

Diagnosis and treatment of synovial chondromatosis of the TMJ: a clinical case

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Summary

Synovial chondromatosis is a rare, benign, chronic, progressive and proliferative lesion that usually affects large joints. This disease is characterized by the development of cartilaginous nodules within the space of synovial joints, tendon sheaths or cases; the nodules subsequently degrade, detach and form free-floating, calcified bodies within the joint space. In 1933, Axhausen described the first case of synovial chondromatosis affecting the temporomandibular joint. The aetiology still remains unknown, but a history of trauma and inflammation is often found. Clinical symptoms of chondromatosis affecting the TMJ are often characterized by swelling, pain, headache, crepitation, malocclusion and joint dysfunction. The big challenge concerning synovial chondromatosis is to suspect and establish a correct diagnosis. These nonspecific initial signs and symptoms may mimic other nonspecific TMJ's diseases and can easily lead to a delay in diagnosis or a misdiagnosis. Here we present a case of synovial chondromatosis of the TMJ and the appropriate diagnostic and treatment performed.

Key words: temporomandibular joint, chondrocalcinosis, TMJ surgery.

Introduction

Synovial chondromatosis is a rare, benign, chronic, progressive and proliferative lesion that usually affects large joints (1). This disease is characterized by the development of cartilaginous nodules within the space of synovial joints, tendon sheaths or cases; the nodules subsequently degrade, detach and form free-floating, calcified bodies within the joint space. In 1933, Axhausen (2) described the first case of synovial chondromatosis affecting the temporomandibular joint. The aetiology still remains unknown, but a history of trauma and inflammation is often found (3, 4). Clinical symptoms of chondromatosis affecting the TMJ are often characterized by swelling, pain, headache, crepitation, malocclusion and joint dysfunction. The big challenge concerning synovial chondromatosis is to suspect and establish a correct diagnosis. These nonspecific initial signs and symptoms may mimic other nonspecific TMJ's diseases and can easily lead to a delay in diagnosis or a misdiagnosis. Here we present a case of synovial chondromatosis of the TMJ and the appropriate diagnostic and treatment performed.

Case report

A 60 year-old Caucasian woman referred to our Department of Maxillofacial surgery, swelling in the left pretragic preauricular region (Fig. 1).

Her medical history revealed, nonspecific pain, malocclusion and headaches. She didn't receive any specific diagnosis during the years and she was subjected to many orthopantomographic x-ray (Fig. 2) and orthodontic treatment for many years without any improvement before admission in our department.

She was subjected to a MRI of the TMJ, which reported on the left side a huge serous effusion involving the superior compartment, above ligaments of the retrodiscal tissue. The liquid component of the spillage was even studied through dynamic acquisitions showing its mobility and its morphological changes resulting from condylar and meniscal movements.

The patient referred us that she performed arthrocentesis (5) and anti-inflammatory therapy yet in another medical structure without any benefits. After a year of worsening symptoms, the patient performed CT scan, which showed the presence of reactive tissue, fluid content in the joint capsule and fragmentation of the cortical bone (Fig. 3).

According to the patient's history we decided then to



Figure 1. Patient with left pretragic preauricular swelling.

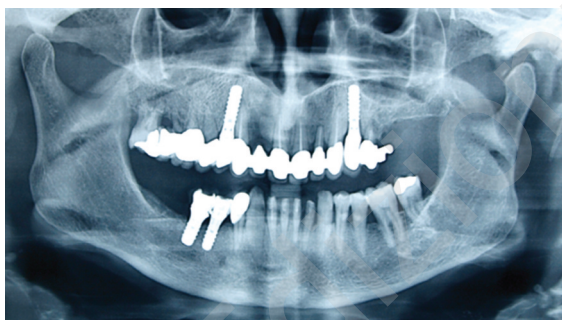


Figure 2. Orthopantomogram x-ray.

treat her with TMJ open surgery (6). The patient's left TMJ was explored through a preauricular approach; the joint capsule was opened to expose the upper joint space. A white, gritty and parenchymatous mass was removed from the anteromedial aspect of the upper joint space to the condyle head (Fig. 4). This material was sent for histologic and citologic examination together with portion of articular capsule. Minimal remodeling of the glenoid fossa was performed. No recurrence was apparent six months after the operation.

Histologic examination of the material composed of fibrocartilage showed a focal cluster of hematoxylin crystalline deposition in proximity to neoangiogenesis area and little chronic inflammation cells (7). This suggested a nonspecific chondrocalcinosis.

The patient showed good functional recovery after surgery and a complications free follow-up (Figs. 5, 6).

