

Multiple Developmental Malformations Accompanied by Hyperplasia of the Mandibular Condyle in Temporomandibular Joint: A Case Report

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Abstract

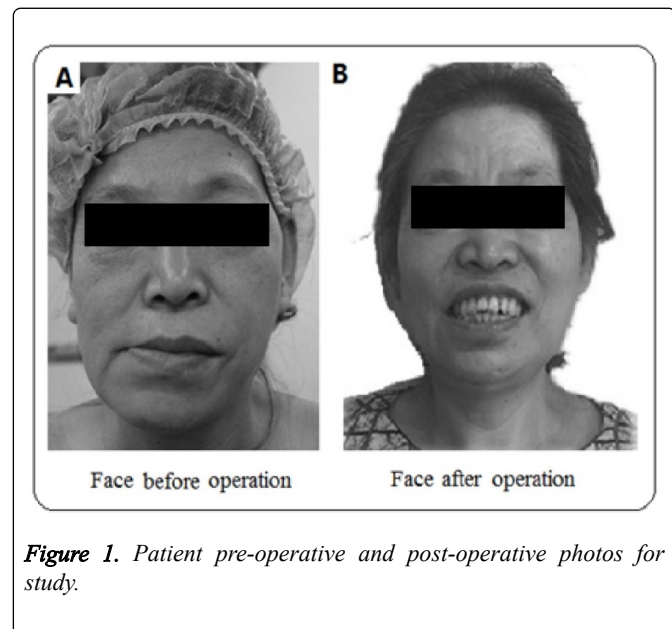
The present study reports about typical manifestations included enlargement of mandibular condyle, lengthening of condylar neck, downward over-growth of mandible ascending ramus and mandible body of the affected side and full-shape facial contour of the affected side and long and narrow uninjured side. Some patients also exhibited TMJ disturbance symptoms, such as pain, joint clicking and limitation of mouth opening.

Key Words: TMJ, Mandibular condyle, Occlusion

Introduction

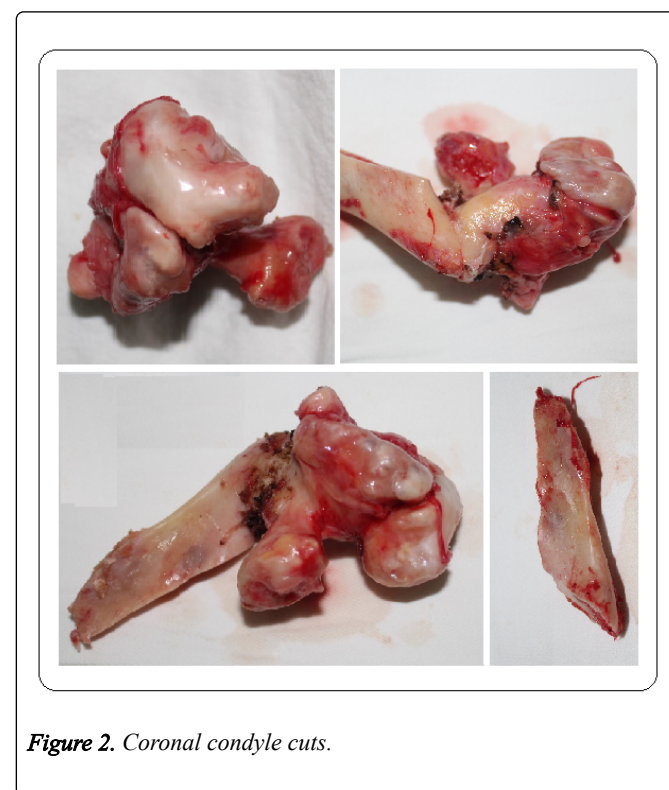
In 1836, Adams reported, for the first time, an over-development deformity of the mandible seriously affecting the appearance and function, which was named as condylar hyperplasia (CH) [1]. In 1946, Rushton reported 29 patients with unilateral CH who usually showed severe facial asymmetry and disordered occlusion, associated with temporomandibular joint (TMJ) dysfunction [2]. The typical manifestations included enlargement of mandibular condyle, lengthening of condylar neck, downward over-growth of mandible ascending ramus and mandible body of the affected side and full-shape facial contour of the affected side and long and narrow uninjured side. Some patients also exhibited TMJ disturbance symptoms, such as pain, joint clicking and limitation of mouth opening [3].

compress, but joint clicking still occasionally occurred. In the last 7 years, conscious joint clicking became sever, which had impact on the mouth opening (*Figure 1A*). The patient was examined by CT in the hospital, CT result showed occupying lesion in the left infratemporal fossa, but the patient was not treated for economic reasons. Recently, the patient visited our hospital due to mandibular opening deviated to the right and further aggravated limitation of mouth opening. Specialized examination: maxilla-facial left-right asymmetry, mandibular opening deviated to the right, a palpable bony mass from the left TMJ to the mandibular angle (size, 4.0 cm × 3.0 cm × 2.5 cm; hard texture; unclear boundary, without movement) (*Figures 2 and 3*), Joint clicking at the end of the mouth opening and closing, and moderate limitation of mouth opening.



