

# Osteochondroma of Coronoid Process and Joint Formation with Zygomatic Arch (Jacob Disease): A Rare Case Report

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## Abstract

Osteochondroma is one of the most common benign neoplasia of the skeleton. In the head region it was been described in cranial base, posterior maxillary surface, maxillary sinus and different mandibular areas like ramus, condyle, body and symphysis. Osteochondroma of the coronoid process is one of the rare conditions. In this case report we are presenting a case of Osteochondroma of Coronoid Process and Joint Formation with Zygomatic Arch.

**Keywords:** Mandible, Osteochondroma, Jacob disease, Computed tomography

## INTRODUCTION

Enlargement of the coronoid process of the mandible was first noted and described by Langenbeck in 1853. The joint formation between coronoid process and zygoma was first described by Jacob in 1899. Subsequently, enlargement of the coronoid process has been sporadically reported in the literature.<sup>1</sup>

Osteochondroma is the most common benign neoplasia of the skeleton. It is more frequently found in long bones due to the endochondral growth. It has been described in the head, on the cranial base, jaw, maxillary sinuses, condyle, ramus, body and symphyseal mandibular region. Coronoid process is a low frequent site.<sup>2</sup> Osteochondroma, exostosis, osteoma, hypertrophy, hyperplasia and developmental anomalous may cause coronoid process enlargement.<sup>3,4</sup> Osteochondroma is uncommon in the craniofacial skeleton. However osteochondroma of the coronoid process is even more rare.<sup>5,6</sup>

We present a case of Jacob disease due to osteochondroma of coronoid process including all criteria such as clinical, radiological, surgical and histopathological.

## CASE REPORT

A male patient of 58 years reported to private clinic with complaint of swelling over the left side of face

with mild pain (Figure 1 and 2). The swelling was first noticed by the patient around 6 months back. The main complaint of the patient was that the swelling was increasing in size after the extraction of the upper left molars. The extraction was carried out somewhere else several months back.

On extra-oral examination a hard, palpable swelling was noticed over the left temporomandibular joint area. Swelling was more obvious while opening the mouth.

On intra-oral examination, upper left molars were found absent with normal extraction healing. Swelling was non palpable intra-orally. Submandibular lymph nodes were normal. Oral hygiene of the patient was fair.

Patient did not have any relevant medical history. Patient gave history of tobacco chewing for ten years.

## INVESTIGATIONS DONE

1. X-ray O.P.G, lateral view of the left side.
2. C.T. Scan.
3. Haemogram.

Orthopantomogram suggested a large radio opaque lesion just above the coronoid process over shadowing it (Figure 3).

C.T Remarks: The C.T imaging feature reveal 27.8\* 22.8\* 17.7 mm sized well defined osseous lesion arising from the lateral aspect of the coronoid process of mandible on the left. CT Scan also suggests presence of thin and smooth cartilaginous cap around the lesion, which favours the diagnosis to be Osteochondroma [bony plus cartilaginous part]. No atypical features were seen (Figure 4).

## DISCUSSION

Although osteochondroma is the most common tumor of skeletal bones, it is relatively uncommon in the jaw, occurring at the condyle or the tip of the coronoid process. This benign cartilage-capped growth is usually discovered incidentally on radiographic examination or on palpation of a protruding mass in the affected area.<sup>7</sup>

Initial signs and symptoms include tightness within the joint area and gradual reduction in mouth opening. The slow development of trismus and painless facial mass typify the later stages.<sup>8</sup>

Shackelford and Brown<sup>9</sup> first reported 2 cases of enlargement of the coronoid process, there has been much confusion with regard to the basic nature of this entity. Differences in the proportion of cartilaginous and bony elements in the specimen have justified several histologic diagnoses, namely, osteochondroma, osteoma, cartilage-capped exostosis, and hyperplasia.<sup>10</sup>

McLoughlin et al<sup>11</sup> analyzed 31 cases of hyperplasia of the mandibular coronoid process. They discovered that many patients who suffered the disease had experienced a trauma before, especially zygomatic arch bone trauma.

