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Unilateral Condylar Hyperplasia in a Male: A Case Report

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Authors' contributions

This work was carried out in collaboration between both authors. Author OK designed the study and wrote the first draft of the manuscript and managed the literature searches. Both authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Mandibular condylar hyperplasia (MHC) is defined as an overgrowth of the mandibular condyle resulting in facial asymmetry and occlusal alterations. It is manifested by pain and temporomandibular dysfunction. When it remains active, the asymmetry and occlusal alterations remain progressive. The etiology of condylar hyperplasia remains uncertain. Elevated condylectomy, joint disc replacement, and orthognathic surgery are surgical methods used to correct and process condylar hyperplasia. We report the case of a 19-year-old man who complained of pain in the right preauricular region. The pain has lasted for about one year, and there was no history of trauma; A diagnosis of mandibular condylar hyperplasia was conducted and treated by superior condylectomy. This case is presented for its rarity.

Keywords: Condylar hyperplasia; facial asymmetry; condylectomy; dentofacial deformity.

1. INTRODUCTION

Mandibular condylar hyperplasia (MHC) is characterized by excessive development of the head of the condyle, can be unilateral or bilateral, progressing in untreated cases to a dentofacialanomaly and facial asymmetry [1,2]. Adams first described it in 1836. It can have an

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incidence of 1:1 between males and females, although casuistry shows a predilection for the female sex [3,4].

A simple classification has been developed to identify the different types of MHC according to the frequency with which it occurs, the type of jaw deformity generated, and the surgical procedure needed to achieve the best treatment results [5].

2. CASE REPORT

A 19-year-old man, complaining of pain in the right preauricular region evolving for approximately 1 year with no history of trauma. The clinical examination shows.

2.1 Extraoral

Facial asymmetry, with a deviation of the chin to the left side.

The clicking was noted during the movement of the right TMJ (temporo-mandibular joint).

2.2 Intraoral

Crossbite on the right side with a compensatory deviation of the mandibular midline toward the left side of approximately 4 mm.

The maximum mouth opening was 36 mm.

Excursion and protrusive movements were not restricted.

2.3 Radiography

A panoramic radiograph showed elongation of the right condylar neck, with a unilateral downward projection of the mandibular angle and compensatory changes in the maxilla. There was also a posterior open bite on the left side.

The scintigraphy (Technetium-99m) was made, showing increasing growth activity in the right TMJ. This confirmed the presence of a blastic lesion.

A presurgery diagnostic of active condylar hyperplasia was made based on the clinical examination and radiologic studies.

The authors performed the preauricular approach under general anesthesia toapproach the temporomandibular joint. After identifying thearticular capsule through the T shape incision we exposed the condylar head. A higher condylectomy was performed with the piezoelectric instrumentation (PEI= compact piezo p2k, EN 60601-1: II, year: 2019).The remaining bone tissue was remodeled, and suturedby layers.The occlusion was checked manually, showing good molar contact.

The follow-up of the patient was marked with a premature contact. The absence of recurrence marked the patient's follow-up. Three-month follow-up showed no recurrence of subluxation or a dysfunction.

Fig. 1. Photo showing facial asymmetry, with a deviation of the chin to the left side and lip inclination

