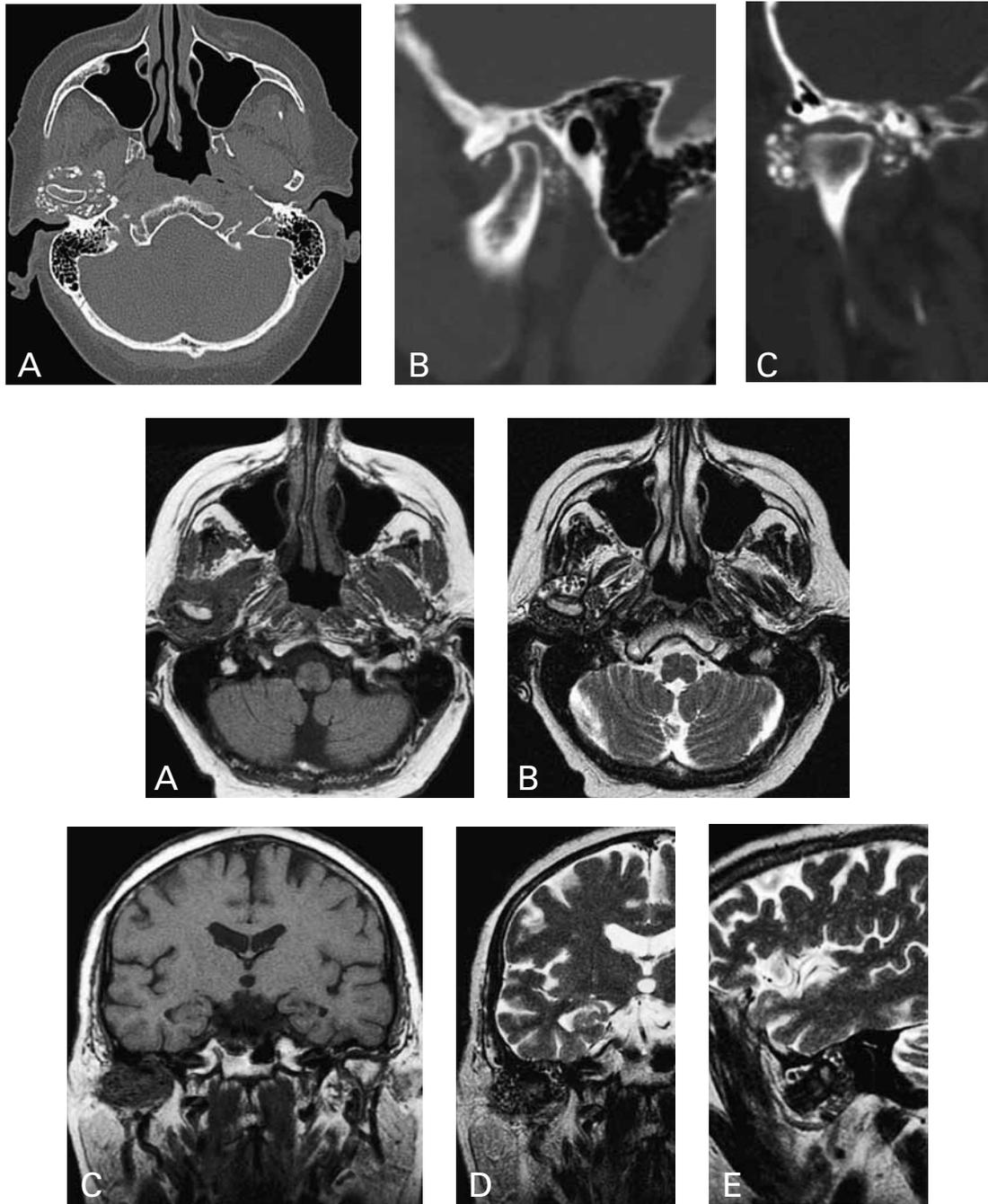


SYNOVIAL CHONDROMATOSIS OF THE TEMPOROMANDIBULAR JOINT

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Key-words: Temporomandibular joint – synovial chondromatosis – MRI

Background: A 70-year-old Caucasian woman presented to an Ear-Nose and Throat (ENT) specialist with a painful swelling in the region of the right parotid gland. The clinical ENT exam revealed no abnormalities.



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Fig.

1A	1B	1C
2A	2B	
2C	2D	2E

Work-up

CT scan at the level of the temporomandibular joints (TMJ) (Fig. 1) shows on the axial image (A) and reformatted image (B) in the sagittal plane through the right TMJ an expansile but localised lesion in the area of the right TMJ. Multiple, separate and unevenly dispersed small radiopacities in the vicinity of the mandibular condylar head. Reformatted image in the coronal plane, right TMJ (enlarged view) (C) demonstrates a thinning of the temporal bone with the lesion possibly extending to the middle cranial fossa.

MRI of the brain and skull base, at the level of the TMJ (Fig. 2) included an axial T1-weighted image (A), an axial T2-weighted image (B), a coronal T1-weighted image (C), a coronal T2-weighted image at the level of the right TMJ (D) and a sagittal T2-weighted image at the level of the right TMJ (E). Hydrops of the right TMJ and multiple particles within the capsula of the joint is observed. These particles have a low signal intensity both on the T1- (A,C) and T2- (B,D,E) weighted images. Sagittal T2-weighted image (E) shows, in concordance with the coronal T2-weighted image (D), synovial proliferation protruding into the base of the skull, extending to the tabula at the outer side of the medial fossa, but the medial fossa itself is not affected.

Radiological diagnosis

Based on the findings on CT scan and MRI, the diagnosis of *synovial chondromatosis of the temporomandibular joint* was made.

Discussion

Synovial chondromatosis (SC) of the temporomandibular joint (TMJ) was first described by Axhausen in 1933. It occurs most commonly in middle-aged women. Clinical symptoms are pain, swelling, and limitation of motion. SC is uncommon, monoarthritic and generally affects the larger joints. It is characterised by the development of highly cellular metaplastic cartilaginous foci in the synovial membrane. It is believed that SC origi-

nates from embryonic mesenchymal remnants of the subintimal layer of the synovium that becomes metaplastic, calcifies, and breaks off into the joint space. Although there are multiple reports of temporomandibular joint involvement in SC, cases involving base skull erosion to the middle cranial fossa are scarce. Radiographically, SC commonly demonstrates multiple juxtaarticular radiodensities. They range in size from a few millimetres to several centimetres and show varying degrees of mineralisation within each lesion. The cartilaginous foci may cause erosion of the adjacent bone and widening of the joint space. Although it is often misinterpreted as a sign of aggressiveness, this pattern is still compatible with a benign process. TMJ tumors are rare even though many types of bone or joint neoplasms have been described in this location. Benign bone tumors, including osteochondromas, osteomas, and giant cell tumors have been described. Of these, osteochondromas are the most common ones. Malignant bone tumors of the TMJ are particularly rare. Theoretically, a chondrosarcoma arising from synovial chondromatosis of the temporomandibular joint could appear. The articular calcifications are easily detected on CT scan of the skull base. MRI is well suited for detection of SC and particularly helpful in defining the tissue planes between the SC masses surrounding the soft tissue and the extension to the middle cranial fossa.

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