdenbi Tsen Adil. Condromatosis sinovial de la articulación temporomandibular: a propósito de un caso que destaca las dificultades diagnósticas / Temporomandibular joint synovial chondromatosis: a case report highlighting diagnostic pitfalls. j.maxilo 2026. doi: 10.20986/recom.2026.1754/2026.



Este es un archivo PDF de un manuscrito inédito que ha sido aceptado para su publicación en la *Revista Española de Cirugía Oral y Maxilofacial*. Como un servicio a nuestros clientes estamos proporcionando esta primera versión del manuscrito en estado de prepublicación. El manuscrito será sometido a la corrección de estilo final, composición y revisión de la prueba resultante antes de que se publique en su forma final. Tenga en cuenta que durante el proceso de producción se pueden dar errores, lo que podría afectar el contenido final. El copyright y todos los derechos legales que se aplican al artículo pertenecen a la *Revista Española de Cirugía Oral y Maxilofacial*.

TEMPOROMANDIBULAR JOINT SYNOVIAL CHONDROMATOSIS: A CASE REPORT HIGHLIGHTING DIAGNOSTIC PITFALLS

CONDROMATOSIS SINOVIAL DE LA ARTICULACIÓN TEMPOROMANDIBULAR: A PROPÓSITO DE UN CASO QUE DESTACA LAS DIFICULTADES DIAGNÓSTICAS

Aicha Benabdallah*, Charaf Eddine Mohammed Chatar, Zainab El Zouiti and Adil Eabdenbi Tsen

Faculty of Medicine and Pharmacy, Mohammed First University. Department of Oral and Maxillofacial Surgery. Mohammed VI University Hospital. Oujda, Morocco

***CORRESPONDENCE:**

Aicha Benabdallah

benabdallah.aicha712@gmail.com

Received: 12-04-2026

Accepted: 19-09-2026

ABSTRACT

Synovial chondromatosis of the temporomandibular joint (TMJ) is a rare benign disorder characterized by cartilaginous metaplasia of the synovial membrane, leading to the formation of multiple intra-articular loose bodies. Its clinical presentation is often nonspecific and may mimic more common conditions such as temporomandibular disorders, arthritis, or parotid gland tumors, resulting in frequent diagnostic delays. We report the case of a 29-year-old woman presenting with a painful preauricular swelling and progressive limitation of mouth opening over a two-month period. Initial imaging suggested an infectious process involving the masticatory muscles associated with TMJ arthritis, and the patient was treated with antibiotic therapy without improvement. Further evaluation with magnetic resonance imaging and reanalysis of computed tomography revealed joint effusion, condylar erosion, and multiple intra-articular loose bodies, raising suspicion of

synovial chondromatosis. Surgical management was performed via an open approach, allowing complete removal of the loose bodies and synovial debridement. Histopathological examination confirmed the diagnosis. The postoperative course was favorable, with marked clinical improvement. This case highlights the diagnostic challenges associated with TMJ synovial chondromatosis and emphasizes the importance of considering this condition in patients with persistent preauricular swelling unresponsive to conventional treatment. Early recognition and appropriate surgical management are essential to achieve optimal functional outcomes and to reduce the risk of recurrence.

Keywords: Temporomandibular joint, synovial chondromatosis, loose bodies, preauricular swelling.

RESUMEN

La condromatosis sinovial de la articulación temporomandibular (ATM) es una enfermedad benigna poco frecuente, caracterizada por metaplasia cartilaginosa de la membrana sinovial, que conduce a la formación de múltiples cuerpos libres intrarticulares. Su presentación clínica suele ser inespecífica y puede simular enfermedades más frecuentes, como los trastornos temporomandibulares, la artritis o los tumores de la glándula parótida, lo que da lugar con frecuencia a retrasos diagnósticos. Presentamos el caso de una paciente de 29 años que consultó por tumefacción preauricular dolorosa y limitación progresiva de la apertura bucal durante dos meses. Los estudios iniciales sugirieron un proceso infeccioso que afectaba a los músculos masticadores asociado a artritis de la ATM, por lo que se instauró tratamiento antibiótico sin mejoría clínica. La reevaluación mediante resonancia magnética y tomografía computarizada evidenció derrame articular, erosión condilar y múltiples cuerpos libres intrarticulares, lo que orientó hacia el diagnóstico de condromatosis sinovial. Se realizó tratamiento quirúrgico mediante abordaje abierto, con exéresis completa de los cuerpos libres y desbridamiento sinovial. El estudio histopatológico confirmó el diagnóstico. La evolución postoperatoria fue favorable, con una notable mejoría clínica. Este caso pone de relieve las dificultades diagnósticas de esta entidad y destaca la importancia de considerarla ante tumefacciones preauriculares persistentes que no responden al

