

## UNILATERAL CONDYLAR HYPERPLASIA – A RARE CASE REPORT

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### ABSTRACT

There are various developmental disturbances which involves the temporomandibular joint. These may cause anomalies in the size and shape of the condyle. Hyperplasia, hypoplasia, agenesis and formation of bifid condyle are a few cases which may be evident on radiographic examination of the joint. Unilateral condylar hyperplasia is an uncommon

condition with unknown etiology, for which proper diagnosis has to established, since patients may seek surgical intervention. A rare case of unilateral condylar hyperplasia encountered in our hospital is reported here.

**Key words :** Condylar hyperplasia, temporomandibular joint, mandibular condyle

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### INTRODUCTION

Condylar hyperplasia is an uncommon malformation of the mandible, created by excessive growth of one of the condyles.<sup>[1]</sup> Unilateral hyperplasia of the mandibular condyle is generally characterized by a slowly developing, progressive enlargement of the condyle and elongation of the mandibular neck resulting in facial asymmetry and shifting of the midline of the chin to the unaffected side.<sup>[2]</sup> The aetiology of condylar hyperplasia is controversial and not well understood. Suggested theories include neoplasia, trauma followed by excessive proliferation in repair, or a response to infection or to abnormal loading<sup>[3]</sup>. Histological examination of the mandibular head reveals signs of growth. There is over activity in the articular cartilage. The thickness of the proliferative zone increases, the fibro-cartilagenous zone becomes hypertrophic, endochondreal bone formation occurs, while the articular zone remains remarkably intact.<sup>[2]</sup> Here we are presenting a case of unilateral condylar hyperplasia which followed a history of trauma.

### Case Report

A 73 years old male patient had come to the Department of Oral Medicine and Radiology for replacement of his missing teeth. On examination, facial asymmetry was evident, for which patient had given a history of trauma about 60 years ago, when he met with a road traffic accident while travelling in a bus. Subsequently to the trauma, he noticed mild increase in relation to right lower half of the face and also deviation of the mandible to the left side. Since then there was a progressive increase for a period of five years. Patient did not have any difficulty in opening the mouth. Inspection revealed elongation of right side lower half of the face as compared with the left side. The prominence of the chin appeared shifted to the left side. The left side of the face appeared flattened. A small swelling was evident on the preauricular region, which was

approximately 2cm in diameter. The sloping rima oris was also evident (Fig-1). On palpation the swelling was non tender and is hard with distinct margins. The condylar movements were limited on the right side as compared with the left side. Intraorally the mouth opening was normal and the patient was completely edentulous. Based on the history and clinical findings the provisional diagnosis of unilateral condylar hyperplasia was made.



**Fig – 1.** Shows elongation of the right side of the face, prominence of chin shifted to the left side, sloping rima oris and also small swelling on the preauricular region

Radiographic investigations were carried out. Panoramic view revealed symmetrical condylar enlargement of the right side as compared to the left side and elongated condylar neck. The ramus appeared elongated and the lower border of the right side mandible was thickened. A completely edentulous arch was also evident (Fig-2).



**Fig-2.** Panoramic view revealing enlarged condyle on the right side, elongated condylar neck, elongated ramus, thickened lower border of mandible and completely edentulous arch

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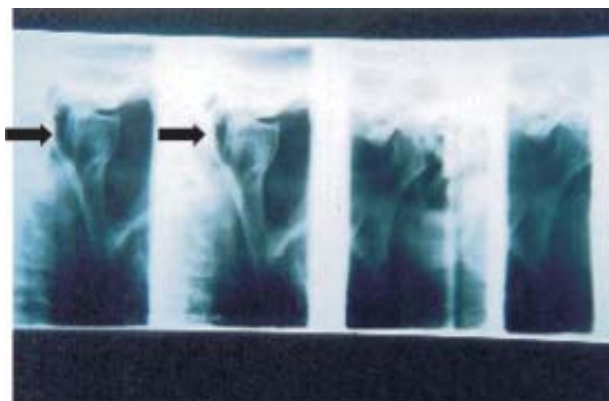
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**Fig-3.** Temporomandibular joint tomogram clearly visualizing the enlarged condyle and elongated condylar neck on the right side

Temporomandibular joint tomogram clearly visualized the enlarged condyle on the right side and also the elongated condylar neck (Fig-3). Lateral cephalometric image also showed the enlarged condyle and the elongated condylar neck (Fig-4).



**Fig-4.** Lateral cephalometric image showing enlarged condyle and elongated condylar neck

## DISCUSSION

The aetiology and pathogenesis of condylar hyperplasia is unknown. A plethora of presumed causes has been proposed in the course of time. Some of them include previous trauma, true neoplasia, hormonal disturbances, partial hemihypertrophy, arthrosis, osteochondromatosis, local circulatory disturbances, and neurotrophic disturbances.<sup>[4]</sup> Other condition which can cause challenges in diagnosing this condition includes hemifacial hyperplasia and synovial chondromatosis.

