

Unilateral Condylar Hypoplasia and Treatment Modalities

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(Received: June, 2016)

(Accepted: July, 2016)

ABSTRACT

Mandibular condylar aplasia or hypoplasia is an anomaly which usually manifests in association with various syndromes. When not seen in conjunction with any other development anomalies, it is an extremely rare condition. Only a few cases of Non Syndromic condylar aplasia or hypoplasia have been reported in literature till date. Proper diagnosis along with differentiation from syndromic cases is important as the treatment plan and prognosis varies. This report describes the surgical treatment done for a non syndromic condylar hypoplasia.

KEY WORDS: anomaly, condylar aplasia, facial asymmetry, hypoplasia

INTRODUCTION:

Facial abnormalities may appear as a result of many pathologic conditions, but there are two major categories of abnormalities: genetic or congenital and acquired. Mandibular condyle aplasia is a term used to describe total absence of the condyle. Earlier the term agenesis was used, but now being replaced by term aplasia i.e lack of development of tissue, as the condylar cartilage is considered a tissue rather than an organ^[1,2]. Abnormality during the development and growth of TMJ may lead to condylar aplasia. These are associated with facial manifestation of syndromes such as Hemifacial microsomia, Treacher collins syndrome and Goldenhars syndromes^[3].

In genetic or congenital, the early differentiation of tissues and or developmental processes are affected. Congenital hemifacial microsomia, Pierre Robin syndrome, Crouzon syndrome and cleft lip and palate exemplify the genetic group. In the acquired variety, trauma or infection (suppurative otitis media) are believed to be

the primary reasons for the anomaly. Acquired condylar hypoplasia may develop after the loss of one or both condylar growth centres in very early stages of life and sometimes accompanied by ankylosis^[2].

Condylar hypoplasia is defined as underdevelopment or defective formation of the mandibular condyle. According to Shafer et al congenital condylar hypoplasia of idiopathic in origin is characterized by unilateral or bilateral underdevelopment of the condyle, beginning early in life. In these cases condyle is generally small (dysostosis otomandibularis). Condylar hypoplasia may be caused by local factor (trauma, infection, or middle ear infection) or systemic factors like bacteremia, rheumatoid arthritis and mucopolysaccharidosis^[1,4].

We are presenting a rare case 'Non Syndromic condylar hypoplasia and its management'.

CASE REPORT:

A 27 year old patient reported to the department with the chief complaint of impaired facial aesthetics and chin deviation towards left side. The patient was in good general health and did not give history of auricular infection or trauma to craniofacial region. Family history was not suggestive of any such illness. History of presenting illness revealed that the deviation of chin to the left side of face first became apparent during early childhood and progressively

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Figure 1: Preoperative Facial Profile.

worsened thereafter.

Clinically there was an obvious deviation of mandibular midline towards the left side of mandible in rest occlusion position. The range of mandibular movement was, however, normal.

EXTRAORAL EXAMINATION:

Clinically frontal view of face showed asymmetry at the lower third of face, flattening of the face on the right side with shifting of mandibular midline towards left by 12°. Left side condyle was not palpable. The rest of the face showed no abnormalities. There was no shortening of left body of mandible. There was no defect of auricle or pre auricular area and no facial nerve paresis paralysis. Opening of mouth was normal (interincisal distance 38mm).

INTRA ORAL EXAMINATION:

Intraoral examination showed left side shift of the midline by 12°. There was proclination of maxillary anterior teeth with 4 mm overjet and 5mm

overbite. The occlusal plane was slightly tilted and there was no cross bite in upper and lower arch.

RADIOGRAPHIC FINDINGS:

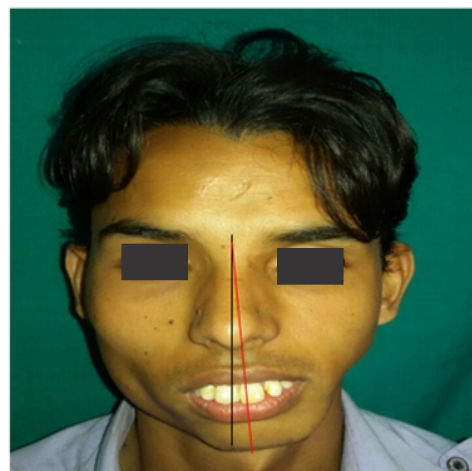
Panoramic radiograph with OPG and lateral cephalogram revealed missing normal condyle on the left side, shortening of condylar neck, ramus & body of mandible of the left side. There was marked antegonial notch on the left side. Significant proclination of maxillary anterior teeth with increased overjet and overbite was present. A missing first molar tooth on left side due to a past history of extraction. & Class II molar relationship was present on the left side; class I molar relation on the right side.