tratamiento convencional. El reconocimiento precoz y el tratamiento quirúrgico adecuado son fundamentales para lograr resultados funcionales óptimos y reducir el riesgo de recidiva.

Palabras clave: Articulación temporomandibular, condromatosis sinovial, cuerpos libres, tumefacción preauricular.

INTRODUCTION

Synovial chondromatosis is a benign nodular cartilaginous proliferation of synovial joints. It generally affects large joints, such as the knee, hip, elbow, wrist, ankle, and shoulder, and more rarely the temporomandibular joint (TMJ). It is primarily characterized by chondroid metaplasia of the synovial membrane, resulting in the intra-articular formation of cartilaginous or osteochondral loose bodies¹.

Synovial chondromatosis of the TMJ most commonly occurs in young to middle-aged adults, with a slight female predominance, and its main symptoms include preauricular swelling, pain, limited mouth opening or jaw locking, and joint crepitus². Patients with TMJ synovial chondromatosis may initially be misdiagnosed as having parotid gland tumors or inflammatory TMJ disorders, making diagnosis difficult and sometimes delayed³.

Imaging plays a key role in the diagnosis, allowing visualization of characteristic intra-articular calcifications, non-calcified forms, and synovial involvement⁴.

Treatment is primarily surgical, involving the removal of loose bodies combined with synovectomy. Arthroscopy provides a minimally invasive diagnostic and therapeutic option, particularly for disease confined to the joint space, allowing direct visualization and removal of loose bodies with possible partial synovectomy⁵, with a generally favorable prognosis despite a risk of recurrence².

We report and discuss the diagnosis and surgical management of a case of unilateral synovial chondromatosis of the TMJ, initially misdiagnosed as an infectious process, highlighting the diagnostic challenges associated with this rare condition.

CASE REPORT

A 29-year-old woman with no significant medical history presented to our Department of Oral and Maxillofacial Surgery after consulting several other physicians. She reported a painful swelling of the right TMJ that had developed over the previous two months. Initial management with muscle relaxants and anti-inflammatory drugs failed to provide any clinical improvement.

The patient denied any history of trauma. Clinical examination revealed a painful limitation of mouth opening, associated with joint crepitus. On palpation, a soft swelling was identified in the right pretragal region.

The patient underwent a comprehensive assessment, including an otolaryngological examination, to rule out a contiguous source of infection.

Computed tomography (CT) initially revealed an abscess-like collection involving the right lateral pterygoid and masseter muscles (Figure 1), associated with right TMJ arthritis. The patient then received intravenous antibiotic therapy, followed by oral antibiotics, but there was no improvement. This initial misdiagnosis illustrates the diagnostic difficulty of this condition.

Given the patient's lack of improvement, magnetic resonance imaging (MRI) and a re-evaluation of the CT scan (Figure 2) revealed inflammation of the right TMJ, with joint effusion, condylar erosion, and the presence of intra-articular loose bodies, raising suspicion of synovial chondromatosis (Figure 3).

The patient underwent surgical treatment performed via a standard open approach using a Redon incision, dissection down to the TMJ, and joint exploration with removal of loose bodies and irrigation using povidone-iodine and saline prior to closure. Numerous loose bodies were identified and removed intraoperatively (Figure 4).

The postoperative course was uneventful, and the patient was discharged early, with analgesic therapy and an initial soft diet, followed by a gradual return to a normal diet. A marked clinical improvement was observed at the follow-up visit.

The diagnosis of TMJ synovial chondromatosis was confirmed by histological examination, which demonstrated the cartilaginous nature of the loose bodies (Figure 5).

