

OSTEOMA OF MANDIBULAR CONDYLE — A CASE REPORT

¹EMAN ZAFAR

²ZAINAB AKBAR

³KALEEM NIAZI

⁴BABAR PASHA

ABSTRACT

Osteoma is a benign often asymptomatic tumor, consisting of mature bone tissue. It is an uncommon lesion in the bones of craniofacial complex. Only 18 cases of Osteoma of the condyle have been reported in the literature to our knowledge. The causes of these lesions are unknown, although Trauma, infection and developmental abnormalities have been suggested as contributing factors. In this paper, we are presenting a case of 60 years old male diagnosed as Osteoma of condyle, which was causing difficulty in mastication. Clinical and radiographical examination were suggestive of Osteoma. The tumor was removed surgically and patient was regularly followed up.

Key Words: Osteoma, Benign Tumor, Condyle, Excision.

INTRODUCTION

An Osteoma is a benign osteogenic tumor, histologically characterized by compact or cancellous bone proliferation. Three varieties reported in the literature are; (1) compact bone osteoma, (2) Cancellous bone osteoma and (3) a combination of both. According to anatomical location, Osteomas of the jaws may arise as polypoidal or sessiloid mass arising from periosteum called periosteal Osteoma.^{1,2,3,14} They may be located in the medullary bone (endosteum) called central Osteoma.²

The pathogenesis of Osteoma is not completely known but they are mostly referred to as developmental anomalies, true neoplasms or reactive lesions triggered by trauma, muscle traction or infection. There is a question as to whether osteomas represent true neoplasms or represent the end stage of an injury or inflammatory process. They may also represent hamartomatous process such as fibrous dysplasia.^{1,3,9,10,11,14,15} Osteoma is usually a slow growing, asymptomatic solitary lesion, which mainly affects young adults. The cause is

obscure but it may arise from cartilage or embryonal periosteum.^{6,15}

In Cranifacial Complex, Osteoma occurs most frequently in paranasal sinuses.^{4,6,7} Other locations include external auditory cannal, orbit, temporal bone and pterygoid process. It is rare entity in jaws when the maxillary sinuses are excluded and mandible is more often affected than the maxilla. Within the mandible, susceptible site is posterior body followed by condyle, angle, ascending ramus, coronoid process, anterior body and sigmoid notch in descending frequency.¹⁰

There is no predilection of age or gender.^{1,5,6,7,9,10,11} It may develop from 4.8 month to 60 years.² Generally it is asymptomatic, but may be associated with asymmetry or interfere with oral function and produce malocclusion.^{1,7,9,11,13} This case reports an Osteoma involving the right condyle causing facial asymmetry in a 60 years old male.

CASE REPORT

A 60 years old male reported to the department of Oral and Maxillofacial Surgery, AFID, CMH Rawalpindi with the chief complaint of pain on mastication and deviation of lower jaw towards left side for the last 2 years and 5 months. The lesion was painless and asymptomatic in the past but there has been pain associated since 6 months. There was pain and tenderness but no paresthesia or trismus. No abdominal symptoms or any skin lesions were reported by the patient, excluding the Gardener's Syndrome. He had no history of associated facial trauma or infection and his past dental, medical, family and social history were not significant and not contributing to the disease.

¹ Eman Zafar, Resident Oral and Maxillofacial Surgery, AFID, CMH, Rawalpindi Email: emanzafar1989@gmail.com

Cell: 0321-4851430 **For Correspondence:** House-715, Poonch House Complex, Adamjee Road, Saddar, Rawalpindi

² Zainab Akbar, Resident Oral and Maxillofacial Surgery, AFID, CMH, Rawalpindi Email: zainaba0kbar06@gmail.com Cell: 03315753038

³ Kaleem Niazi, Resident Oral and Maxillofacial Surgery, AFID, CMH, Rawalpindi Email: kaleemniaz83@yahoo.com Cell: 03335411599

⁴ Babar Pasha, Assistant Professor, Head of Oral Maxillofacial Surgery, AFID, CMH, Rawalpindi Email: babarpasha@yahoo.com Cell: 03214800245

