International Journal of Chemical and Biochemical Sciences
(ISSN 2226-9614)

Journal Home page: www.iscientific.org/Journal.html

Acanthomatous Type of Ameloblastoma – A Case Report

Devi. S [1], Kavitha. M [2], Sarumathi. T [3], Niveditha. B [4]

[1]*Postgraduate student, Department of Oral Medicine and Radiology, Madha Dental College and Hospital, Kundrathur, Chennai, Tamil Nadu, India*

[2]*Professor, Department of Oral Medicine and Radiology, Madha Dental College and Hospital, Kundrathur, Chennai, Tamil Nadu, India*

[3]*Professor and Head, Department of Oral Medicine and Radiology, Madha Dental College and Hospital, Kundrathur, Chennai, Tamil Nadu, India*

[4]*Reader, Department of Oral Medicine and Radiology, Madha Dental College and Hospital, Kundrathur, Chennai, Tamil Nadu, India*

Abstract

Ameloblastoma is a benign odontogenic tumor, representing about 1% of all jaw tumors, more common in the posterior mandibular region. Since the evolution of ameloblastoma is very slow, it is locally aggressive and has a high potential for malignant transformation as well as metastasis. The term acanthomatous refers to spikes or thorns characterized by irregular verrucous masses. This is a case report of an acanthomatous ameloblastoma in a left mandibular body region in a 55-year-old male patient reported to our department.

Keywords: adamantinoma, odontogenic tumour, benign, slow growing and acanthomatous.

Case study

**Corresponding Author*, e-mail: devisrinivasan095@gmail.com

1. Introduction

Ameloblastoma is an aggressive odontogenic tumour that forms from odontogenic epithelium within a mature fibrous stroma devoid of odontogenic ectomesenchyme [1]. The incidence of acanthomatous ameloblastoma is 0.6 cases per million persons per year in India and it is a highly encountered odontogenic tumour in Africa and China. In the Western Hemisphere, ameloblastoma is second to odontoma as the most common odontogenic tumor, with ameloblastoma between ages 30 and 60 years [2]. Only 10–15% of ameloblastoma cases occur in the paediatric population. Histologically resembles the enamel organ of a developing tooth that does not intend to form dental hard tissues because the stroma lacks the properties of dental mesenchyme [3]. Despite the similarities, it displays a distinctive clinically invasive and aggressive growth pattern. Due to naivety and limited healthcare facilities, ameloblastoma patients in developing countries often present with massively grown lesions before seeking care [4].

2. Case presentation

A 55-year -old male patient reported with chief complaint of loosening of tooth in lower left back teeth region for the past 2 months associated with swelling in the left side jaw. The swelling gradually increased in size and progressed to attain the present state [5]. Patient's personal history and medical history was non-contributory. On intraoral soft tissue examination, inspection revealed presence of diffuse, ill-defined swelling in the left body of the mandible in relation to 34,35,36,37, which measured approximately 3×4 cm in diameter. Which extended superio-inferiorly from free marginal gingiva to buccal vestibule obliterating it and antero-posteriorly from mesial surface of 34 until the distal surface of 37 in buccal aspect [6]. The swelling extended superio-inferiorly from free marginal gingiva until lingual sulcus and antero-posteriorly from mesial surface of 34 until the distal surface of 37. The color of mucosa over swelling appeared ulcerated, erythrmatous with no secondary changes [7].

On palpation, the swelling was soft in consistency, tender, fluctuant, non- compressible, non- reducible with eggshell crackling and associated with grade III mobility of teeth in relation to 34, 35, 36 and 37 (Figure 1). The patient subjected to chair side investigation, fine needle aspiration cytology from both buccal and lingual cortical plates, straw-coloured fluid was extracted. Therefore, correlating the history and clinical examination, it provisionally diagnosed as radicular cyst.Differential diagnosis of dentigerous cyst, OKC, ameloblastoma given. Then the patient subjected to radiographic and histopathological investigation. OPG revealed a large multilocular radiolucency extended from mesial surface of 34 till the distal surface of 37 with well-defined cortical border measured approximately 3×4 cm in diameter with soap bubble appearance. The internal structure showed presence of multiple intersecting bony septa (Figure 2). Radiographic differential diagnosis of ameloblastoma, central giant cell granuloma and odontogenic myxoma given. Incisional biopsy done [8]. Microscopically, haematoxylin and eosin-stained sections showed presence of epithelial lining which appeared like ameloblast. In the underlying connective tissue follicle of epithelial islands with central squamous cell differentiation, keratin formation and features of squamous metaplasia seen suggestive of acanthomatous type of ameloblastoma. Surgical resection with hemi mandibulectomy was performed (Figure 3). Patient reviewed regularly.

