One-Stage Treatment of Acquired Facial Deformity Caused by Severe Unilateral Condylar Hyperplasia: A Case Report

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Abstract: Condylar hyperplasia (CH) is a rare and self-limiting process manifesting between the first and third decades of life. It causes facial asymmetry and derangement of occlusion. The management involves resection of the condylar head and orthognathic surgery followed by orthodontic treatment. We present a 33-year-old man with spontaneous onset of CH during a span of 10 years. This was managed with resection of the condyle alone, which dramatically improved facial asymmetry in addition to restoration of the occlusion within a few months of follow-up. Therefore, orthognathic surgery or orthodontic treatment was not needed.

Key Words: Condylar hyperplasia, condylar resection

Condylar hyperplasia (CH) was first described in 1836 as an overgrowth of the mandibular condyle, and no comparable pathologic abnormality has been described in any other joint.1 It is a rare and self-limiting process; the most common age group of occurrence is between the ages of 11 and 30 years and it may manifest as an acceleration of growth in young patients, which arises at the time of physiologic development, or as a growth spurt in adults.2,3 There are 2 types of classifications: one by Obwegeser and Makek and the other by Wolford et al. Obwegeser and Makek proposed 2 types of CH based on its radiographic and clinical characteristics: (1) hemimandibular elongation, which occurs in the horizontal plane, and (2) hemimandibular hyperplasia, which occurs in the vertical plane. Hemimandibular elongation is characterized by a lengthened condylar neck resulting in a shift of the body of the mandible. The mandible is usually skewed laterally, causing deviation of the chin and the lower dental centerline, including a posterior crossbite.

Hemimandibular hyperplasia, on the other hand, is a downward bowing of the lower border of the mandible with an increased height of the ramus, a lateral open bite, but no shift in the centerline.5 The pathogenesis of CH affecting the temporomandibular joint remains obscure, with factors ranging from a reactive growth response, trauma, Y-linked, or autosomal dominant trait. The condyle and ramus can also be affected, showing enlargement caused by hemimandibular hyperplasia and condylar tumors.6-10 Wolford et al11 based their classification on the frequency of occurrence, the types of jaw deformity, and the treatment best suited in the disease. In their classification, they noted that CH type 1 is the most frequently occurring form and involves an accelerated growth rate of the "normal" growth mechanism of the mandibular condyle, with relatively normal architecture of the condyle but elongation of the condylar head, neck, and mandibular body. This type, with a predominant horizontal growth vector, causes the mandible to grow forward ahead of the maxilla, creating a class III occlusal and skeletal relationship; although
occasionally, a vertical growth vector may occur for CH type 1, causing mandibular prognathism. The onset of accelerated mandibular growth usually occurs during puberty, and the mandibular growth can continue into the mid 20s but is self-limiting. This mandibular overgrowth can cause major jaw and facial deformities. Type 2 occurs unilaterally and involves enlargement of the condylar head; usually, the condylar neck increases in thickness and the vertical height of the mandibular ramus and body increases on the ipsilateral side, often accompanied by a compensatory downward growth of the ipsilateral maxilla. Type 2 can occur at any age and is not self-limiting and can be caused by benign tumors such as osteochondroma, osteoma, or other rare forms of condylar enlargement.

**CLINICAL REPORT**

A 33-year-old man presented to the Oral and Maxillofacial Clinic at the University of Nairobi with complaints of progressive facial deformity and changes in his facial appearance for approximately 10 years. At the age of 23 years, he started to notice that his lower jaw was deviating to the left (LT). It was asymptomatic, and there was no prior history of trauma or recurrent ear infection. His medical history was unremarkable, and there was no family history of skeletal disease or any other chronic illness. He also denied use of tobacco and alcohol. He had undergone orthodontic treatment with fixed appliances due to crowding of teeth during his teenage years. On examination, he was in a fairly good general condition. On extraoral examination, the patient had a concave facial profile with severe facial asymmetry; the chin was shifted to the LT. He had lip competence; however, the LT commissure was shifted superiorly and the right (RT) inferior (Fig. 1A). On mouth opening (35 mm), the lower jaw deviated to the LT, and the abnormal prominence of the RT condyle could be seen and palpated during its restricted movement. The swelling was hard and
Stage 1 was to undertake removal of the growth center and restore temporomandibular joint function via mechanics of the functional matrix.

Stage 2 was to reevaluate the patient and consider preorthognathic surgery, orthodontic treatment, and orthognathic surgery (LT advancement and RT side setback).

Under nasotracheal intubation, a preauricular incision was made with a temporal extension. The temporal fascia was exposed, and T-incision was made over the zygomatic arch and the head and neck of the condyle (Fig. 6). Precaution was taken to preserve the temporal branch of the facial nerve. A condylectomy was performed to remove the hyperplastic condylar head; the meniscus was spared, and the bony edges of the residual neck were smoothed. The wound was closed in layers with the Portovac drain in situ to minimize the drainage of the hematoma. Histopathologic examination confirmed that the enlargement was a hyperplastic process (Fig. 7). The patient was followed up, and in 3 months, the mandible attained acceptable symmetry and the occlusal cant reduced considerably. The patient was satisfied and desired no further treatment (Fig. 8).

This is a case of severe jaw asymmetry due to severe unilateral CH, which was managed through surgery alone. Cosmetic and functional needs were achieved to the satisfaction of the patient. The fact that no additional orthodontic and orthognathic surgeries were done saved the patient both the expenses and time. This case demonstrates the need for careful consideration of all the options that can be offered to patients with these types of problems.

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