Case report

Subject: female; age, 55 years old; the patient reported pain in the left TMJ 15 years ago, and the pain was relieved after hot



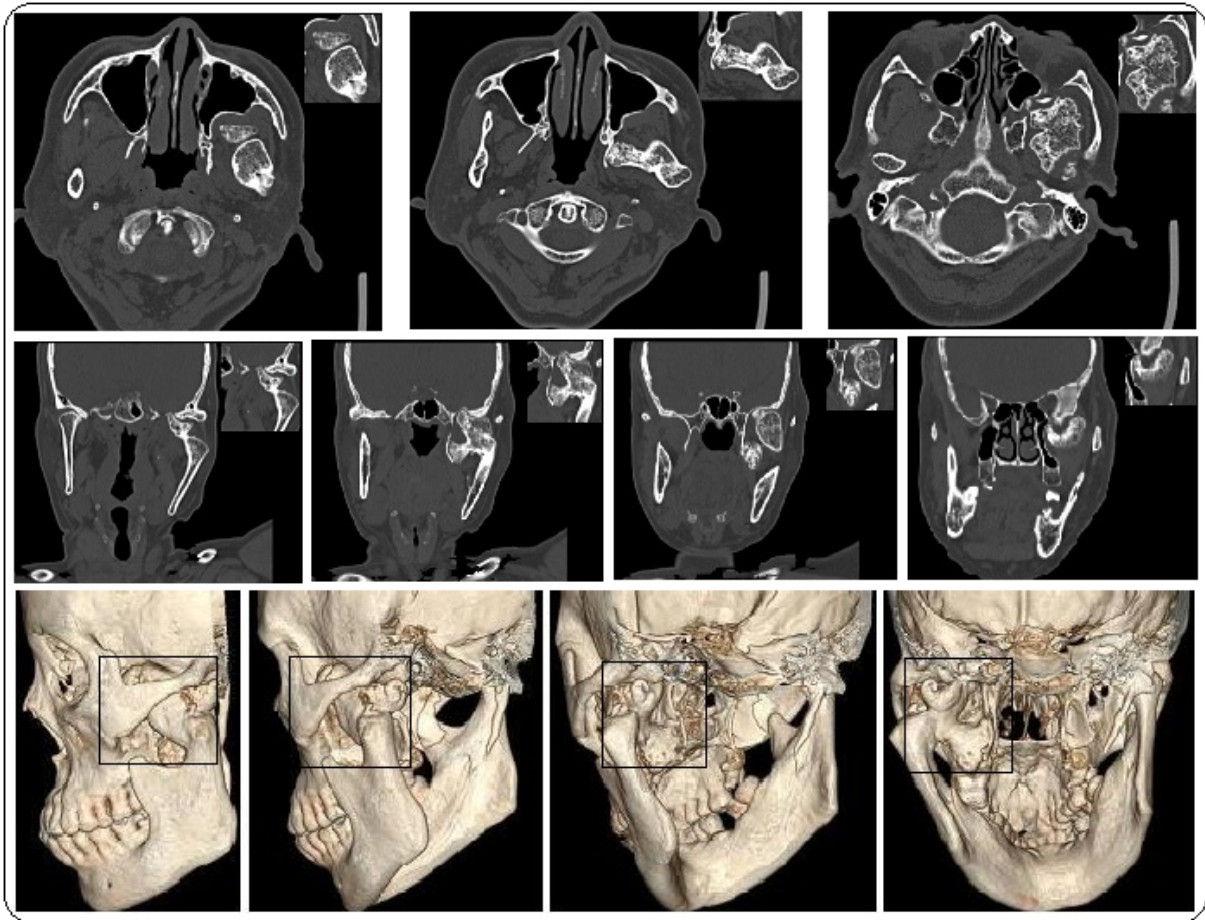


Figure 3. CT examination of patient.

During operation, we chose the jaw trailing edge to be incision-line, cut the mandibular condyle at the level of its neck, in order to prevent restriction of mouth opening; we also cut the coronal condyle (Figure 2).

Discussion

As defined by WHO, osteochondromas originated from the diseased bone surface are cartilage-capped bony protrusions with a continuous extension of bone cortex and bone marrow cavity to the bone of the lesion site [4]. Obwegeser et al. [5] suggested that the mandibular CH included hemimandibular hyperplasia and hemimandibular lengthening and was defined as the developmental enlargement of the unilateral mandibular condyle in three-dimensional direction, characterized by progressive lateral displacement in the condyle, condyle neck, mandibular ramus and mandibular body and gonion. The etiology of the disease was very complicated, and there was still no clear conclusion at present. Wolford demonstrated that the disease had an important association with hormone regulation by combining the characteristics of adolescence onset of chondroma patients with the phenomenon of increased expressions of regional hormone receptors in the TMJ [6]. Obwegeser et al. speculated that different growth factors regulating individual growth and development might play a certain role in the development of this malformation [7]. Chen et al. found that the expressions of IGF-1 and IGF-1R in the mandibular

condylar chondrocytes were up-regulated, and the proliferative activity was significantly enhanced in the chondroma patients [8]. Other possible causes included trauma, infection, excessive vascularization, intrauterine factors and a certain degree of genetic factors. In addition, another possible but not yet confirmed cause was the increased functional load of the TMJ [9].

Although the patient was confirmed as osteochondroma by final pathological biopsy results, the characteristics of multiple condyles in the TMJ had not been reported in the literature so that the patient was a rare case. The mandibular ramus and mandibular body of the affected side did not appear the phenomenon of over-development, condyle was one of the growth centers of the mandible [7], so that the deformity may be caused by condyle neoplasia or hyperplasia induced additional growth. From patients with postoperative photos we found that the operation helped her (Figure 1B), very sorry for that we cannot get the histological section of this case but quest will continue.

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