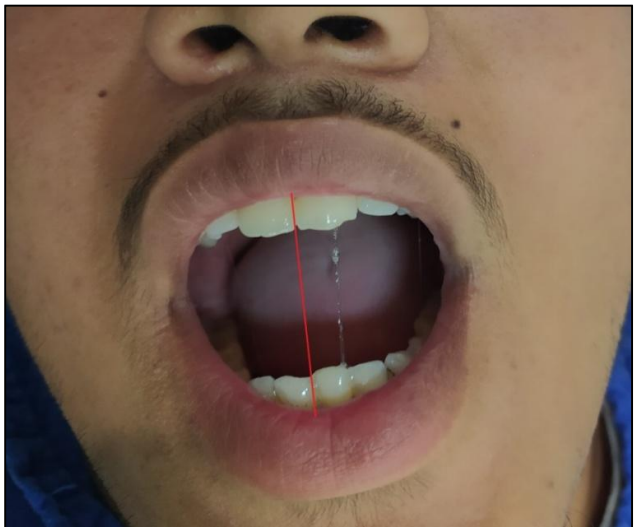

Fig. 2. Photo showing deviation of the interincisor line

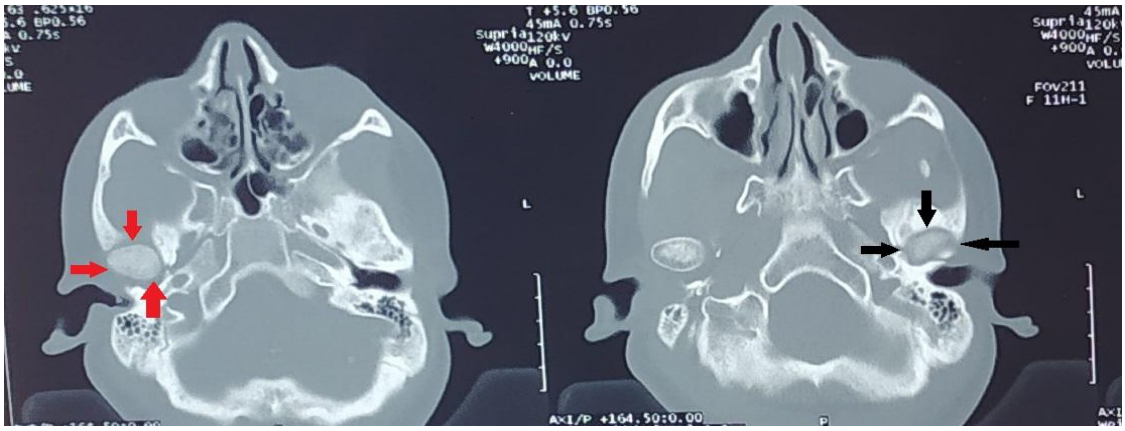

Fig. 3. 3D-computed tomography picture showing uniform enlargement of the right condylar head (red arrow)

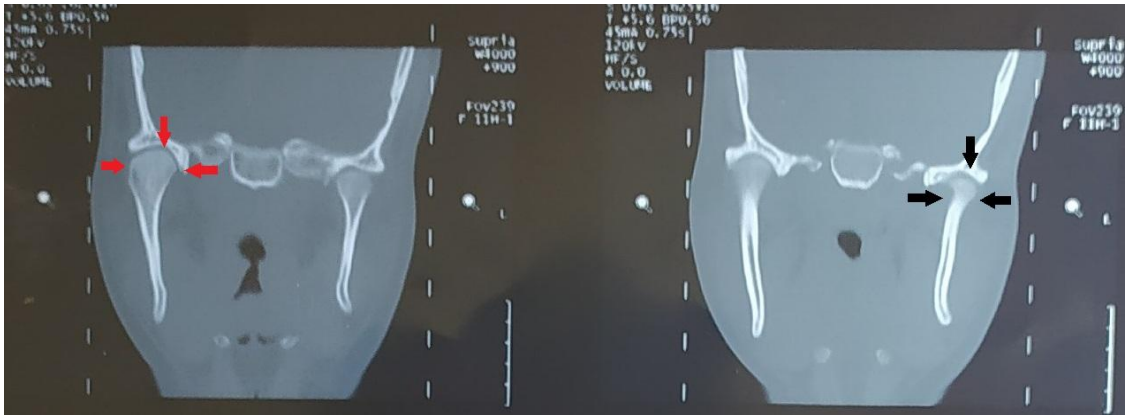

Fig. 4. Coronal computed tomography picture showing enlarged right condylar head (red arrow)