Clinical and radiological follow-up was performed for 2 years postoperatively. The patient exhibited complete clinical recovery, with no recurrence of joint effusion and complete resolution of crepitus and hearing loss. Furthermore, radiographic examinations performed

at 6 months, 1 year, and 2 years after surgery showed no evidence of recurrence or residual disease on the operated side.

DISCUSSION

Synovial chondromatosis of the TMJ is an uncommon and benign disorder that was first described by Axhausen in 1933⁶. Its etiology and pathogenesis remain poorly understood, but several mechanisms have been proposed, including trauma, local infection, and embryological disruption⁷.

From a pathophysiological perspective, Milgram's classification identifies three stages of progression: an initial active phase characterized by synovial metaplasia without loose bodies, followed by a transitional phase involving the formation and detachment of cartilaginous nodules, and finally an inactive phase marked by the exclusive presence of intra-articular loose bodies without synovial activity. The number of these bodies may vary and reach up to a hundred; these nodules may eventually ossify, forming osteochondral bodies⁸. This classification is clinically useful for understanding disease progression and guiding therapeutic strategy. In our case, the presence of numerous intra-articular loose bodies associated with condylar erosion suggests an advanced stage of the disease.

Although chondromatosis is well documented in the large joints, its involvement of the TMJ remains uncommon, which explains the frequently reported diagnostic difficulties and delays in treatment. It can present in various ways, depending on the size and location of the cartilaginous bodies. The clinical presentation is similar to that of temporomandibular disorders (TMD). Several clinical signs may be observed, including pain, joint noises (clicking or crepitus), deviation, and limited mouth opening, preauricular swelling, and locking episodes.

Because the symptoms are nonspecific, diagnosis is often delayed and the condition may be confused with other more common conditions, such as arthritis or TMJ disorders⁹. Consequently, anti-inflammatory medications are frequently prescribed, and the time to diagnosis is often prolonged. In our case, the initial suspicion of an infectious process with a presumed masticatory muscle abscess and TMJ arthritis illustrates this diagnostic pitfall. The lack of improvement with antibiotic therapy should prompt a reconsideration of the

diagnosis and investigation for non-infectious causes.

Imaging is a key component of diagnosis. Standard radiography may visualize cartilaginous nodules if they are calcified; however, CT and MRI are more sensitive and can reveal joint effusion and multiple small, rounded intra-articular lesions corresponding to the loose bodies. Typical MRI findings show multiple hypointense nodules within T2-hyperintense joint fluid, joint effusion, capsular distension, and synovial thickening with post-gadolinium enhancement¹⁰. In early-stage disease, however, loose bodies may not yet be calcified or ossified and the images may be nonspecific, leading to misinterpretation, as was initially the case with our patient. Nevertheless, imaging alone is not sufficient for a definitive diagnosis. Histopathological examination confirms the diagnosis and objectively identifies the presence of cartilaginous nodules composed of chondrocytes embedded in a cartilaginous matrix, sometimes with moderate atypia without evidence of malignancy¹¹.

Treatment is surgical, involving removal of intra-articular loose bodies combined with excision of the metaplastic synovial tissue. Surgery remains the only effective treatment, and excision is often performed via conventional arthrotomy. Arthroscopic management, however, may also be considered as a minimally invasive diagnostic and therapeutic option, particularly for disease confined to the joint space, allowing visualization and removal of loose bodies with possible partial synovectomy^{5,12}. Open surgery remains preferable for large or numerous loose bodies, extra-articular extension, or recurrent disease. The postoperative course is generally favorable, with a marked improvement in functional symptoms. However, recurrence is possible, particularly in cases of incomplete synovectomy or persistent synovial activity. Malignant transformation is exceptional and remains controversial in the literature¹³.

In conclusion, synovial chondromatosis of the TMJ is a rare, benign condition. It is characterized by the formation of multiple small cartilaginous nodules within the joint. It often poses a diagnostic challenge because it can be mistaken for a parotid tumor, arthritis, or temporomandibular disorder. Accurate diagnosis requires a combination of clinical and radiological findings, as well as histological confirmation. Surgical treatment, based on the removal of loose bodies combined with synovectomy, generally leads to a favorable outcome with marked functional improvement. Long-term follow-up is nevertheless recommended because of the low but real risk of recurrence and the exceptional possibility

of malignant transformation.

