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READER'S FORUM

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Surgical approach and orthodontic treatment of mandibular condylar osteochondroma.

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This was an interesting orthodontic and orthognathic surgical case of skeletal Class III malocclusion coupled with significant mandibular asymmetry developed from osteochondroma. Following outstanding clinical management, stable occlusion and esthetic profile led to the satisfying treatment outcomes despite continuous bone resorption and remodeling in the condyle of the affected side after surgery.

Q1. Intraoral photographs taken 6 months after the surgery showed large overjet and posterior openbite on the left side as well as shallow buccal overjet and premature contact on the right side. Apparently, the occlusion improved after intrusion of the right side treated with temporary anchorage devices. Are there any reasons for the relatively short preoperative treatment duration, which was 5 months, and what could be the special benefit of this early surgery in this case?

Q2. Authors stated that an observation period was 6 months after the surgery, given continuous bone resorption and remodeling of the condyle. During this period, what clinical aspects should be monitored and also were there any specific precautions to be followed in elastic use after the surgery?

Q3. During the postoperative orthodontic treatment period, the mandibular anterior tooth was extracted after periodontal considerations. Was this fact factored in for establishment of anterior occlusion during pre-surgical planning?

Q4. What is the retention status of the patient? If any changes, were they within the range of your anticipation?

Questioned by
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A1. A wedding for the patient's family member was coming soon, so the patient wanted to improve her appearance before the event. In this case, the goal of preoperative orthodontic treatment was to improve canting of the occlusal plane and to relieve premature contacts in the post-surgical occlusion to ensure a minimal stable occlusal relationship immediately after surgery. Therefore, surgical occlusion through minimal pre-orthodontic treatment was planned with a focus on leveling and intrusion of the right occlusal plane while other issues were planned to be solved after orthognathic surgery. After the surgery, the patient participated in the wedding event with satisfaction, and then received more orthodontic treatment to solve the remaining problems.

A2. As mentioned in Q1, large overjet and openbite on the left side, and shallow buccal overjet with premature contact on the right side were not intended. It was an unstable result due to the simultaneous removal of

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mandibular osteochondroma and mandibular setback surgery. During the postsurgical orthodontic treatment, we focused on restoring the balance of the occlusal contact between the left and right posterior teeth to prevent the mandibular deviation to the right due to the additional resorption or remodeling of the right mandibular condyle. Therefore, we intruded the right side of maxillary posterior teeth and stabilized the occlusion by using vertical elastic on the left posterior teeth. This can be thought as a process in which the patient adapts to maintain the maximum intercuspal position during mastication because there is a possibility of occlusal instability due to additional changes in the mandibular condyle in the long term.

A3. Consideration of the mandibular anterior tooth extraction was already in the treatment plan, but as mentioned in the answer to the first question, the period of orthodontic treatment before surgery had to be minimized, and the patient did not want space in her teeth. Since the mandibular anterior teeth did not interfere with surgical occlusion, removal of the incisor was to be performed during orthodontic treatment after surgery.

A4. The patient wore the upper full circumferential retainer for about 6 months, and is currently being observed after delivery of a bonded canine to canine retainer on the upper and lower arches. At the retention check after 2 years of removing the brackets, a slight occlusal premature contact in the right posterior region and sliding into maximum intercuspal position were observed, but the patient was not aware of discomfort. However, long-term observation is necessary for the occlusal changes and remodeling of the mandibular condyle.

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