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Case Report
TMJ Disorders

Ossifying fibroma in the temporomandibular joint: report of an unusual case and treatment perspectives

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Abstract. An unusual case of ossifying fibroma involving the right temporomandibular joint (TMJ) in a 7-year-old girl is presented. The treatment protocol comprised TMJ reconstruction with a costochondral graft following radical tumour resection, with the use of both pedicled and free fat grafts to improve the surgical outcome. Pathological examination confirmed the diagnosis. Aspects of the treatment are discussed.

Keywords: ossifying fibroma; fat graft; temporomandibular joint.

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Ossifying fibroma (OF) is a well-defined benign fibro-osseous lesion, primarily involving the jaws and specifically the tooth-bearing areas. The terminology related to fibro-osseous lesions of the jaws is often unclear due to frequent reclassification and the variable features. All fibro-osseous lesions share the same histology, with characteristic replacement of the normal bone by fibrous connective tissue with varying degrees of mineralization. Therefore, the definitive diagnosis requires a combined assessment of the clinical, microscopic, and radiological features.[1,2]

According to the latest edition of the World Health Organization classification, OF is defined as a benign neoplasm with well-defined borders that is composed of fibrocellular stroma with interspersed areas of mineralization.[3]

In this report, we present an unusual case of OF in a non tooth-bearing area of the mandible in a young female patient; we discuss the treatment plan, including the use of two types of fat graft to improve the surgical outcome.

Case report

A 7-year-old girl presented with a 1-month history of a painless swelling in the right temporomandibular joint (TMJ) and a gradual limitation of mouth opening, without a preceding history of trauma or fever. The patient was referred to our institution after being examined and treated with anti-inflammatory drugs for 10 days in the local hospital, with no improvement.

Clinically, the patient had a moderate facial asymmetry, with the chin deviated to the left side. On mouth opening, the movement of the right TMJ was less than normal, with the condyle protruding outwards. The maximal inter-incisal mouth opening was 30 mm, with no joint sounds. Intraorally, cross bite of the anterior teeth was found. Examination revealed a 3 cm × 5 cm hard swelling in the right TMJ, with normal colour of the overlying skin. There was no tenderness or fluctuation. On

[3] The first and second authors shared the same work as co-author.

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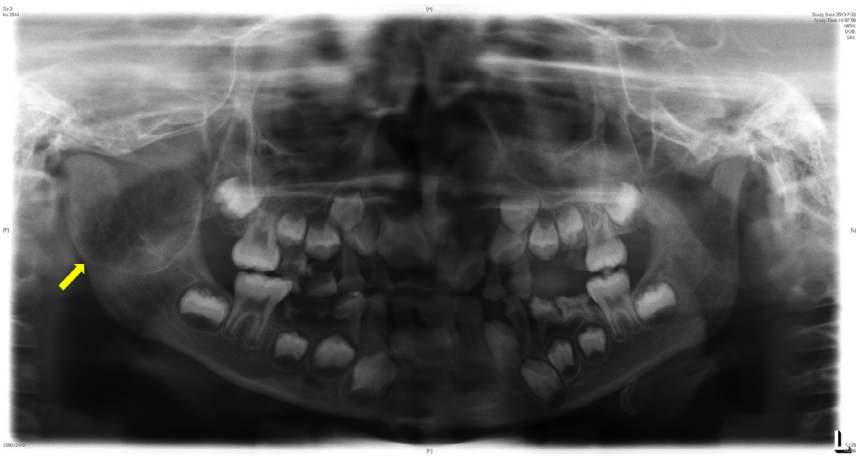

Fig. 1. Panoramic radiograph showing a large, well-defined radiolucency surrounded by a sclerotic border in the right condyle extending to the coronoid process.

neck examination, there were no palpable lymph nodes.

Panoramic radiography showed a large, well-defined radiolucency surrounded by a thin sclerotic rim in the right TMJ and extending to the coronoid process (Fig. 1). Computed tomography (CT) including axial, coronal, and reconstruction images, revealed a large expanding hypodense mass affecting the right TMJ (Figs 2 and 3). Magnetic resonance imaging (MRI) showed a large, higher signal intensity lesion (in relation to the brain), with the disc on top (Fig. 4).