Received for Publication: August 10, 2016

Revised: August 28, 2016

Accepted: August 30, 2016

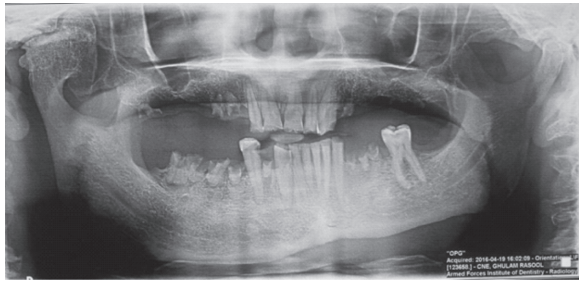


Fig 1: Pre-op OPG of the patient



Fig 2: Per-op picture of the lesion



Fig 3: Post-op OPG of the patient after surgical excision of Right Condylar lesion

On general physical examination, patient was found to be of average height and built, well oriented in time, space and person. The vital signs were within normal limits. On extra – oral examination, there was facial asymmetry, slight deviation of chin towards unaffected side (left). Interincisal mouth opening measuring approximately 40mm was seen. On translator movement, lower jaw deviated towards left. On Palpation, inspeitory findings were confirmed. There was clicking of right TMJ but there were normal TMJ movements bilaterally. There was a bony hard lump on palpation at right side of face. There was presence of deepened antegonial notch on right side. Lymph nodes were not palpable.

On Intra – oral examination, there was midline shift towards left side. Left side crossbite and Right side openbite was observed. Oral mucosa appeared to be normal and there were no other significant findings. Considering the patient's history and clinical examination, provisional diagnosis of Osteoma of condyle was made. Condylar hyperplasia, Hemimandibular Hypertrophy and Fibrous Dysplasia were considered in the differential diagnosis.

Regarding radiographic findings, Orthopantomogram (OPG) revealed presence of well defined radiopacity measuring approximately 3x2 cm in largest dimension in the right temporomandibular (TMJ) joint with loss of Condylar morphology [Fig 1]. The coronal, axial and sagittal sections in CBCT revealed hyperdense bony mass in right condyle. 3D CBCT showed a large hyperdense, well defined bony mass. Condylar morphology was lost. Right coronoid appeared to be shorter.

The clinical and radiographic findings sufficiently supported the clinical diagnosis of benign bony lesion [Fig 1]. The patient was hospitalized for excision of lesion under general anesthesia. After explaining the treatment procedure to the patient, consent was obtained. Nasotracheal intubation was performed without difficulty. The surgical excision of the mass was done through preauricular access. Because of the size of the tumor, it was divided into two parts with rotary instrument and osteotome and then each part was removed separately [Fig 2]. Drain was placed. Recovery was uneventful. Postoperatively, systemic antibiotics and analgesics were given for 7 days. There were no postoperative complications and no signs of facial nerve damage. Patient was placed on regular follow up visits. His mastication and occlusion were improved considerably. Patient was satisfied and recurrence of the disease was not observed for six months [Fig 3]. Histopathology revealed lamellated compact bone enclosing haversian canals, with osteocytes within the lacunae at places while empty lacunae at other places; suggestive of compact Osteoma.

DISCUSSION

Osteoma is a benign osteogenic tumor. Although the exact cause is not yet known, Osteoma is formed when there is uninhabited growth in bone. The possibility of reactive mechanism, triggered by trauma or infection has been suggested.^{1,2,4,5,6,9,10,11,13} Minor trauma may cause subperiosteal edema or bleeding and the muscle traction could locally elevate the periosteum. This can initiate an osteogenic reaction that could be preserved by the continuous muscle traction. Condylar Osteoma are seen to be of two types 5;

- 1 Either proliferation of tissues cause replacement of condyle or

- 2 Appearing as pedunculated mass on Condylar head / neck.

