Unilateral mandibular condylar hyperplasia: A cause for facial asymmetry

Clinical History:

A 20-year-old female patient presented to the Dental Out-Patient Department (OPD) with the chief complaint of facial asymmetry in the form of deviation of the chin towards the left side. The patient had no history of pain, difficulty in opening the mouth, infection or trauma.

Imaging Findings:

External examination of the patient revealed facial asymmetry in the form of deviation of the chin towards the left side with a prominent angle of the mandible and flattening of the face on the contralateral side. Oral examination showed crowding in the lower anterior teeth with evidence of crossbite malocclusion on the right side (Fig. 1).

The patient was then advised to undergo imaging work up. Orthopantomogram (Fig. 2) revealed enlargement and expansion of the right condylar head with elongation of the condylar neck. The right mandibular ramus appeared enlarged with downward and outward displaced gonion. CT examination of the face (Fig. 3-5) showed an enlarged and expanded right mandibular condyle with thickened and elongated condylar neck and outward bowing and downward growth of the ramus. The right glenoid fossa appeared shallow with a blunted articular eminence and deviation of mandibular midline towards the contralateral side.

Discussion:

The congenital abnormalities of the mandibular condyle are classified morphologically into three major groups and two subgroups from a clinical standpoint: (a) hypoplasia or aplasia of the mandibular condyle, including (i) primary condylar aplasia and hypoplasia, (ii) secondary condylar hypoplasia; (b) hyperplasia; and (c) bifidity. Unilateral condylar hyperplasia is an uncommon condition of unknown aetiology, for which proper diagnosis has to be established, since patients may seek advice because of lower facial asymmetry and may ask for surgical correction. This malformation involves change in the size and morphology of the condylar head and neck. The disease usually occurs unilaterally with age predilection between first and third decades of life [1]. Men and women show equal
Norman & Painter [2] conducted a historical review of condylar hyperplasia and published a series of cases about the knowledge of the disease emphasizing the facial deformity and chin displacement as its main characteristics. Some of them include previous trauma, hormonal disturbances, true neoplasia, partial hemihypertrophy and neurotrophic disturbances [3].

There are three types of condylar hyperplasia proposed by Obwegeser and Makek [4] which were based on imaging and clinical characteristics: Hemimandibular hyperplasia (HH), which includes enlargement of condylar head and neck, ramus and body with tilting of the occlusal plane; hemimandibular elongation (HE), which includes condylar neck enlargement and variable displacement of the ramus and body without tilting the occlusal plane; and hyperplasia of the condyle only.

Characteristic features of condylar hyperplasia include an enlargement of the mandibular condyle, elongation of the condylar neck, downward growth and outward bowing of the body and ramus of the mandible on the affected side, fullness of the face on that side and flattening on the opposite side [5].

A radiological examination is required for a definitive diagnosis. Lateral cephalometric radiographs and the linear and angular measurements would provide information to determine whether the maxilla or other facial or skull bones are involved. Posteroanterior cephalometric projections are useful for detection of a horizontal shift of the mandibular midline. Conventional radiography (orthopantomogram) also helps in identifying this condition [6]. Bone imaging using technetium-99 phosphate is a non-invasive technique to evaluate whether the hyperplastic growth is still active or not [7]. Histopathological examinations demonstrate widening of the fibrocartilage covering the condyle, a wide richly vascularized proliferation zone enriched with large cells near its bony aspect and osteoclasts in the lacunae between new trabeculae formed by surrounding osteoclasts [8].

**Differential Diagnosis List:** Unilateral mandibular condylar hyperplasia, Hemimandibular hypertrophy, Hemimandibular elongation

**Final Diagnosis:** Unilateral mandibular condylar hyperplasia

**References:**


Description: Intraoral examination revealed fair oral hygiene with crowding in the lower anterior teeth and crossbite malocclusion on the right side. No other significant abnormality was noted. Origin: Department of Radio-diagnosis, JN Medical College, AMU, Aligarh
Description: Panoramic view revealed an enlarged and expanded right condylar head with thickened and elongated condylar neck. The right mandibular ramus appeared enlarged leading to downward and outward deviation of gonion. Origin: Department of Radio-diagnosis, JN Medical College, AMU, Aligarh, INDIA
Description: Coronal CT showed an enlarged, expanded right mandibular condylar head with thickening and elongation of its neck and adjoining portion of the ramus. The glenoid fossa appeared shallow with blunting of the articular eminence. Origin: Department of Radiodiagnosis, JN Medical College, AMU, Aligarh, INDIA
Figure 4

**Description:** 3D surface shaded display of the face demonstrating the enlarged and expanded right mandibular condylar head with thickened and elongated neck and adjoining portion of the ramus.

**Origin:** Department of Radiodiagnosis, JN Medical College, AMU, Aligarh, INDIA
**Figure 5**

**Description:** 3D surface shaded display of the face shows crowding in lower anterior teeth, crossbite malocclusion on the right side with deviation of the chin towards the left along with downward and outward displacement of gonion. **Origin:** Department of Radio-diagnosis, JN Medical College, AMU, Aligarh, INDIA