TREATMENT PLAN:

The patient refused pre surgical orthodontics due to financial constraints. A two step surgical intervention was planned for the patients in given circumstances. In first step anterior segmental osteotomy using Cupar's technique with down fracture, and 5 mm set back to correct anterior maxillary protrusion was executed. Camouflage for facial asymmetry with a Medpore allograft in left body & angle of mandible was undertaken. In a second step lateral (towards right side) sliding genioplasty with advancement was done. The improvement in facial esthetics is very well appreciated in post surgical picture. The flattening seen on right side body of the mandible will require another Medpore graft to camouflage it.



CLASS I MOLAR AND CLASS I CANINE WITH OVERJET OF 4MM AND OVERBITE OF 5 MM.



LOWER MIDLINE SHIFTED TO LEFT SIDE BY 5MM AND 12° TOWARDS LEFT

Figure 2: Intraoral view and midline shift

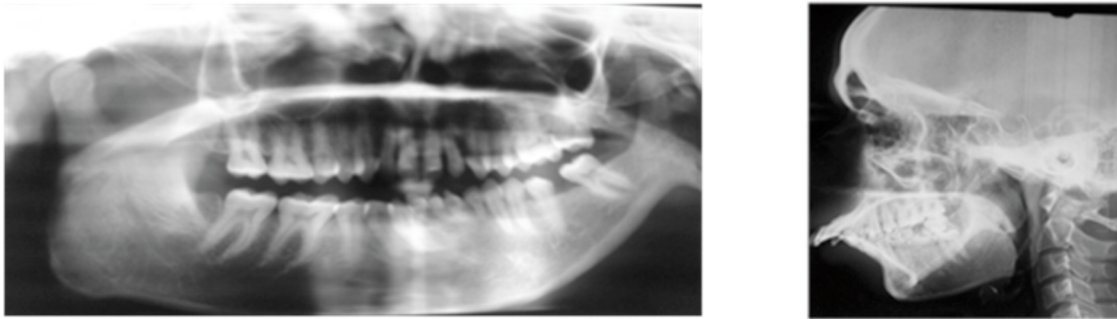


Figure 3: Pre-operative radiographs.



ANTERIOR SEGMENTAL OSTEOTOMY



POST OPERATIVE LATERAL CEPHALOGRAPH



SLIDING GENIOPLASTY



POST OPERATIVE FACIAL PROFILE

Figure 4: surgical and post surgical pictures.

DISCUSSION:

Treatment protocol for craniofacial microsomia vary widely. The clinical needs of patients with craniofacial microsomia depend entirely on the type and severity of the facial abnormalities, the aesthetic requirement of the patient and family and psychological support available to the patient^[3].

Various treatment approaches have been proposed for treating condylar aplasia and hypoplasia. Most of the time it is treated by a multidisciplinary team comprising of an oral maxillofacial surgeon, plastic surgeon and orthodontist.^[5]

Various surgical interventions can be planned depending on the severity of the asymmetry. The

procedure undertaken for such corrections are vertical ramus osteotomy, Le Fort osteotomies to correct occlusal cant, distraction osteogenesis, variety of genioplastic procedures, cosmetic augmentation with bone grafts/allografts (camouflage surgery) and orthodontic correction of teeth^[5,6].

A sagittal split osteotomy is generally difficult to perform on the deficient side of the mandible. In our case we did segmental maxillary osteotomy with Cupar's technique, a lateral sliding genioplasty and cosmetic augmentation with Medpore Allograft. No dental correction with orthodontic treatment was possible as patient refused treatment. The facial profile was dramatically changed and the patient was satisfied.

Patient is under follow up for another cosmetic correction for depressed mandible of right side and soft tissue correction with myotonic /myodynamic appliances.

CONCLUSION:

Patients with non syndromic condylar aplasia or hypoplasia are a rare sub group in which the condition does not seem to be progressive. Integration of surgical and orthodontic treatment is required for good prognosis and predictable outcome. Also variety of surgical options give better results, but it depends entirely on the age at which the patient first reports.

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Cite this article as: Mishra A, Maria A: Unilateral Condylar Hypoplasia and Treatment Modalities - . PJSR. 2016;9(2):72-75.

Source of Support: Nil, **Conflict of Interest:** None declared.