3. Discussion

Ameloblastoma first described by Cusak in 1827 and later reported by Broca in 1866 and Falksson in 1879 and Robinson in 1977. The term ameloblastoma later suggested by Ivy and Churchill in 1960 based on the analysis and the involvement of odontogenic epithelium in tumor origin. Mostly it occurs in 4^{th}-5^{th} decades of life, common in both genders. A typical ameloblastoma presents as a painless slowly growing bony hard swelling more common in the posterior mandible. Ameloblastoma divided into three clinical types: unicystic, multicystic and peripheral. The most common radiographic findings are unilocular and multilocular radiolucency with intersecting bony septa, loss of lamina dura and root resorption, Soap bubble appearance in large lesions /Honey-comb pattern in small lesions with undefined border is the most common characteristic feature [9]. The histopathology of ameloblastoma consists of proliferation of epithelial cells arranged in variable patterns, such as follicular, desmoplastic, granular cell, basal cell, acanthomatous and plexiform types. Follicular and plexiform types are more frequent. Acanthomatous is the rarest type that shows central squamous cell differentiation with keratin formation similar to our case. Conservative management of ameloblastoma includes curettage with cryotherapy. Peripheral ostectomy done for correcting osseous irregularities. In our case, hemi mandibulectomy done after obtaining patient consent and planned for prosthetic rehabilitation, the patient is under regular follow-up with no recurrence [10].