DISCLOSURES

The authors declare that they have no conflicts of interest related to this article.

PATIENT CONSENT

The patient has provided informed consent for the publication of this case report.

FUNDING

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

REFERENCES

1. Meng J, Guo C, Yi B, Zhao Y, Luo H, Ma X. Clinical and radiologic findings of synovial chondromatosis affecting the temporomandibular joint. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2010;109(3):441-8. DOI: 10.1016/j.tripleo.2009.09.036.
2. Benslama L, Schouman T, Toure S, Chardain J, Goudot P. Synovial chondromatosis of the temporomandibular joint: report and analysis of 12 cases. *J Stomatol Oral Maxillofac Surg.* 2019;120(5):476-9. DOI: 10.1016/j.jormas.2018.12.004.
3. Guarda-Nardini L, Piccotti F, Ferronato G, Manfredini D. Synovial chondromatosis of the temporomandibular joint: a case description with systematic literature review. *Int J Oral Maxillofac Surg.* 2010;39(8):745-55. DOI: 10.1016/j.ijom.2010.03.028.
4. Zhang Y, Yu F, Long X, Fang W. Imaging features of temporomandibular joint synovial chondromatosis with associated osseous degenerative changes. *Int J Oral Maxillofac Surg.* 2024;53(4):311-8. DOI: 10.1016/j.ijom.2023.09.012.
5. Brabyn PJ, Capote A, Muñoz-Guerra MF, Zylberberg I, Rodríguez-Campo FJ, Naval-Gías L. Arthroscopic management of synovial chondromatosis of the temporomandibular

- joint. Case series and systematic review. *J Maxillofac Oral Surg.* 2018;17(4):401-9. DOI: 10.1007/s12663-018-1102-7.
6. Axhausen G. Pathologie und Therapie des Kiefergelenkes. *Fortschr Zahnheilk.* 1933;9:171-86.
 7. Deboise A, Roche Y. Synovial chondromatosis of the temporomandibular joint possibly secondary to trauma. *Int J Oral Maxillofac Surg.* 1991;20(2):90-2. DOI: 10.1016/S0901-5027(05)80714-3.
 8. Milgram JW. Synovial osteochondromatosis: a histopathological study of thirty cases. *J Bone Joint Surg Am.* 1977;59(6):792-801.
 9. Gonzalez LV, López JP, Orjuela MP, Mejía M, Gallo-Orjuela DM, Granizo López RM. Diagnosis and management of temporomandibular joint synovial chondromatosis: a systematic review. *J Craniomaxillofac Surg.* 2023;51(9):551-9. DOI: 10.1016/j.jcms.2023.07.008.
 10. Jang BG, Huh KH, Kang JH, Kim JE, Yi WJ, Heo MS, et al. Imaging features of synovial chondromatosis of the temporomandibular joint: a report of 34 cases. *Clin Radiol.* 2021;76(8):627.e1-627.e11. DOI: 10.1016/j.crad.2021.02.020.
 11. Kahraman AS, Kahraman B, Dogan M, Firat C, Samdanci E, Celik T. Synovial chondromatosis of the temporomandibular joint: radiologic and histopathologic findings. *J Craniofac Surg.* 2012;23(4):1211-3. DOI: 10.1097/SCS.0b013e3182564a6e.
 12. Sanromán JF, López AC, Badiola IA, Ferro MF, de Sánchez AL. Indications of arthroscopy in the treatment of synovial chondromatosis of the temporomandibular joint: report of 5 new cases. *J Oral Maxillofac Surg.* 2008;66(8):1694-9. DOI: 10.1016/j.joms.2007.09.028.
 13. Barraclough O, Wilson G, Power A. Synovial chondromatosis of the temporomandibular joint: a case report. *Ann R Coll Surg Engl.* 2020;102(8):e213-5. DOI: 10.1308/rcsann.2020.0125.

Figure 1. Axial (A) and coronal (B) CT images showing inflammatory infiltration and a hypodense collection suggestive of abscess formation.

