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BILATERAL CONDYLAR HYPOPLASIA - AN ACCIDENTAL FINDING

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ABSTRACT

As per the classification of the Temporo mandibular joint (TMJ) disorder, mandibular condylar malformations are of three types aplasia, hypoplasia and hyperplasia; and each have their respective etiology, clinical and radiological features. This paper highlights a case of bilateral hypoplastic deformed condyle; the clinical and radiological features are different from that of typical condylar hypoplasia and not associated with any kind of syndromes.

Key Words: Hypoplasia, Temporomandibular joint, Condyle.

INTRODUCTION

The temporomandibular joint (TMJ) is one of the most complex joints of the human body. It is considered a ginglymus diarthrodial joint capable of both rotational and translatory movements. It consists of the mandibular condyle and the articular eminence of the temporal bone. The condyle is very special because the expression of mandibular growth is provided by mandibular condyle. In compared to other diarthrodial joints, during prenatal life the TMJ lags morphologically behind other synovial joints in both the timing of its appearance and its progress, so that at birth the joint is still largely underdeveloped (Choi *et al*., 2007; Buchbinder and Kaplan, 1991). Serious disorders of mandibular growth are frequent, whenever there is a condyle unit defect. The etiologies of these pathologies are well known. They include the primary and secondary disturbances of the condylar growth. Most of them are syndromic, but some are acquired, such as ankylosis, whatever its origin. They induce specific disturbances of facial growth (Joel Ferri *et al*, 2006).

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Anomalies of the mandibular condyle are generally classified in terms of aplasia, hypoplasia, and hyperplasia (Shafer *et al*., 1974; WHO, 1995).

Condylar hypoplasia is caused by "underdevelopment or defective formation of the mandibular condyle." It may be either congenital or acquired. According to Shafer *et al* (1974) "congenital hypoplasia that is idiopathic in origin is characterized by unilateral or bilateral underdevelopment of the condyle beginning early in life." In these cases (eg, dysostosis otomandibularis), the condyle is generally small. Secondary or acquired condylar hypoplasia may be caused by local factors trauma, infection of mandibular bone or middle ear or irradiation) or by systemic factors (infection, toxic agents, rheumatoid arthritis, muccopolysaccharidosis).

In these cases, the condyle may be small, and the condition is frequently associated with ankylosis. The ankylosis is the result of to the joint structures causes hemorrhage and inflammation with subsequent fibrosis.' Either primary or the secondary hypoplasia may be unilateral or bilateral (Ferri Joel *et al*., 2006; Hovel, 1963). We present a case with a pattern of bilateral condylar hypoplasia distinct from what previously described.

CASE REPORT

A 40 years old male patient had come to the Department of Oral Medicine, Diagnosis and Radiology with the chief complaint of pain in lower left back region of jaw since 3 days. On examination, facial asymmetry was evident, for which patient had given a history that it was present since birth .The prominence of the chin appeared shifted slightly to the right side. The right side of the face appeared flattened. A small swelling was evident on the left side of the face due to the deep caries with an abscess in respect to 36 & 37. Figure 1 & 2 Shows elongation of the right side of the face, prominence of chin shifted to the left side, sloping rimaoris and also small swelling on the left region.

The sloping rima oris was also evident (Figure-1). The condylar movements were not limited & patient had absolutely no difficulty in movement of jaw. Intraorally the mouth opening was normal. Based on the history and clinical findings the provisional diagnosis of bilateral condylar hypoplasia was made.

Radiographic investigations were carried out. Panoramic view revealed symmetrical condylar hypoplasia in which the condylar head in both left & right were absent (Figure 3). Antigonial notch is more prominent in the left side as compared to right. TMJ program confirmed the finding of complete absence of left and right condylar heads (Figure 4).