In the former condition, the associated soft tissues and teeth also will be enlarged<sup>1</sup> and in the latter, there will be preauricular swelling with pain and limitation of joint function.<sup>[2]</sup> Classification of temporomandibular joint disorders is given in Table-1.

Lohmann in 1918 had initially reported about unilateral condylar hyperplasia, followed by Gruca and Meisels in 1926. Rushton in 1946 had made extensive review and found 29 cases and added three cases of his own. Since then few cases have been reported by various

**Table-1. Classification of Temporomandibular joint disorders<sup>1</sup>**

Muscular Disorders	Arthrogenic Disorders
<ul style="list-style-type: none"> <li>• Hyperactivity, spasm and trismus</li> <li>• Inflammation (myositis)</li> <li>• Trauma</li> <li>• Myofacial pain and fibromyalgia</li> <li>• Atrophy or hypertrophy</li> </ul>	<ul style="list-style-type: none"> <li>• Disc displacement (internal derangement)</li> <li>• Hypomobility of the disc (adhesions or scars)</li> <li>• Dislocation and subluxation</li> <li>• Arthritis</li> <li>• Infections\metabolic disease (gout and chondrocalcinosis)</li> <li>• Capsulitis, synovitis</li> <li>• Ankylosis(fibrous, bony)</li> <li>• Fracture</li> <li>• Condylar hyperplasia, hypoplasia and aplasia</li> <li>• Neoplasia</li> </ul>

authors till now.<sup>[5]</sup> Theories have suggested that, trauma followed by excessive proliferation in repair is one of its cause.<sup>[3]</sup> Our patient had given a history of trauma following which he noticed the elongation of right side of the face, which lead to the conclusion that trauma may be the initiating factor for this condition. Hypothesis based on pathogenesis, states that there is hyperactivity or hyper production of two different growth regulators which is lying within the fibrocartilagenous layer of condyle, affecting either the longitudinal or the expansile growth of the same side of the mandible. This fact seems to uphold the hypothesis that “the condyle is a major field of growth, serving as a master centre”.<sup>[6]</sup> Obwegeser and Makek, proposed a definite classification for condylar hyperplasia into two types: hemimandibular hyperplasia and hemimandibular elongation. Hemimandibular hyperplasia is characterized by a three dimensional enlargement of one side of the mandible, i.e.: the enlargement of the condyle, the condylar neck and the ascending and horizontal rami. Hemimandibular elongation is characterized by horizontal displacement of the mandible plus chin towards the unaffected side.<sup>[6]</sup>

Condylar hyperplasia usually occurs after puberty and is completed by 18 to 25 years.<sup>[7]</sup> Prominent features of condylar hyperplasia include an enlarged mandibular condyle, elongated condylar neck, outward bowing and downward growth of the body, and ramus of the mandible of the mandible on the affected side, causing fullness of the face on that side and flattening of the face on the contralateral side.<sup>[8]</sup> The prominence of the chin is shifted to the unaffected side. An open bite might exist on the abnormal side. This depends, on one hand, on the rate of increasing enlargement of condyle and, on the other hand, on the downward growth of the maxillary alveolus and teeth. The unilateral asymmetric increase in length of the face, gives rise to a sloping rima oris. The mouth can be opened without restriction.<sup>[6]</sup> Our patient had similar features except

that the open bite could not be appreciated as the patient was completely edentulous. At an early stage occlusal contact is maintained by increased vertical height of the dento-alveolar structures in both the upper and lower jaws. This results in slanting of the occlusal plane towards the affected side. When the downward growth of mandible continues further it exceeds the dento-alveolar growth potential and produces an open bite in the premolar and molar regions.<sup>[5]</sup>

Radiographically, the condyle may appear relatively normal but symmetrically enlarged, or it may be altered in shape (e.g., conical, spherical, elongated, lobulated) or irregular in outline. It may appear more radiopaque because of additional bone present. A morphologic variation like elongation of the condylar head and neck may be seen. The ramus and mandibular body on the affected side also may be enlarged.<sup>[9]</sup> In the present case, patient had the features mentioned above. Technetium 99 scintiscanning is an essential diagnostic tool. The radioactive isotope is Technetium 99 methylene diphosphonate. Scintiscanning is useful for three reasons, it is possible to determine which side is affected, it becomes evident whether there is an abnormal condylar growth centre or whether there is generalized mandibular growth, and finally, it is apparent whether or not the hyperplasia is still active or if it has become stable.<sup>[3]</sup> It's a self-limiting process that can cease active growth at anytime and is generally seen in patients between the ages of 11 and 30 years of age.<sup>[10]</sup>

Condylectomy on the affected side is the accepted method of treatment. It gives the best possible result with little post-operative discomfort to the patient.<sup>[5]</sup>

## CONCLUSION

Unilateral condylar hyperplasia is one of the rare condition which results from increased activity of the condylar growth centre. Careful history, clinical and radiographic examination will usually reveal the true nature of the condition. As this condition can cause challenges in diagnosing, it has to be carefully differentiated with other similar conditions for planning and initiating the proper treatment modality for both functional activity and for aesthetic appearance.

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