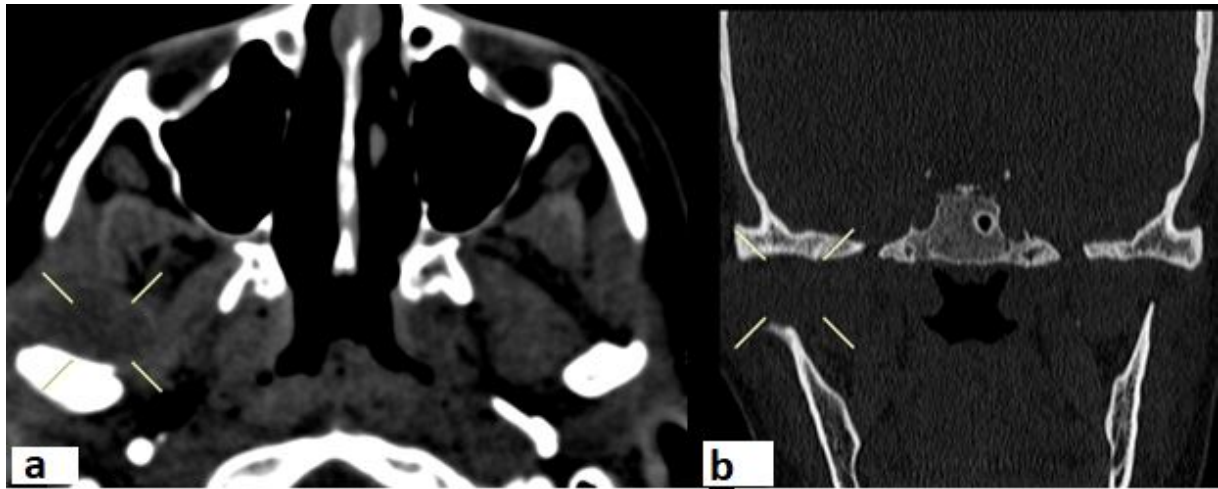


Figure 2. Coronal CT images (bone window) showing irregularity and cortical erosion of the right mandibular condyle.



Figure 3. Coronal T2-weighted MRI of the right temporomandibular joint showing amorphous tissue of intermediate signal intensity with low-signal-intensity nodules and a small high-signal-intensity joint effusion.

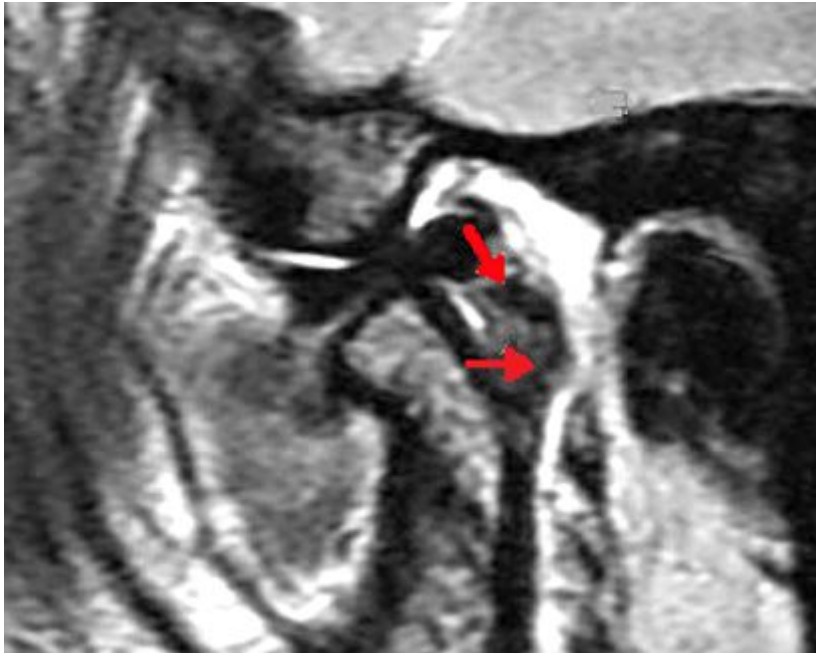


Figure 4. Intra-articular loose bodies removed during surgery.



Figure 5. Histopathological findings. A: low magnification. B: high magnification.