Figure 1. Frontal View

Figure 2. Lateral View

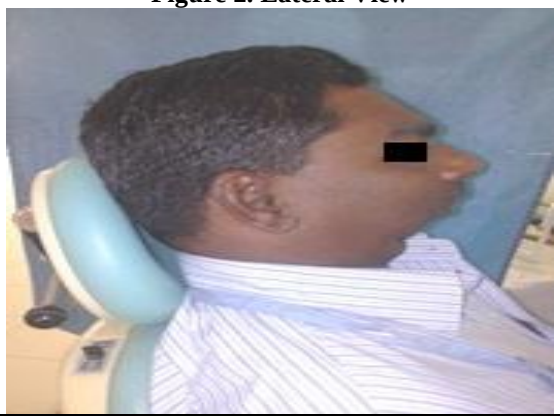


Figure 3.Prominent antegonial notch on OPG with condoyles not seen

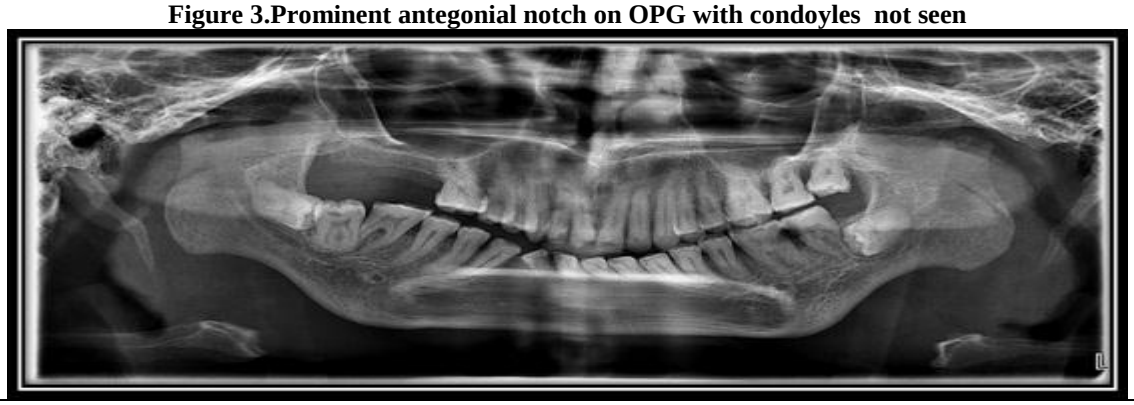
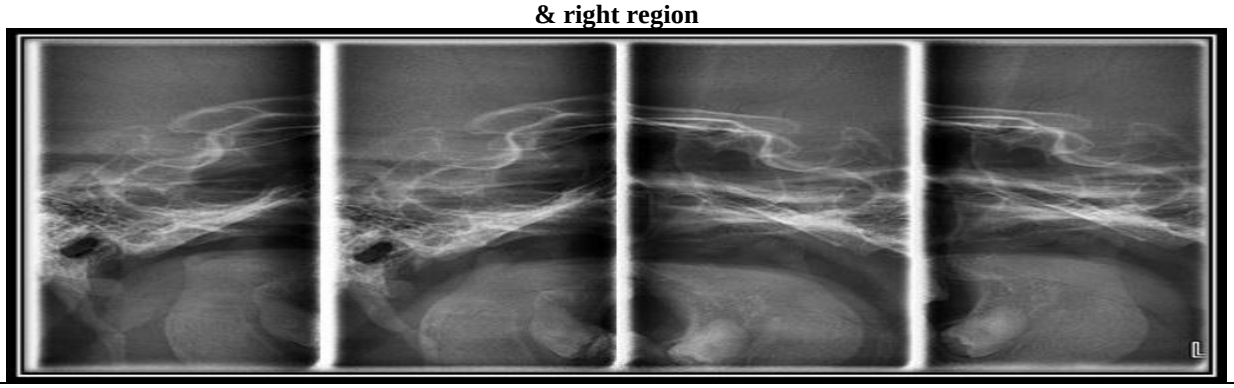


Figure 4. Temporomandibular joint tomogram clearly visualizing the absence of condylar head in both left & right region



DISCUSSION

The congenital deformities and developmental abnormalities of the mandibular condyle can be classified as hypoplasia or aplasia, hyperplasia, and bifidity. Hypoplasia or aplasia of the mandibular condyle indicates underdevelopment or nondevelopment associated mainly with various craniofacial abnormalities. These may be either congenital or acquired (Kaneyama *et al*., 2008).

Congenital (primary) condylar hypoplasia is characterized by unilateral or bilateral underdevelopment of the mandibular condyle (Delone *et al*., 1999) and usually occurs as a part of some systemic condition originating in the first and second branchial arches, such as Mandibulofacial dysostosis (Treacher Collins syndrome), Hemifacial microsomia (first and second branchial arch syndrome), Oculoauriculovertebral syndrome (Goldenhar syndrome) (Morgan *et al*., 2002), Oculomandibulodyscephaly (Hallermann-Streiff syndrome), Hurler's syndrome, Proteus syndrome, Morquio syndrome and Auriculocondylar syndrome (Ozturk *et al*., 2005).

As a rule, in each of these conditions some soft tissue manifestations accompany the condylar agenesis and/or condylar malformations (Krogstad, 1997). Acquired (secondary) condylar hypoplasia takes place if the condyle is injured during active growth, because of which development may be arrested. The most common causes are mechanical injury, such as trauma (before the age of 2), infection of the joint itself or the middle ear, childhood rheumatoid arthritis, radiotherapy, and parathyroid hormone-related protein deficiency which affect bone formation and chondrocyte differentiation. (Shibata *et al*., 2003). Literature mentions that the ideal method for the detailed evaluation of condylar morphology seems to be coronal computed tomography (Kamtane Smita, Subramaniam Arun, 2011). In the present case, OPG and TMJ panoramic program appeared to adequately show the pathology.

CONCLUSION

A case of bilateral condoylar hypoplasia based on clinical and radiographic findings, this case is of congenital origin as concluded from the history obtained. Nonsyndromic condylar hypoplasia is an exceedingly rare condition and very few case reports are published till date. In this context, this case is an important addition to the literature. Early detection and prompt treatment are imperative to restore esthetics and thus provide psychologic benefit to these patients

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