The plan for surgery was as follows: radical tumour resection (condylectomy with segmental mandibulectomy to the level of the angle) with an immediate TMJ reconstruction by costochondral graft (CCG). A modified pre-auricular incision was performed in combination with the submandibular incision. After the mass had been exposed widely, the TMJ disc was identified to be separable from the lesion. Osteotomies were then made at the level of the angle, and the tumour was removed en bloc. Great attention was given to preserve the inferior alveolar bundle (IAB); furthermore, the TMJ disc was salvaged (Fig. 5). During this step, a pedicled buccal pad of fat (Fig. 6) was harvested and fixed medially over the preserved IAB before insetting the CCG. Subcutaneous free fat grafts were harvested from the submandibular incision. A left 6th rib costochondral graft was chosen for reconstruction. Maxillomandibular fixation (MMF) was then set to provide a stable occlusion before graft fixation. Next, the graft was seated in the fossa and fixed to the residual mandible with a 2.4-mm reconstruction plate (Fig. 7). The submandibular free fat was then grafted in a scarf-like fashion surrounding the CCG. The MMF was released to check mouth opening and occlusion.

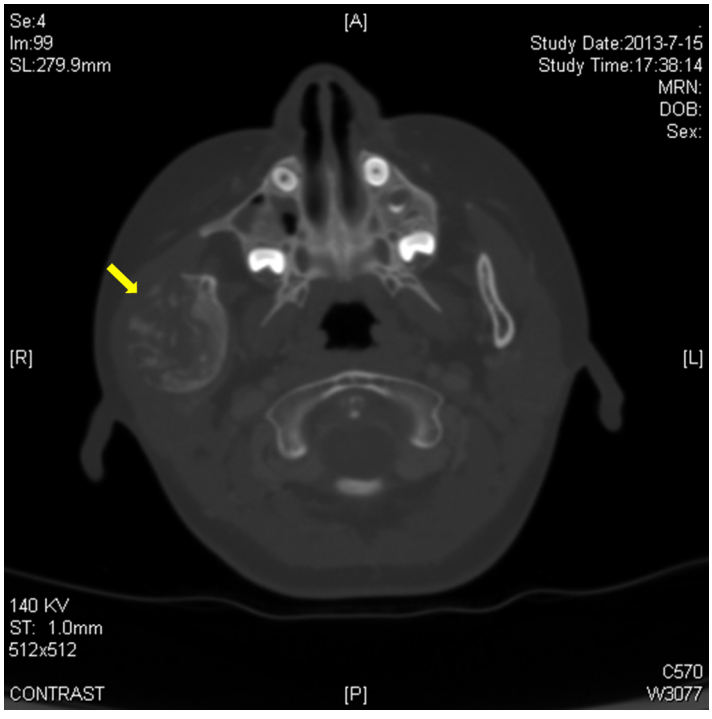

Fig. 2. Axial CT showing a large, hypodense, well-circumscribed lesion in the right condyle.

Histopathological examination revealed a well-defined lesion with a thin rim of fibrous tissue. The lesion was mainly composed of cellular fibrous tissue rich in fibroblasts and collagen fibres, with occasional areas showing a storiform pattern, and areas of mature bone surrounded by a layer of osteoblasts and occasional osteoclasts (Fig. 8). Combined evaluation of the clinical, imaging, and histological features confirmed the diagnosis of OF.

One week postoperatively, panoramic radiographs and CT imaging showed the tumour to have been resected completely and the CCG to be stable. Postoperative MRI (Fig. 9) revealed the scarf-like submandibular fat grafts around the CCG. After 15 months, the patient showed no clinical or radiographic evidence of recurrence and had stable occlusal relationships (Fig. 10); mouth opening had increased to 39 mm. The patient is still attending for periodic clinical, orthodontic, and radiographic follow-up.