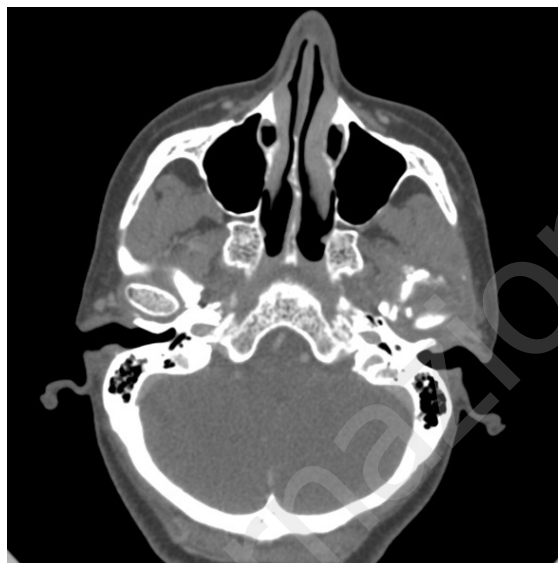


Figure 3. CT scan image.

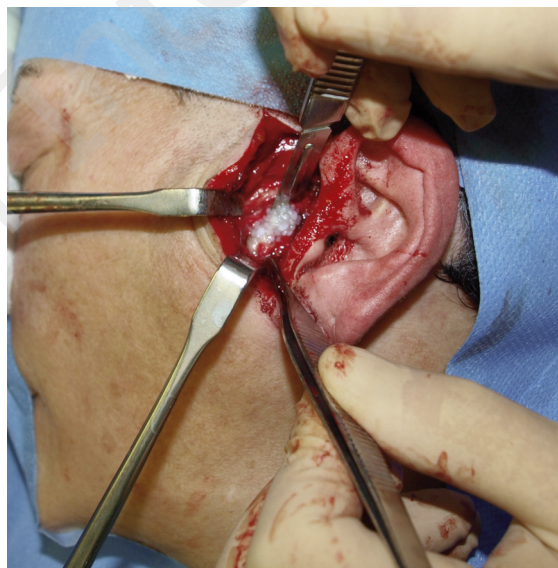


Figure 4. White, gritty and parenchymatous mass removed.

Discussion

Synovial chondromatosis is a rare, benign process that typically affects large joints of young adults. Although it more commonly involves the knee, elbow, and hip, it may occur in the temporomandibular joint (TMJ). This disease is characterized by the development of cartilaginous nodules within the synovial space from the synovial connective tissue matrix (8); the nodules subsequently degraded, detached and become fluctuating intrarticular bodies tending to calcify in the joint space. The involved joint space may also become widened, and articular erosions may occur, eventually leading to secondary osteoarthritis. In 1933, Axhausen described the first case of synovial chondromatosis af-



Figure 5. Patient 6 month after operation.



Figure 6. Patient with a good mouth opening recovery.

fecting the temporomandibular joint. The aetiology remains unknown, but a history (2) of trauma and recurrent inflammations is often found. One of the most challenging features of synovial chondromatosis is to suspect and establish a correct diagnosis. Patients with synovial chondromatosis affecting other major joints are predominantly male, but most patients with TMJ involvement are female (F:M:4:1) (3) as is the case with other forms of TMJ disease. In most cases, a specific cause often is elusive. Clinical symptoms and signs overlap those of other TMJ diseases. These often are nonspecific, including joint swelling, joint dysfunction, anterior TMJ disc displacement, pain, crepitation, malocclusion and facial swelling. In the absence of physi-

cal signs, the development of nonspecific pain and headaches can lead to a delay in diagnosis or to a misdiagnosis of other more common causes of headaches. However, CT is now being used with great success to evaluate TMJ disorders.

Progress in imaging with computed tomography and magnetic resonance have improved the ability to delineate temporomandibular disease markedly, particularly with use of sagittal and coronal section imaging. It is important a complete evaluation, particularly with the use of diagnostic imaging for a correct evaluation of TMJ intra-articular disease, which can appear to be a cause of nonspecific headaches.

Proper treatment of synovial chondromatosis depends on accurate diagnosis. Although clinical diagnosis of chondromatosis is possible but difficult using arthroscopy, a definitive diagnosis can be made only by histological examination. Many authors suggest the role of arthroscopy in diagnosis and treatment of chondromatosis (9-12). With larger masses, an open joint procedure with disc preservation may be indicated. Differential diagnosis is also very important. Intra-articular temporomandibular pain most commonly is due to degenerative osteoarthritis, which is typically a progressive disease, late stage of meniscal perforation; osteosarcoma and chondrosarcoma (the most frequent) are malignant disease processes that can arise within the TMJ while benign tumors tend to occur with less frequency than malignant disease (13).

Conclusion

Synovial chondromatosis is a rare, benign pathological entity that should be included in the differential diagnosis for patients with a preauricular, radiographically heterogeneous mass that seems to affect the TMJ. Clinical symptoms overlap those of other TMJ diseases. These often are characterized by joint swelling, pain and joint dysfunction. However, its radiological identification is extremely important, and nowadays, CT scan has become a very important tool in TMJ imaging in association with MRI and arthroscopy for the differential diagnosis of TMJ pathology. Conservative surgical excision is needed for resolution.

Consent section: Signed publication consent was obtained from the patient. A copy of the written consent is available for review by the Editor of this journal.

Competing interests: None declared.

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