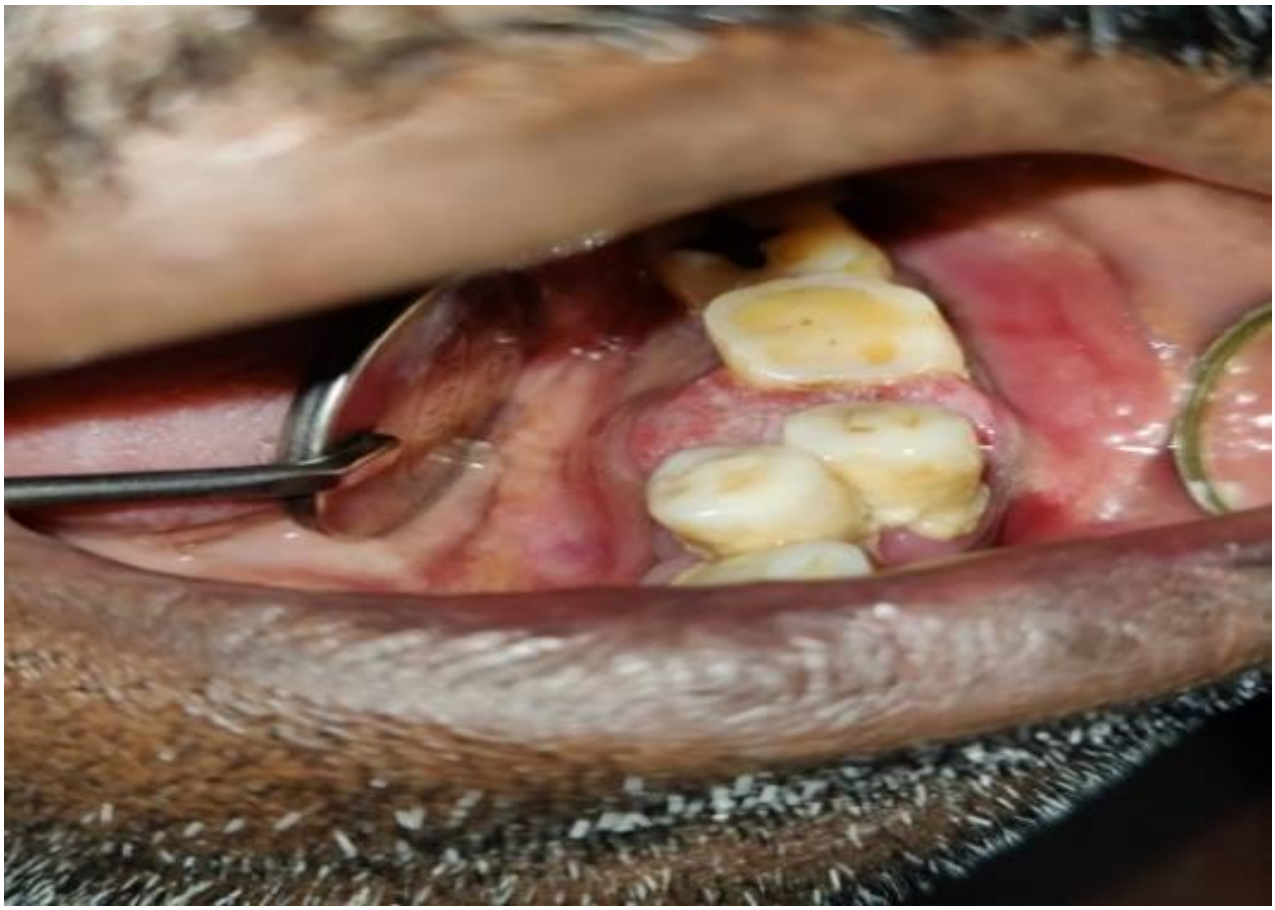

Figure 1. Swelling involving buccal and lingual cortical plate involving 34, 35 and 36 extending up to buccal vestibule.

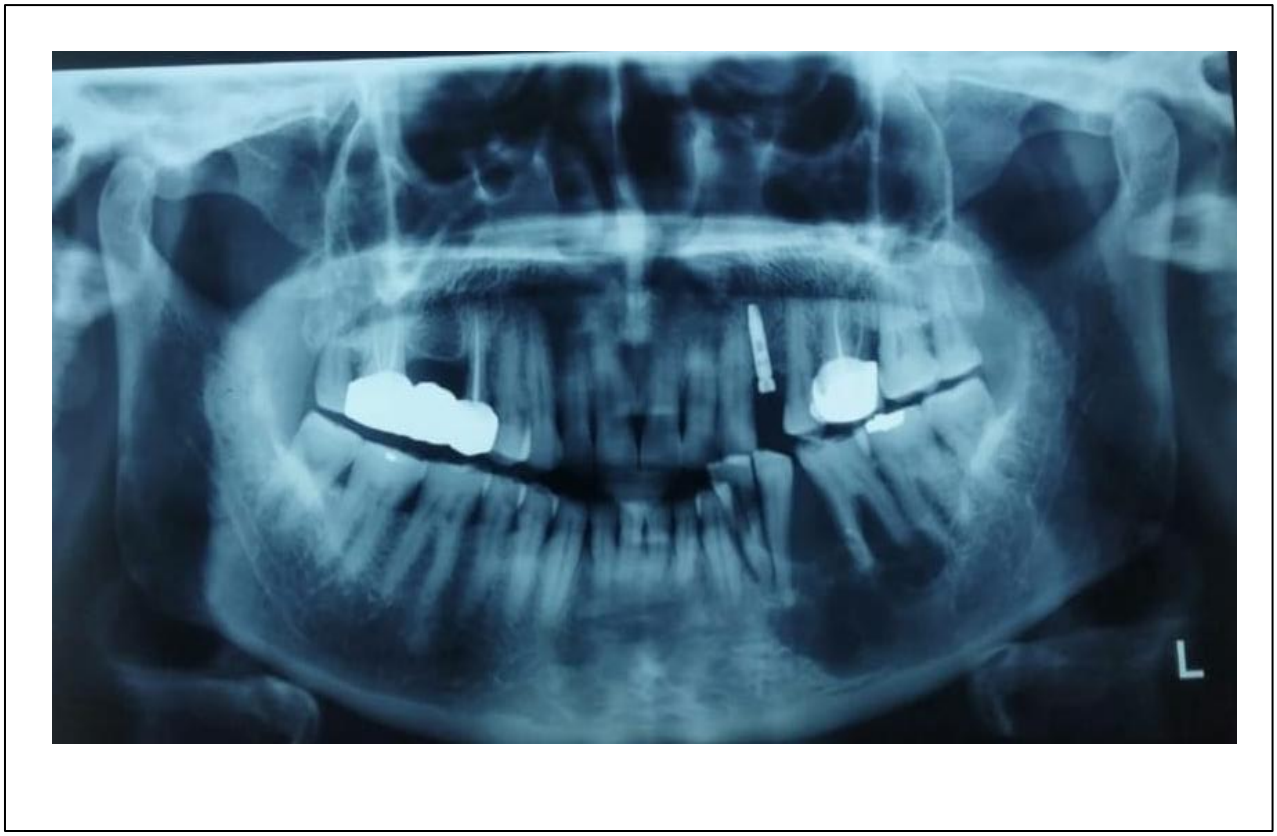

Figure 1. Radiographic mage shows multilocular radiolucency extending from mesial surface of 34 till distal surface of 37 giving a soap bubble appearance.

