

UNILATERAL CONDYLAR HYPERPLASIA OF THE MANDIBLE

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Abstract

Condylar hyperplasia (CH) of the mandible is a rare pathology that occurs at the head of the condyle and can lead to facial asymmetry affecting occlusion and possible association with pain and dysfunction. Unilateral condylar hyperplasia is an uncommon condition of unknown aetiology, proper diagnosis of which has to be established, as the patients may look for surgical help. A rare case of unilateral condylar hyperplasia of the mandible is reported here.

Key words:

Temporomandibular joint, mandibular condyle, condylar hyperplasia

INTRODUCTION

Hyperplasia of the condylar process of the mandible is a rare condition involving abnormal growth around the head of the condylar process. Condylar hyperplasia with mandibular asymmetry was first described by Adams in 1836 as a complication of rheumatoid arthritis (5). Aetiological factors may be trauma or infection which usually result in unilateral extension of the mandibular cervix with deflection of soft tissues of the cheek into the opposite side. Other possible aetiological factors which are usually mentioned are benign tumours, hormonal or other proliferative diseases (1,2,3,6,7).

The disease most often manifests itself in an individual between 11 and 30 years of age. There have been no proven causal relationships between the right and left sides or between men and women.

Obwegesser and Makek (6) classified condylar hyperplasia using three categories:

Hemimandibular hyperplasia with asymmetry in the vertical direction, hemimandibular elongation with asymmetry in the transverse direction and a third category which is a combination of these two states.

The condition is characterized by a unilateral growth in a vertical or transverse direction, and asymmetry of the oral slit. Normal occlusion becomes laterally open or there is a cross-bite on the affected side, the angle of the mandible is located lower and is more conspicuous than the other and the centre line is shifted towards the healthy, unaffected side.

Subjectively the patients may have minor or major degree of pain; usually there is a swelling in the pre-auricular area with a feeling of pressure in this area. Crepitus, subluxation or hypomobility may be present in the affected joint (2,3,5).

X-ray, CT or MRI examination can prove the presence of pathologically changed tissue in the area of the joint head which can fill the joint socket or enlarge the joint capsule (4,5,10).

Histopathological examination proves the presence of cellular and collagen fibrotic ligaments with fragments of striated muscles. The periosteum may be more robust with rhagades that are filled with blood (9).

Condylar hyperplasia may arise due to muscle disorders or joint disorders (5,6,7).

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Muscle disorders

Hyperactivity, spasm, trismus
Inflammation (myositis)
Trauma
Myofacial pain and fibromyalgia
Atrophy or hypertrophy

Joint disorders

Disc shift
Disc decreased mobility (adhesion)
Dislocation and subluxation of the disc
Arthritis
Infectious, metabolic diseases
Capsulitis, synovitis
Ankylosis (fibrous, osseous)
Fractures
Condylar hyperplasia, hypoplasia
Aplasia and neoplasia

Case report

A 30-year old patient came to the Dental Practice of the Clinic of Stomatology and Maxillofacial Surgery, University Hospital in Martin with swallowing and initial pains in the area of the left temporomandibular joint lasting for about 9 months, without any serious previous diseases or traumatic affliction of the given area. Clinical examination detected a swelling in the left pre-auricular area, with an area of about 2x2 cm. Opening of the mouth was difficult and painful. During opening of the mouth, there was mandible deviation and the midline was shifted about 5 mm to the right (Fig.1 and 2).



Fig. 1 Closing defect of the mandible

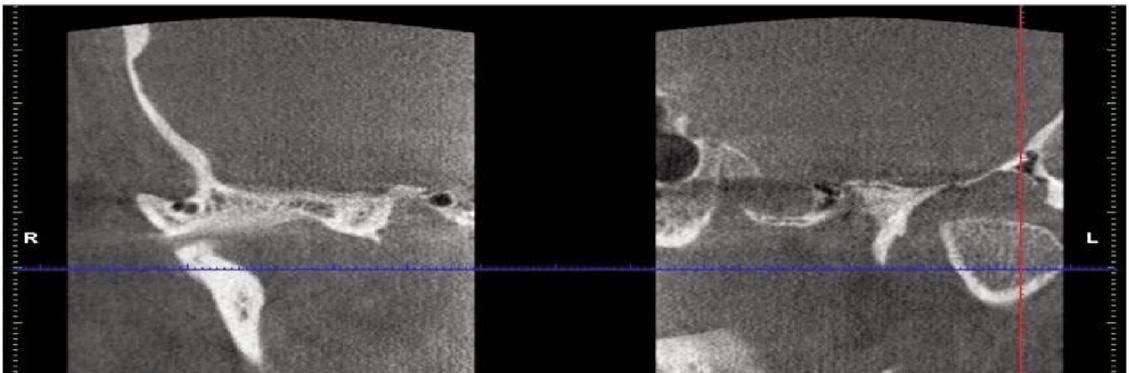


Fig. 2 X-ray revealed an enlargement of the left mandibular joint process head. This proved the process of collum mandibulae on the left side.