Bennett V. York and Steve Cockerham<sup>12</sup> have reported a case occurring in 2 members of 1 family, indicating that heredity may play a role in coronoid process hyperplasia.



Figure 1: Clinical photograph of patient when reported to private clinic



Figure 3: Orthopantomogram of patient



Figure 2: Slight facial asymmetry (clinical picture)

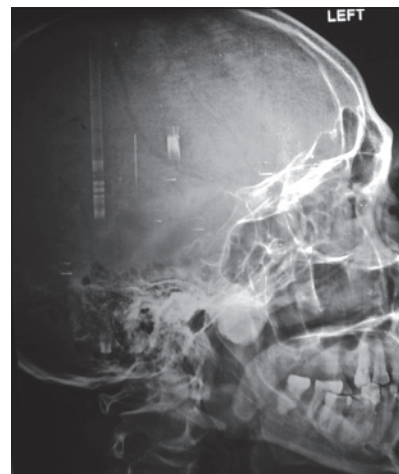


Figure 4: Computed tomography imaging

## TREATMENT

Surgical treatment is recommended to treat coronoid process. Intraoral coronoidectomy in association with early postoperative rehabilitation may ensure satisfactory short-term results and get quite well long-term results.

## CONCLUSION

CT imaging is an important tool in patients who presented with zygomatic swelling and limited mouth opening. CT imaging with 3D reconstruction can diagnose the Jacob disease with showing relationship between enlarged coronoid and zygomatic arch. CT imaging can be used as a guide for planning the core needle biopsy and surgical approach in the preoperative period.

## REFERENCES

- Hernández-Alfaro F, Escuder Ó, Marco V. Joint formation between an osteochondroma of the coronoid process and the zygomatic arch (Jacob disease): report of case and review of literature. *Journal of oral and maxillofacial surgery*. 2000; 58(2):227-232.
- Villanueva J, González A, Cornejo M, Núñez C, Encina S. Osteochondroma of the coronoid process. *Medicina Oral*. 2006; 11:289-91.
- Meyer RA. Osteochondroma of coronoid process of mandible: report of case. *J Oral Surg*. 1972; 30:297-300.
- Totsuka Y, Fukuda H, Iizuka T, Shindoh M, Amemiya A. Osteochondroma of the coronoid process of the mandible. Report of a case showing histological evidence of neoplasia. *J Craniomaxillofac Surg*. 1990; 18:27-32.
- Kerscher A, Piette E, Tideman H, Wu PC. Osteochondroma of the coronoid process of the mandible. Report of a case and review of the literature. *Oral Surg Oral Med Oral Pathol*. 1993; 75:559-564.
- McGuire MH, Mankin HJ, Schiller AL. Benign cartilage tumors of bone. In: Everts CMC., editor. *Surgery of the musculoskeletal system*. 2nd ed. New York-Edinburg-London-Melborn: Churchill Livingstone; 1990. pp. 4720-4725.
- O. Ribas Mde, W.D. Martins, M.H. de Sousa *et al*. Osteochondroma of the mandibular condyle: literature review and report of a case. *J Contemp Dent Pract*. 2007; 8:52-59.
- A. Roychoudhury, Y.K. Gupta, H. Parkash *et al*. Jacob disease: report of a case and review of the literature. *J Oral Maxillofac Surg*. 2002; 60:699-703.
- RT Shackelford, WH Brown. Restricted jaw motion due to osteochondroma of the coronoid process. *J Bone Joint Surg Am*. 1949; 1:107.
- WB Farrar, WL McCarty. *A Clinical Outline of Temporomandibular Joint Diagnosis and Treatment*. (ed 7) Normandie Publications, Montgomery, AL (1982), pp. 7-8.
- PM McLoughlin, C Hopper, NB Bowley. Hyperplasia of the mandibular coronoid process: an analysis of 31 cases and a review of the literature. *J Oral Maxillofac Surg*. 1995; 53:250-255.
- B.V. York, S. Cockerham. Bilateral hyperplasia of the coronoid processes in siblings. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 1983; 56:584-585.

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