Peripheral Osteoma of jaw bones is not common. Very few cases of Osteoma of TMJ have been reported.^{1,2,4,8,10} Benign tumors of the TMJ tend to occur with less frequency than does malignant disease. They can occur at any age but most frequently is found in individuals older than 40 years.⁵ Osteoma of condyle may cause a slow progressive shift in occlusion with deviation of midline of the chin towards the unaffected side as in our case, resulting in facial asymmetry which may cause interference in function causing cross bites. The Osteoma may be attached to the cortex by a pedicle or along a wide bone. Osteoma typically will manifest as a homogeneous expansion of the mandibular condyle when compared with the contralateral side. Other sites include a paranasal sinuses, orbital walls, temporal bone, pterygoid processes and external ear canal.^{4,5,14}

Multiple Osteomas known as osteomatosis is seen in Gardener's syndrome which is defined as multiple Osteomas of the jaws accompanied by colorectal polyps with high malignant potentials, anomalies involving soft and hard tissues, congenital retinal pigment hypertrophies and multiple impacted or supernumerary teeth, enostoses or epidermoid cysts.^{1,2,3,5,9,10,11,16}

Since osteoma develops before colorectal polyps in Gardener's syndrome, early diagnosis is important for saving patient's life. A review of the literature with respect to peripheral Osteoma of the jaws but excluding cases located in the maxillary sinus and excluding Gardner's syndrome, revealed 69 well documented cases.¹¹ In 1927, Ivy reported the first case of Osteoma involving the Condylar process. Since then only 18 cases of osteoma arising in the condylar process have been reported.¹⁷

In the study by Sayan⁴ of the 35 new cases of peripheral Osteomas,⁸ occurred in the mandible and 5 in maxilla. Most of them appeared as unilateral, pedunculated, mushroom like masses. According to a meta-analysis, 63 cases were reported from 1927-2003, the various sites of the mandible in relation with frequency in the descending manner shows 30.5% lesions in the posterior body of the mandible, 28.5% in the condyle, 14.2% in the angle, 11.1% in the ascending ramus, 7.9% in the coronoid process, 6.3% in the anterior body and 1.5% in the sigmoid notch.¹ There are no reports of Osteomas undergoing malignant transformation. There was only 1 case of recurrence after 9 years of surgical excision, which was reported by Bosshardt et al.¹⁶

Bodener et al¹⁴ reported a case of a teenage girl with a larger peripheral Osteoma of mandible occupying the infratemporal fossa, causing trismus and shift of the

mandible on mouth opening. Its size was 4.0 cm x 2.5 cm x 1.5 cm. M. Fallahi Motlagh et al¹¹ also reported a huge peripheral Osteoma of condyle measuring 6 cm x 5 cm but causing no trismus or paresthesia. Most of the cases reported in the literature were shown to be involved with limited mouth opening as reported by Rajshekar VM et al¹ which is contradictory to our patient.

Kondoh⁸ reported a patient with a Peripheral Osteoma (PO) arising on the medial aspect of the left condyle that causes mandibular deviation to the right just like our patient. Kaplan et al¹⁵ reported 81.3% PO in mandible which was different from reports of Chaurasia and Balan¹³ i.e. 83% and Woldenberg et al i.e. 64%.¹² Radiographic evaluation shows well circumscribed, densely sclerotic radiopacity that are generally found on routine radiographic examination. Osteomas have well defined borders. Osteomas involving the condylar head can be difficult to differentiate from osteochondromas, osteophytes or condylar hyperplasia on a plain radiograph and those involving coronoid may be similar to osteochondromas.

Histologically, an Osteoma is reported as either a normal appearing dense mass of lamellar bone with minimal marrow tissues (compact Osteoma) or trabeculae of mature lamellar bone, with intervening fatty or fibrous marrow (cancellous Osteoma). Treatment of osteoma is surgical excision. Recurrence of the peripheral Osteoma is extremely rare. TMJ lesion should be diagnosed at an early stage for effective management. TMJ tumors, although rare, must be kept in differential diagnosis of TMJ disorders. These tumors in later stages can produce slow progressive shift in midline with deviation of chin towards unaffected side. Useful imaging modalities in diagnosis are plain radiography, CT, MRI and now recently Cone Beam Computed Tomography. Surgical removal of nidus is must to avoid recurrence. Although recurrence is extremely rare, it is recommended to follow up the patient both clinically and radio graphically after surgical excision of tumor and patient should be properly counseled.

