Treatment of Osteochondroma in the Mandibular Condyle and Secondary Dentofacial Deformities Using Surgery Combined With Orthodontics in Adults

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Purpose: Osteochondroma is a benign tumor that is rare in the craniofacial region. When it does occur, the condyle and coronoid process have been the most commonly affected sites. The secondary progressive malocclusion and facial asymmetry will be common physical signs in most cases. The traditional surgical treatment of osteochondroma of the mandibular condyle has been condylectomy, with or without reconstruction of the condyle. We believe more attention should be paid to restoring joint function, improving the facial appearance, correcting malocclusion, and re-establishing harmony among them.

Patients and Methods: From January 2000 to March 2013, 27 patients (17 women and 10 men) who had been diagnosed with osteochondroma of a unilateral mandibular condyle underwent condylectomy and condylar reconstruction using a pedicled posterior mandibular border obtained by ramus osteotomy. The secondary dentofacial deformities were simultaneously corrected using orthognathic and facial contouring procedures, followed by orthodontic treatment, when necessary. Occlusion and temporomandibular joint pain and function, including the maximal mouth opening and maximal protrusion, were recorded preoperatively and postoperatively.

Results: The patients were followed for an average of 13 months (range 24 to 48). The outcomes of, and feedback information from the patients showed apparent improved joint function, with no cases of osteochondroma recurrence. The secondary dentofacial deformities were corrected significantly. Satisfactory occlusion was achieved with orthognathic and orthodontic treatment.

Conclusions: Our data suggest that condylectomy and condylar reconstruction, with simultaneous correction of the secondary dentofacial deformities using orthognathic procedures, might be a better approach to manage osteochondroma accompanied by dentofacial deformities. In addition to facial contouring procedures, orthodontic treatment should be considered for better improvement in facial esthetics and occlusion.

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Osteochondroma is a benign tumor that is rare in the oral and maxillofacial area, with the coronoid process and condyle of the mandible the most common regions of occurrence.[1-8] The growth of osteochondroma in these regions usually will be slow,[1,5] causing morphologic and functional disturbances that can

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Table 1. CLINICAL CHARACTERISTICS OF FACIAL ASYMMETRY, OPERATIVE METHOD, AND OUTCOMES (TUMOR RECURRENCE AND OCCLUSION)

Group	Clinical Characteristics	Patients (n)	Operation	Recurrence	Postoperative Occlusion
I	A + B	6	a + b + c	No	Good
II	A + B + C	16	a + b + c + d	No	Good
III	A + B + C + D	5	a + b + c + d + e	No	Good

Abbreviations: A, deflective mandible; B, ipsilateral mandibular ramus and inferior border elongation; C, deflective chin; D, ipsilateral maxillary vertical overdevelopment; a, condylectomy and vertical ramus osteotomy; b, contralateral sagittal split ramus osteotomy; c, ipsilateral inferior border ostectomy; d, genioplasty; e, Le Fort I osteotomy.

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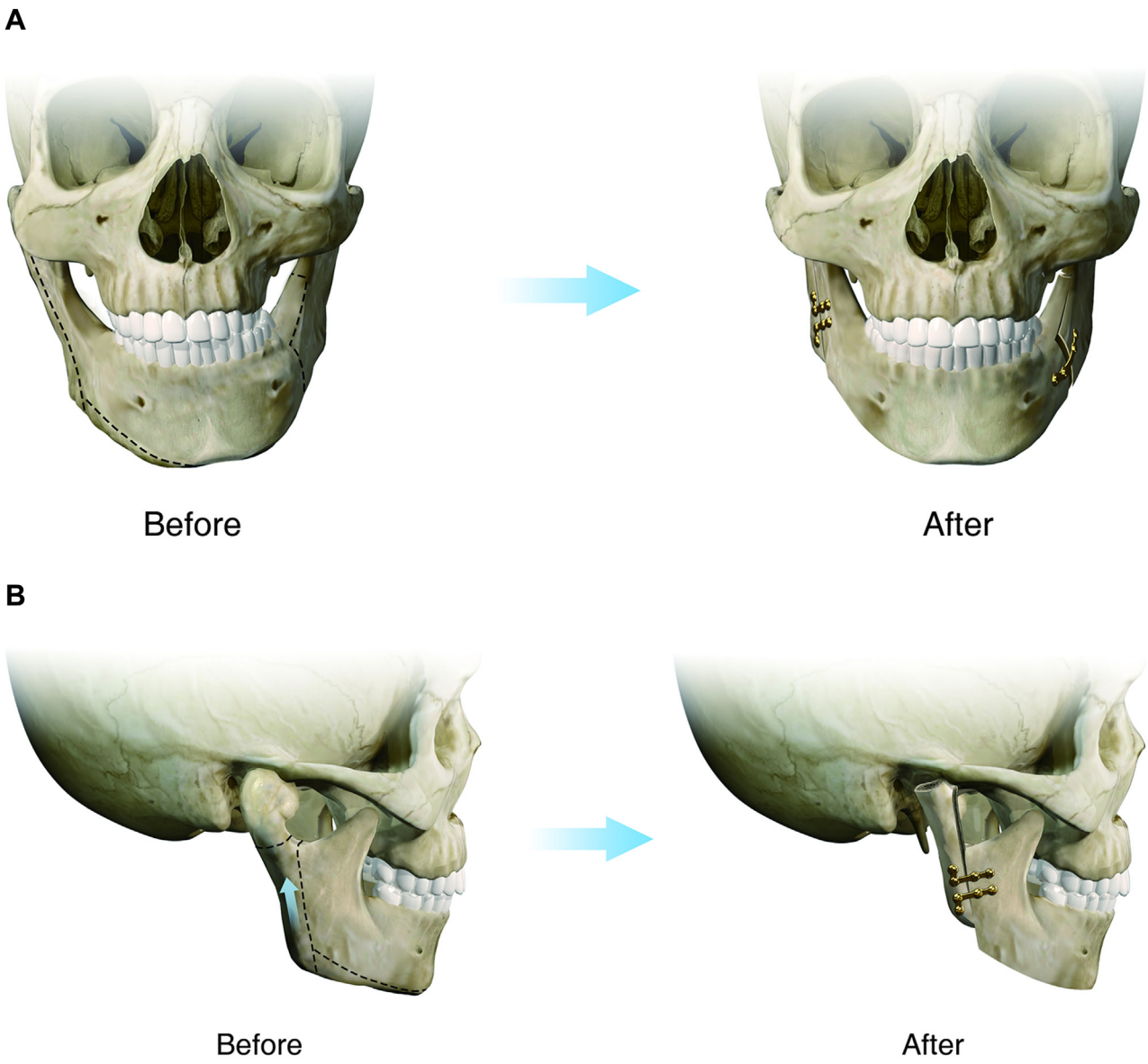

FIGURE 1. Illustrations of design lines and procedures for group I, who underwent condylectomy, vertical ramus osteotomy, contralateral sagittal split ramus osteotomy, and ipsilateral inferior border ostectomy. *A*, Anterior views before and after surgery. *B*, Lateral views before and after surgery.

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