CASE REPORT

Review and Classification Update: Unilateral condylar hyperplasia

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SUMMARY

Unilateral condylar hyperplasia is characterised by slow progressive growth of the different parts of mandible, the aetiology of which is still unclear. It is a self-limiting condition mostly seen between the age of 11–30 years causing facial asymmetry and its progression ceases after a certain time. In literature until now very few cases have been reported and every case that is being reported adds to its features or the aetiology. Previously, it has been classified into two types that is, hemimandibular hyperplasia and hemimandibular elongation. Here, we report a similar case with a few features distinct from those reported earlier.

BACKGROUND

Unilateral condylar hyperplasia (CH) relates to the unilateral excessive growth of the condyle, characterised by slowly progressing and enlarging condyle along with elongation of body of mandible, which results in a shift in the midline to the contralateral side, ultimately leading to facial asymmetry, occlusal disharmony and joint dysfunction.^{1 2} Initially this condition was reported by Lohmann in 1918 and Gruca and Meisels in 1926. Afterwards an extensive literature review was carried out in 1946 by Rushton, wherein a total of 32 cases were found to be reported by 1946.³

CH has been reported to be a rare entity with a very few cases being reported in literature, mostly seen between 11 and 30 years of age, males and females being equally affected and having no predominance for the left or right side. It has also been reported to be a self-limiting condition, that is, the active growth can cease at any point of time.^{4 5}

The aetiopathogenesis is still unclear, but certain theories have been suggested which include trauma, hormonal imbalance, infection, arthrosis, hypervascularity and possibly genetic role.⁶

The typical features include enlargement of mandibular condyle, condylar neck and excessive growth of the body of mandible.⁷ Histopathological examination reveals excessive proliferation of articular cartilage, with thickened proliferation zone.¹

Keeping in view, the rarity of the disease here we report a case of unilateral CH in a 26-year-old male patient with a view to add a few features to the literature of the previously reported cases along with an update of the previously reported classification.

CASE PRESENTATION

A 26-year-old male reported to the Department of Oral Medicine and Radiology with facial disfigurement for the past 10 years. History revealed that the patient had a facial trauma 15 years ago and first noticed facial disfigurement at the age of 18 years and reported the same to his parents, but they preferred to ignore the condition as it was minor. But for the past 2–3 years, the facial disfigurement has increased subsequently and has become more apparent, for which the patient and his parents had shown concern and visited the department. Extra-oral examination revealed elongation on the right side with the lower half of the face. Further flattening of face was seen with left side, and deviation of mandible on the left side with protrusion of chin (patient did not give consent for his facial profile; he had only provided consent for the radiographic images). Intraoral examination revealed open bite on the right side with displacement of the midline towards the left side. Patient did not give any history of difficulty in opening mouth. The case was provisionally diagnosed as hemifacial hyperplasia based on the history and clinical examination.

INVESTIGATIONS

Subsequently, radiographic examination was performed in which orthopantomogram (figure 1) revealed symmetrical enlargement of right condylar head, condylar neck and body of the mandible up to the symphyseal region (not crossing the midline) when compared with the contralateral side. The right ascending ramus seems to be elongated along with thickened inferior border of the mandible of the same side. Because of enlarged right body of the mandible, deviation of symphyseal region was also observed, but the width of the mandibular canal seemed to be same when compared with the contralateral side. Postero-anterior view (figure 2) revealed enlargement with the right condylar head and elongation of the right ascending ramus and body of the mandible causing a shift in the midline. It further revealed a downward overgrowth/enlargement with the maxillary right alveolar ridge resulting in, shift in the maxillary occlusal plane. Lateral cephalogram (figure 3) revealed soft tissue profile with anterior prominence of chin, enlargement of body of mandible and unilateral open bite. Based on the radiographic findings, the case was finally diagnosed as unilateral CH of the right side.

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Figure 1 Orthopantomogram.

OUTCOME AND FOLLOW-UP

A high condylectomy was performed and the minor facial symmetry was achieved and further orthognathic surgery was advised. Corrections in the occlusion were undertaken using selective grinding and with the use of elastics. On subsequent follow-up the growth of the mandible had ceased.

DISCUSSION

Hemifacial hyperplasia and synovial chondromatosis are a few conditions that are considered as differential diagnosis of this condition. The differentiating facts being the involvement of soft tissue and enlarged teeth in the former and pain and swelling over pre-auricular region along with restricted temporomandibular joint movement in the latter.²

A conclusive classification of CH was provided by Obwegeser and Makek (1986), in which the condition was classified into two types, that is, hemimandibular hyperplasia (three-dimensional enlargement of one side of mandible including condylar

Figure 2 Postero-anterior view.

Figure 3 Lateral cephalogram.

head, condylar neck and ramus); hemimandibular elongation (horizontal displacement of mandible and chin towards unaffected side). Based on the classification provided, our case is a blend of the previously reported types.⁸ So a third type in addition to the classification of Obwegeser and Makek would include enlarged mandibular condyle, condylar neck and ramus of the mandible of the affected side, and in addition there is horizontal displacement of mandible and the chin to the contralateral side along with open bite on the affected side, which ultimately leads to flattening of face on the opposite side and fullness on the affected side.