REFERENCES

- 1 Rajshekar VM, Basetty NR, Govindaraju R, David MP. "Out of the ordinary": A case report of osteoma of mandibular condyle. *J Indian Acad Oral Med Radiol* 2015; 27: 441-44.
- 2 Johann AC, de Freitas JB, Ferreira de Aguiar MC, de Araujo NS, Mesquita RA. Peripheral osteoma of the mandible: case report and review of the literature. *J Craniomaxillofac Surg*. 2005; 33(4): 276-81.
- 3 Neville BW, Damm DD, Allen CM, Bouquot JE. *Oral and maxillofacial pathology*. 2nd ed. Philadelphia: WB Saunders Co; 2002. p. 566-67.
- 4 Sayan NB, Uçok C, Karasu HA, Günhan O. Peripheral osteoma of the oral and maxillofacial region: a study of 35 new cases. *J Oral Maxillofac Surg*. 2002; 60: 1299-1301.

- 5 Misra N, Srivastava S, Bodade PR, astogi V. Osteoma of temporomandibular joint: a rarity. *BMJ case rep.* 2013 6; 2013. pii: bcr2013200268.
- 6 Regezi JA, Sciubba J.(eds) *Oral Pathology* (ed 2). Philadelphia: PA, Saunders; 1993. 407.
- 7 Sayit AT, Kutlar G, Idilman IS, Gunbey PH, Celik A. Peripheral osteoma of the mandible with radiologic and histopathologic findings. *J Oral Maxillofac Radiol* 2014; 2: 35-37.
- 8 Kondoh, T, Seto, K, Kobayashi, K. Osteoma of the mandibular condyle: Report of a case with a review of the literature. *J Oral Maxillofac Surg.* 1998 Aug; 56(8): 972-79.
- 9 Singhal P, Singhal A, Ram R, Gupta R. Peripheral osteoma in a young patient: A marker for precancerous condition?. *J Indian Soc Pedod Prev Dent* 2012; 30: 74-77.
- 10 Emel Buleut, Aydan Acikgoz, Bora Ozan, and Omer Gunhan. Large Peripheral Osteoma of the Mandibl; A Case Report *Int J Dent.* 2010; 2010: 834761.
- 11 M. Fallahi Motlagh et al. Huge peripheral Osteoma of mandibular condyle: A case report. *J Oral Maxillofac Surg Med Pathol* 2015; 27: 808-11.
- 12 Woldenberg Y. Nash M, Bodner I, Peripheral osteoma of the maxillofacial region. Diagnosis and management: a study of 14 cases. *Med Oral Patol Oral Cir Bucal* 2005; 10: 139-42.
- 13 Chaurasia A. Balan A. peripheral osteomas of jaws — a study of 6 cases. *Kerala Dent J* 2009; 32: 23-26.
- 14 Bodner L, Gatot A, Sion-Vardy N, Fliss DM. Peripheral osteoma of the mandibular ascending ramus. *J Oral Maxillofac Surg.* 1998; 56: 1446-49.
- 15 Kaplan I, Calderon S, Buchner A. Peripheral osteoma of the mandible: a study of 10 new case and analysis of the literature. *J Oral Maxillofac Surg* 1994; 52: 467-70.
- 16 Bosshardt L, Gordon RC, Westerberg M, Morgan A. Recurrent peripheral osteoma of mandible: Report of a case. *J Oral Surg* 1971; 29: 446-50.
- 17 Ivy RH. Benign bony enlargement of the condyloid process of the mandible. *Ann surg.* 1927; 85(1): 27-30.

CONTRIBUTIONS BY AUTHORS

- | | |
|-----------------------|---|
| 1 Eman Zafar: | Conception, design, analysis and interpretation of data |
| 2 Zainab Akbar | Revising the manuscript critically |
| 3 Kaleem Niazi | Final Approval of the version |
| 4 Babar Pasha | Operating Surgeon |