Case report

MANDIBULAR OSTEOMA, ARISING FROM A MENTAL SPINE – A CASE REPORT

Petia Pechalova¹, Tanya Sbirkova¹, Deyan Neychev¹, Elena Poriazova²

1) Department of Oral Surgery, Faculty of Dental Medicine, Medical University, Plovdiv, Bulgaria

2) Department of Pathology, Faculty of Medicine, Medical University, Plovdiv, Bulgaria

SUMMARY:

The osteoma is a benign osteogenic neoplasm. It consists of well-differentiated compact or cancellous bone. The prevalence of osteomas in the normal population is about 4 %. Osteomas may be classified as peripheral, central or extraskeletal. Peripheral osteomas occur not commonly in jawbones. It affects more frequently mandible than maxilla, and the most common sites are the angle and lower border of the body. The aim of this article is to present a rare case of peripheral osteoma, arising from a mental spine. 77 years old woman, was referred in our department with complaints of hard, nonpainful spike under her tongue, which hinder stability of her dentures during the eating and speaking. A traditional radiography was made. A surgical removal of formation was performed. The diagnose was established after the pathohistological examination was made. No complications were noted during the observed 6 months post surgery period.

Keywords: peripheral osteoma, mandible, mental spine

INTRODUCTION:

An osteoma is a benign osteogenic tumour characterised by compact or cancellous bone proliferation and may be divided to peripheral, central and extraskeletal. A peripheral osteoma arises from the periosteum, while a central osteoma originates from the endosteum. The extraskeletal osteoma involves the soft tissue [1, 2]. The osteoma pathogenesis is unclear. Some authors consider it a true neoplasm, while others consider it a hamartoma. [3] The reactional mechanism, trauma or infection are also suggested as possible causes.[4] According to the literature the peripheral osteomas rarely occur in the mandible [5] Multiple osteomas of the jaws are commonly observed in Gardner syndrome. [6] The growth rate of this tumour is generally very slow, but it can become faster if the rate of osteogenesis increases. Osteomas differ from other bony exostoses by their ability to continue their growth during adulthood. [7] Clinically, most of the lesions characterised by a long asymptomatic period until the first symptoms appear. The growth of untreated osteomas can cause deformation of the bone and damage of the adjacent structures. [8]

Review of the English literature demonstrated peripheral osteomas of the jaws in only 69 well-documented cases, according to Soni S et al. [9] The aim of this paper is to present a rare case of peripheral osteoma originating from the genial tubercle (mental spine) of the mandible.

CASE REPORT:

A 77 years old woman, completely edentulous, was referred to the Oral surgery department with complaints of hard, non-painful spike under her tongue, which hinders stability of her dentures during the eating and speaking. The extraoral examination found a lack of any pathologic conditions - without any swelling, symmetrical face and neck with normal skin appearance and nonpalpable regional lymph nodes. The intraoral examination showed a sharp, bony prominence that arised from the genial tubercle of the mandible with longitudinal size around of 3 cm, that was covered by pale, ischemic mucosa (figure 1).

Fig. 1. Preoperative view.

On the radiograph that was provided, a narrow and long bone hypertrophy near to the right mental spine of the lingual surface of the mandible was visible (figure 2).

Fig. 2. Preoperative roentgenography.

Fig. 4. Suturing.

Fig. 5. Histopathologic view.

The treatment that applied includes creation and elevation of the mucoperiosteal flap (figure 3), resection of bony prominence, smoothing the sharp edges of resected bone and closing the surgical wound under local anaesthesia (figure 4). The diagnose was confirmed histopathologically (figure 5). The surgical wound healing by primary intention. No complications were noted during the observed 6 months post surgery period.

Fig. 3. Intraoperative view.

DISCUSSION:

The osteoma is a benign neoplasm consisting of well-differentiated compact or cancellous bone that increases in size by continuous osseous growth. According to Soni et al. the prevalence of osteomas in the normal population is about 4 %. [9] Peripheral osteoma occurs most frequently in the frontal, ethmoid, and maxillary sinuses but are not common in jawbones. [10, 11]

A review of the literature revealed that mandible is more commonly affected than the maxilla. [1, 3, 10, 11, 12, 13, 14] In the mandible, the most common affected sites are the angle and lower border of the body. [2, 12] Some authors consider these locations are more susceptible to trauma. [2, 12] Harry E. Richards et al. [13] reported a case of peripheral osteoma of the mandible arising from the genial tubercle area same as the case presented in this paper. According to Jindal G et al. genial tubercles are a group of

four bony extensions that surround the lingual foramen bilaterally on the lingual surface of the mandible, situated midway between the superior and inferior borders of the mandible. [15] They act as the insertion for the geniohyoid muscles. [15]

It is reported that these lesions are more predominant in females by a ratio of 3:1. [10, 11, 12] Some studies, show that osteomas are more frequent in males than in females [5] S. Soni et A. Bhargava [9] reported that there is no predilection for sex.