In the present case, the patient had reported that there was a progress in the facial asymmetry and the growth has not ceased till now, although literature indicates that it is a self-limiting disease. Also, there is a contradiction among authors about the sex predilection, as some authors report that men and women are equally affected and some have reported that there is a woman predilection for this disease.^{5,9}

In the present case, patient gave history of trauma following which he noticed uneven growth of face. In a similar kind of case reported by Warriar and Sathasivasubramanian,² in 2010, a hypothesis was proposed based on the aetiopathogenesis involving trauma which stated that the longitudinal growth and expansion of same side of mandible is due to hyperactivity of two growth regulators located within the fibrocartilaginous layer of condyle. The present case is a positive indicator of this theory that trauma might be a factor for the aetiopathogenesis of this disease.

Radiographically, the shape of the condylar head can variate from being conical, spherical, elongated, lobulated, enlarged or irregular. Due to the presence of supplementary bone, it may also appear to be more radiopaque. Apart from variation in shape of condylar head, also there is presence of elongation of condylar neck and the ramus of mandible of the affected side. In the present case, there was presence of enlargement of condylar head, condylar neck and elongation of mandibular ramus and body of the affected side. Advanced imaging modalities such as CT, Cone Beam CT and Single-photon Emission CT have been advised that suggest whether the growth is active or not, which further helps in planning the treatment. MRI should be carried out when clinical and CT findings are suggestive of other diseases.¹⁰

The treatment modality is complex and is based on multiple factors including patient age, severity of asymmetry, malocclusion and activity of condylar growth. The best possible treatment with active CH includes high condylectomy, articular disc repositioning and orthognathic surgery, the outcome of which is stable and predictable when compared with those treated with orthognathic surgery alone.¹¹ Some authors advise that in adults patients with progressive symptoms of facial asymmetry and open bite without active condylar growth, orthognathic surgery is advisable. Although in cases where no malocclusion is reported mandibular inferior border osteotomy and facial recontouring can be performed.^{4 12}

Learning points

- Unilateral condylar hyperplasia (CH) usually ceases growth and the facial asymmetry is restricted to a certain point, but here the patient presented with progressive facial asymmetry.
- As the aetiology is still not clear, here the aetiological factor seemed to be trauma, which confirmed the previously proposed hypothesis by other authors listing trauma as one of the aetiological factor
- The previous classification divides CH into two categories, but in the present case we found mixed characteristic features from both the categories, thus we have mentioned it as an update of the previous classification by adding it as a third category with combined features of both.
- The radiographic features of different digital two-dimensional radiographs have also been described in details.

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REFERENCES

- 1 de Bont LG, Blankestijn J, Panders AK, *et al.* Unilateral condylar hyperplasia combined with synovial chondromatosis of the temporomandibular joint. Report of a case. *J Maxillofac Surg* 1985;13:32–6.
- 2 Warriar SA, Sathasivasubramanian S. Unilateral condylar hyperplasia – a rare case report. *Sri Ramachandra Journal of Medicine* 2010;3:20–2.
- 3 Perriman A, Uthman A. Unilateral condylar hyperplasia. *Bri J Oral Surg* 1971;3:273–80.
- 4 Kaur A, Boparai CDS, Singh B, *et al.* Facial asymmetry secondary to mandibular condylar hyperplasia – a case report with review of literature. *Indian J Comprehensive Dent Care* 2013;3:356–8.
- 5 Fisch AW, Espinosa CI, Quezada SR. Facial asymmetry secondary to mandibular condylar hyperplasia: A case report. *Revista Odontologica Mexicana* 2011;15:250–5.
- 6 Villanueva-Alcojol L, Monje F G-G. Hyperplasia of the mandibular condyle: Clinical, histopathological, and treatment considerations in a series of 36 Patients. *J Oral Maxillofac Surg*.
- 7 Perriman A, Uthman A. Unilateral condylar hyperplasia. *Br J Oral Surg* 1971;8:273–80.
- 8 Obwegeser HL, Makek MS. Hemimandibular hyperplasia–hemimandibular elongation. *J Maxillofac Surg* 1986;14:183–208.
- 9 Nitzan DW, Katsnelson A, Bermanis I, *et al.* The clinical characteristics of condylar hyperplasia: experience with 61 patients. *J Oral Maxillofac Surg* 2008;66:312–8.
- 10 Higginson JA, Bartram AC, Banks RJ, *et al.* Condylar hyperplasia: current thinking. *Br J Oral Maxillofac Surg* 2018;56 <https://doi.org/>.
- 11 Wolford LM, Mehra P, Reiche-Fischel O, *et al.* Efficacy of high condylectomy for management of condylar hyperplasia. *Am J Orthod Dentofacial Orthop* 2002;121:136–51.
- 12 Alyamani A, Abuzinada S. Management of patients with condylar hyperplasia: A diverse experience with 18 patients. *Ann Maxillofac Surg* 2012;2:17–23.

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