The material was sent for histopathological examination, which found hyperplasia of the soft tissues surrounding the joint and secondary bone remodelling with incipient atrophy of the spongiosa. Detected changes in terms of tiny lacerations of the periosteum and bleeding may be a reaction to post-traumatic changes of the joint resulting from hyperplasia (Fig. 3 and 4).



Fig. 3 The pathologically altered soft tissue components after high condylectomy

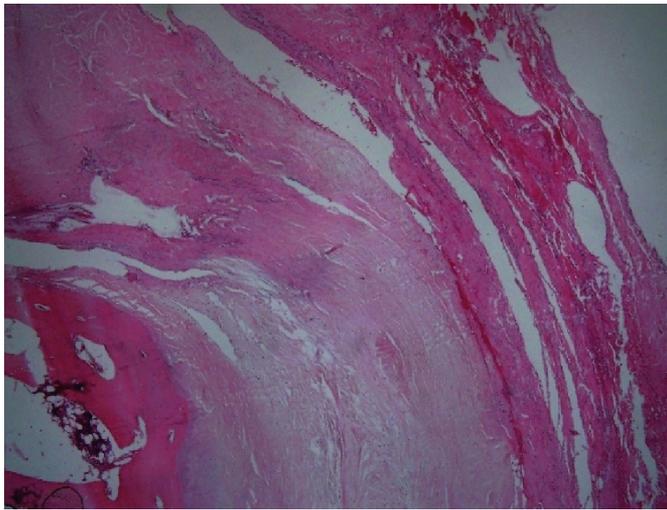


Fig. 4 On the right side down, a depleted compact bone is detected; above it there is a noticeably thickened fibrous tissue-proliferated periosteum with hyalinoid deposits. In the peripheral part of the periosteum is a bleeding laceration (HE, 100x).

The patient's condition after surgery was subjectively and objectively good; the surgical wound healed per primam, the stitches were removed on the 7th- 8th postoperative day. In overall good condition, the patient was discharged to home treatment. In the early postoperative period, the patient underwent prosthetic treatment to resurface dental cusps in the occlusal position.

At a follow-up examination five months later, the patient subjectively felt good. Objective examination revealed sufficient range of opening and closing jaw movements, without signs of lateralizing movements. The teeth were in occlusal position and the surgical wound was without pathological changes (Fig.5).



Fig. 5 Patient's bite five months after surgery

DISCUSSION

The aetiology and the pathogenesis of condylar hyperplasia are unknown. In some cases, the resulting state is preceded by trauma, and sometimes the presence of neoplasia and hormonal changes. Sometimes it can be triggered off by an inflammatory process in the form of arthritis, osteoarthritis and chondromalacia (1,2,3,5,6,7).

Obwegesser and the Makek (6) divide condylar hyperplasia into two types: the first type is hemimandibular hyperplasia and the other type is hemimandibular elongation.

Hemimandibular hyperplasia is characterized by a possible three-dimensional enlargement in size of the mandible mostly in one direction. This is either enlargement of the head of the condylar process, enlargement of the condylar spur, or increase of the upward jaw arm sled in its horizontal dimension.

Hemimandibular elongation is characterized by a horizontal sliding of the mandible in combination with the shift of the soft buccal tissue forward (6).

In a patient with no apparent previous disease, the left condylar process started to become enlarged together with simultaneous damage of the joint capsule due to an inflammatory process.

Hyperplasia of the condylar process of the jaw can cause bite defects due to hyperplasia of the condyle and the soft buccal tissue on one side and an enlargement of the alveolar process of the maxilla and shift of the upper teeth in caudal direction on the other hand. These conditions may occur only in later stages (2,3,8,9).

Clinical examination is always accompanied with a radio diagnostic examination whether native or special CT projection images. If indicated, it is appropriate to make an MRI examination of the TMJ in the sagittal and coronary projections with closed and open mouth (2,4,5,7,10).

A condylectomy is indicated as definitive surgical therapy. In some cases, in the early post-operative period, this must be supplemented by subsequent dental treatment in the form of either grinding of cusps or orthopaedic orthodontic treatment (2,4,7,9,10). Histopathological examination can detect the presence of fibrotic ligaments with fragments

of striated muscle. The periosteum is usually enlarged with present rhagades that are filled with blood (2,9,10).

Five months after the high condylectomy, the patient's tooth cusps were filed down but no other treatment was carried out (Fig.5).

CONCLUSION

Unilateral condylar process hyperplasia of the mandible is a rare disease that influences changes in the growth of the growth centre of the mandible head. A thorough history, clinical, X-ray and histopathological examination of the patient with simultaneous adequate surgical intervention ensure a good functional and aesthetic outcome for the patient.

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