Osteomas can occur at any age, most commonly in the third and fifth decades of life. [5, 16] According to other studies there is no predilection for age.[3, 9]

According to Sah K et al. the exact aetiology and pathogenesis of peripheral osteoma are unknown. [12] Various hypotheses have been put forward, which include congenital and hereditary disorder, a developmental origin, neoplastic or a reactive mechanism to trauma or infection. [12] Some authors have reported a possible relationship between the muscle traction and predominant localization of peripheral osteomas on the lower border of the mandible. [1]

According to Bulut E et al., peripheral osteoma appears clinically as a unilateral and well-circumscribed round or oval, mushroom-like radiopaque mass ranging from 10-40mm in diameter. [1] which don't correspond to the reported lesion. A careful perusal of the literature would reveal that our case has more clinical and radiological similarities with descriptions of enlarged genial tubercles and less similarities with peripheral osteomas. However, enlarged genial tubercles are usually reported in association with fractures [17,18,19]. According to clinical and radiological examination made in the reported case, we noted no signs for previous trauma in the region of osteoma. Finally, the differential diagnosis between peripheral osteoma arising from genial tubercles of the mandible and enlarged genial tubercles should be made histopathologically like it was made in our case.

Osteomas are usually asymptomatic and can be discovered in routine clinical and radiographic examination unless they enlarge enough to cause swelling, facial asym-

metry and functional impairment. [1,5] The swelling is usually painless.

Imaging of peripheral osteoma can be achieved by traditional radiography (panoramic radiograph) or by CT scan. [1, 2] The CT scan is the best imaging modality for determining the location and real extent of the lesion. [1] On radiological imaging, a peripheral osteoma of the mandible is a classically well-circumscribed, round or oval, mushroom-like radiopaque mass with distinct borders. [1, 14, 20] The lesion may either be sessile and attached to the cortical plates with a broad base or pedunculated with a narrow contact area between it and the compact bone. [1]

Differential diagnosis includes exostoses, osteoblastoma, osteoid osteoma, late-stage central ossifying fibroma or complex odontoma.[1]

Although the treatment of incidentally found asymptomatic osteomas is controversial, most authors agree that surgical intervention is indicated only in symptomatic cases. [8] However, rapidly growing osteomas should also be removed. [8] The surgical approach should be case specific. For the mandible, it is preferable to use intraoral approach when possible, mainly for cosmetic reasons. [2] Recurrences are rare. [12, 14] There are no reports of malignant transformation of peripheral osteoma in the literature. [2, 12]

Patients with peripheral osteoma and supernumerary or impacted teeth should undergo a workup for Gardner's syndrome. [2] Mandibular osteomas may be a genetic marker for the development of colorectal carcinoma.[2] Patient with a diagnosis of mandibular osteoma should be examined to rule out colorectal carcinoma.

CONCLUSION:

Peripheral osteomas of the mandible are well known except these arising from the mental spine. Lesions are usually painless and asymptomatic. When they enlarge enough, they can cause swelling, facial asymmetry and functional problems to the patient. In most cases, the treatment that should be performed is surgical removal of the lesion. Pathohistological affirmation of the diagnose should be done.

REFERENCES:

1. Bulut E, Acikgoz A, Ozan B, Gunhan O. Large peripheral osteoma of the mandible: a case report. *Int J of Dent.* 2010, Article ID 834761, 5 p. [\[CrossRef\]](#)
2. Woldenberg Y, Nash M, Bodner L. Peripheral osteoma of the maxillo-facial region. Diagnosis and management: A study of 14 cases. *Med Oral Pathol Oral Cir Bucal.* 2005 Jul 1;10 Suppl 2:E139-42. [\[PubMed\]](#)
3. Horikawa FK, de Freitas RR, Maciel FA, Concalves AJ. Peripheral osteoma of the maxillofacial region: a study of 10 cases. *Braz J Otorhinolaryngol.* 2012 Oct;78(5):38-43. [\[PubMed\]](#) [\[CrossRef\]](#)
4. Cutilli BJ, Quinn PD. Traumatically induced peripheral osteoma. Report of a case. *Oral Surg Oral Med Oral Pathol.* 1992 Jun;73(6):667-9. [\[PubMed\]](#)
5. Gumusok M, Degerli S, Toprak ME, Seckin A, Kaya E, Senguven B. Peripheral osteoma of the mandible: a case report. *J Istanbul Univ Fac Dent.* 2015; 49(1):47-50. [\[CrossRef\]](#)
6. Mancini JC, Woltmann M, Felix VB, Freitas RR. Peripheral osteoma of the mandibular condyle *Int J Oral Maxillofac Surg.* 2005 Jan;34(1):92-3. [\[PubMed\]](#) [\[CrossRef\]](#)
7. Deliverska E. Peripheral osteoma of mandible- a case report and analysis of literature. *J of IMAB.* 2016 Jul-Sep;22(3):1274-8. [\[CrossRef\]](#)
8. Larrea-Oyarbide N, Valmaseda-Castellon E, Berini-Aytes L, Gay-Escoda C. Osteomas of the craniofacial region. Review of 106 cases. *J Oral Pathol Med.* 2008 Jan;37(1):38-42. [\[PubMed\]](#) [\[CrossRef\]](#)