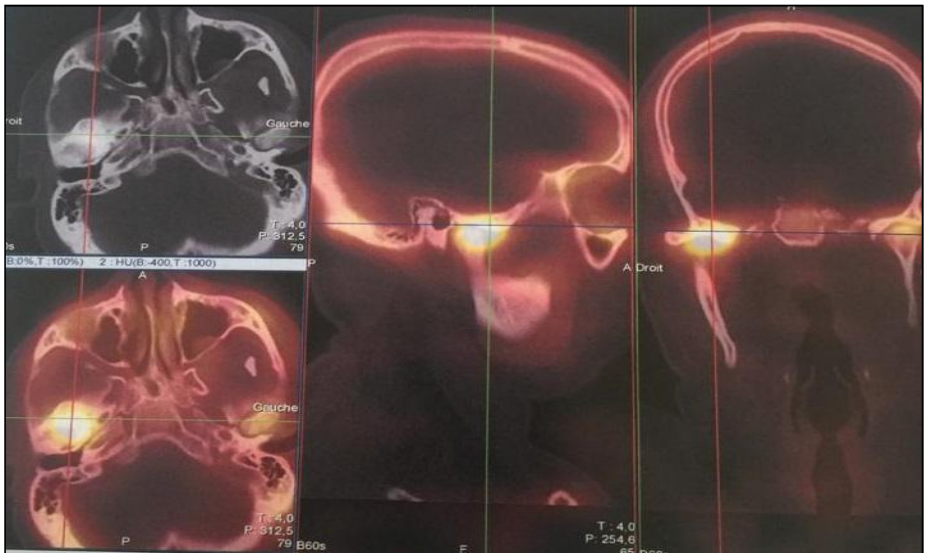

Fig. 5. Scintigraphy showing the hyper fixation in the right condyle

3. DISCUSSION

The facial asymmetry is a root cause of an aesthetic but also a functional problem, as in the case of active condylar hyperplasia [6]. The growth of the condylar head causes the anteroposterior displacement of the condylar head, which leads to a vertical maxillary divergence of the occlusal plane associated with pain of compression and displacement of peripheral structures [7].

The causes of condylar hyperplasia remain uncertain and undetermined. The problem is the difficulty in predicting the length of time during which the condyle has been growing abnormally. In order to decipher it, references from the patient and previous photographs are required [8].

The intrinsic or extrinsic factors regulate the growth of the condyle.

The cartilage of the condyle is the primary growth center of the mandible [9].

The chondrogenesis in the condyle takes place in the periosteum that covers the head of the condyle [10].

Thus, the degree of tissue vascularization and the presence of mechanical stress may activate chondrogenesis or osteogenesis of the periosteum [11]. Based on these theories, local circulatory problems, previous trauma, hormonal disturbances, and cartilage exostosis have been hypothesized as possible etiological factors [12].

Usually, the occlusal relationships of the teeth are affected by the condylectomy, which is the case in our patient, and this treatment must be combined with an orthodontic preparation. Additional orthognathic surgery and orthodontic treatment may be omitted in this case. It should be noted that maximum occlusion was achieved by the spontaneous migration of the upper and lower teeth and the unilateral displacement of the body of the mandible backward into a neutral position [13].

Early diagnosis and treatment is the rule in order to prevent the development of asymmetrical deformities [14].

The basis in the therapeutic plan during facial asymmetry secondary to condyles hyperplasia must take into account the control of the growth process to allow a balanced facial development. This can be achieved by performing an elevated condylectomy or condylar remodeling in cases of active growth.In cases of benign to moderate, self-limited hyperplasia, it is best to avoid surgery of the TMJ and resolve the asymmetry by osteotomy of the mandibular branch at the end of the growth period [15].

Evidence of active changes in the hyperplastic condyle is important when deciding to perform a condylectomy, or when observing clinical or radiographic findings of pathological conditions such as chondroma, osteoma, or other

alterations that necessitate a histopathological diagnosis.

The treatment modalities for mandibular condylar hypoplasia vary dependent on the age of the patient. Ingrowing patients, orthopedic treatment with functional appliances is often helpful in correcting deformities or inreducing the worsening of deformities with growth [16,17].

The therapeutic plan depends on the presence or absence of active bone growth [18]:

If the growth was considered active, the treatment would have consisted of an upper condylectomy to remove the growth site, combined with orthognathic surgery if asymmetry persists. If a condylectomy is performed in an inactive case, it causes an unnecessary disturbance of the TMJ. Awareness of these unique unusual cases will provide information to the surgeon for accurate diagnosis and targeted management [19].

If the growth was considered inactive, treatment would have consisted of orthognathic surgery to restore the occlusal plane.

4. CONCLUSION

Facial asymmetry must be considered as a warning sign, so to proceed to a complete study of its causes and to consolidate a diagnosis that is not only dental, as TMJ alterations can be found as MHC or another type of neoplasia.

CONSENT AND ETHICAL APPROVAL

As per university standard guideline, participant consent and ethical approval have been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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