

One-Stage Treatment to Osteochondroma of the Coronoid Process and Secondary Facial Asymmetry With Coronoidectomy and Reduction Malarplasty: A Case Report and Literature Review

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Purpose: This study summarizes the literature concerning osteochondroma of the mandibular coronoid process and presents a case of 1-stage treatment for this condition and concomitant facial asymmetry.

Materials and Methods: A 20-year-old man presented with osteochondroma of the mandibular coronoid process. Radiologic images showed a mushroom-shaped coronoid growth inside the zygomatic arch with outward expansion. Coronoidectomy and reduction malarplasty were performed in 1 stage. The literature on osteochondroma of the mandibular coronoid process since 1943 was reviewed concerning etiology, pathogenesis, clinical characteristics, diagnosis, and treatment.

Results: At 20-month follow-up, the patient achieved markedly improved joint function and a symmetric facial appearance after excision of the osteochondroma.

Conclusion: Coronoidectomy combined with simultaneous reduction malarplasty could be an alternative and promising method to treat osteochondroma of the coronoid process with secondary facial asymmetry.

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Osteochondroma, also known as osteocartilaginous exostosis, is one of the most common benign bone tumors. It usually occurs in the metaphyseal region of the long bones, such as the femur or tibia. It also occurs, although rarely, in the maxillofacial skeleton. The coronoid process and condylar of the mandible have been considered the most common sites of occurrence for osteochondroma of the facial skeleton.¹ Enlargement of the mandibular coronoid process was first noted by Langenbeck² in 1853. However, osteochondroma of the coronoid process was first described by Jacob³ in 1899 as forming a

pseudojoint formation between the coronoid process and the zygomatic arch, which was detected at autopsy examination. There have been scattered reported cases in the literature since then.

A review of the literature showed that 62 cases of pathologically confirmed osteochondroma of the coronoid process have been reported since 1943 (Table 1), including the present case.⁴⁻⁵⁸ In the present article, only cases with a histologic diagnosis of osteochondroma or cartilaginous exostosis or cases with a description of histopathologic characteristics of osteochondroma were included. Lesions reported as

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Table 1. SUMMARY OF REPORTED CASES OF OSTEOCHONDROMA OF THE CORONOID PROCESS

Case no.	Author	Year	Gender	Age (yr)	Side	Facial Asymmetry	Mouth Opening (mm)	Treatment
1	Shackelford and Brown ¹⁷	1943	male	15	left	present	12.5	extraoral coronoidectomy
2	Shackelford and Brown ¹⁷	1943	male	19	right	present	10	extraoral coronoidectomy
3	Brandt ¹⁸	1943	female	37	right	present	25	extraoral coronoidectomy
4	Shackelford and Brown ⁷	1949	male	38	right	present	reduced	extraoral coronoidectomy
5	Brailsford ¹⁹	1952	male	28	left	present	12.5	not described
6	Holmes ²⁰	1956	male	30	bilateral	absent	7	bilateral coronoidectomy
7	Holmes ²⁰	1956	male	36	left	absent	8.0	coronoidectomy
8	Levine et al ²¹	1957	female	73	left	present	6	coronoidectomy
9	Dingman and Natvig ²²	1957	male	27	right	absent	8	extraoral coronoidectomy
10	Antoni et al ²³	1958	male	29	left	present	no limitation	intraoral coronoidectomy
11	Pap and Friedman ²⁴	1958	male	30	left	present	10	extraoral coronoidectomy
12	Lebo ²⁵	1961	male	18	left	absent	14	extraoral coronoidectomy
13	Mohnac ²⁶	1962	male	18	right	not described	18	extraoral coronoidectomy
14	Allan and Reid ²⁷	1967	female	32	right	absent	16	intraoral coronoidectomy
15	Allan and Reid ²⁷	1967	male	22	left	present	13	intraoral coronoidectomy
16	Meyer ²⁸	1972	male	10	right	present	20	intraoral coronoidectomy
17	James et al ²⁹	1974	female	52	right	present	5	extraoral coronoidectomy
18	Cooper and Finch ³⁰	1974	female	43	left	absent	6	intraoral coronoidectomy
19	Takeda et al ³¹	1975	female	14	left	absent	10	extraoral coronoidectomy
20	Singer and Schulz ³²	1976	male	64	right	present	5	combined intraoral and extraoral coronoidectomy
21	Ramon et al ³³	1977	male	45	right	present	reduced	combined intraoral and extraoral coronoidectomy
22	deBurgh Norman and Painter ³⁴	1980	male	21	left	not described	3	intraoral coronoidectomy
23	Ito et al ³⁵	1981	female	20	left	present	3	extraoral coronoidectomy
24	Ishii et al ³⁶	1983	female	32	left	present	7	intraoral coronoidectomy
25	Ishii et al ³⁶	1983	male	53	right	present	20	combined intraoral and extraoral coronoidectomy
26	Revington ³⁷	1984	male	24	right	absent	8-9	extraoral coronoidectomy
27	Tucker et al ³⁸	1984	male	16	right	present	22	intraoral coronoidectomy
28	Schwartz and Patrick Liebel ³⁹	1987	male	15	left	present	18	extraoral coronoidectomy
29	Totsuka et al ¹⁶	1990	female	37	left	present	2	intraoral coronoidectomy
30	Asanami et al ⁴⁰	1990	male	17	left	present	8	combined intraoral and extraoral coronoidectomy
31	Kerscher et al ⁴¹	1993	male	45	left	absent	14	intraoral coronoidectomy
32	Çenetoglu et al ⁴²	1996	male	19	left	present	12	intraoral coronoidectomy
33	Kermer et al ⁴³	1996	male	40	left	present	10	extraoral coronoidectomy
34	Costantinides et al ⁴⁴	1997	male	31	right	present	10	extraoral coronoidectomy
35	Gross et al ⁴⁵	1997	male	22	left	present	20	coronoidectomy
36	Chen et al ⁴⁶	1998	female	57	left	present	14	extraoral coronoidectomy
37	Manganaro ⁴⁷	1998	female	26	left	present	20	intraoral coronoidectomy
38	Chichareon et al ⁴⁸	1998	male	3	right	present	20	coronoidectomy
39	Hernández-Alfaro et al ¹²	2000	male	22	left	present	21	extraoral coronoidectomy

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