9. Soni S, Bhargava A. Revisiting peripheral osteoma of the mandible with Case series and review of literature. *Indian J Otolaryngol Head Neck Surg.* 2014 Jun;66(2):212-8. [[PubMed](#)] [[CrossRef](#)]
10. Shakya H. Peripheral osteoma of the mandible. *J Clin Imaging Sci.* 2011; 1:56. [[PubMed](#)] [[CrossRef](#)]
11. Ertas U, Tozoglu S. Uncommon peripheral osteoma of the mandible: report of two cases. *J of Contemp Dent Pract.* 2003 Aug;4(3):p7.
12. Sah K, Kale A, Seema H, Kotrashetti I, Pramod BJ. Peripheral osteoma of the maxilla: A rare case report. *Contemp Clin Dent.* 2011 Jan; 2(1):49-52. [[PubMed](#)] [[CrossRef](#)]
13. Richards HE, Strider JW, Short SG, Theisen FC, Larson WJ. Large peripheral osteoma arising from the genial tubercle area. *Oral Surg Oral Med Oral Pathol.* 1986 Mar;61(3):268-271. [[PubMed](#)]
14. Johann AC, de Freitas JB, de Aguiar MC, de Araujo NS, Mesquita RA. Peripferal osteoma of the mandible: case report and review of the literature. *J of Cranio-Maxillofac Surg.* 2005 Aug;33(4):276-281. [[PubMed](#)] [[CrossRef](#)]
15. Jindal G, Jindal S, Sharma P, Singla A. Rare enlargement of genial tubercles and its management: a case report. *J of Clin and Diagn Res.* 2015 Nov;9(11):ZD23-24. [[PubMed](#)] [[CrossRef](#)]
16. Longo F, Califano L, De Maria G, Ciccarelli R. Solitary osteoma of the mandibular ramus: report of a case. *J Oral Maxillofac Surg.* 2001 Jun; 59(6):698-700. [[PubMed](#)] [[CrossRef](#)]
17. van Leeuwen AC, van der Meij EH, de Visscher JG. Fracture of the genial tubercles of the mandible: case report and review of the literature. *J Oral Maxillofac Surg.* 2014 Oct;72(10):1994.e1-6. [[PubMed](#)] [[CrossRef](#)]
18. Shohat I, Shoshani Y, Taicher S. Fracture of the genial tubercles associated with a mandibular denture: A clinical report. *J Prosthet Dent.* 2003 Mar;89(3):232-3. [[PubMed](#)] [[CrossRef](#)]
19. Gallego L, Junquera L, Villarreal P, de Vicente JC. Spontaneous fracture of the mandibular genial tubercles. A case report. *Med Oral Patol Oral Cir Bucal.* 2007 Dec 1; 12(8):E599-601. [[PubMed](#)]
20. Ogbureke KU, Nashed MN, Ayoub AF. Huge peripheral osteoma of the mandible: a case report and review of the literature. *Pathol res and Pract.* 2007; 203(3):185-8. [[PubMed](#)] [[CrossRef](#)]

Please cite this article as: Pechalova P, Sbirkova T, Neychev D, Poriazova E. Mandibular osteoma, arising from a mental spine – a case report. *J of IMAB.* 2017 Jul-Sep;23(3):1684-1687. DOI: <https://doi.org/10.5272/jimab.2017233.1684>

Received: 14/05/2017; Published online: 25/09/2017

Address for correspondence:

Tanya Sbirkova,
Department of Oral Surgery, Faculty of Dental Medicine, Medical University - Plovdiv
3, Hristo Botev Boul., Plovdiv, Bulgaria
Mobile: +359888 493 145
e-mail: tanya_sbirkova@abv.bg