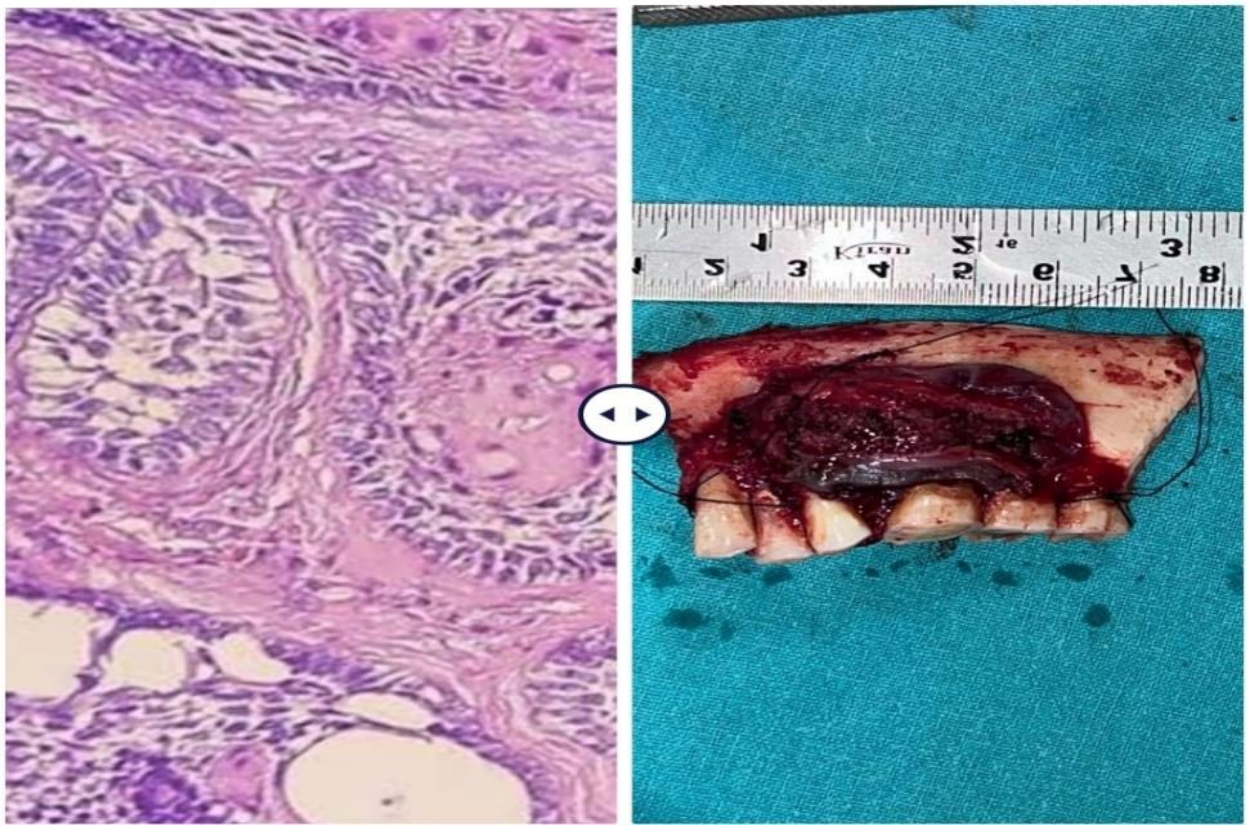

Figure 3. Histopathological image of acanthomatous type and image showing surgical resection of hemi mandibulectomy.

4. Conclusion

Although acanthomatous ameloblastoma is a rare variant, careful clinical examination combined with imaging modalities are essential for proper evaluation and its relationship to the adjacent anatomical structures for accurate therapeutic approach. The present case report highlights the importance of clinic pathological correlation in the diagnosis. Hence, documentation and research of such cases is helpful to analyses the prognosis of the lesions.

References

[1] M. Shear, P.M. Speight. (2008). Cysts of the oral and maxillofacial regions. John Wiley & Sons: pp.

[2] A.K. El-Naggar, J.K. Chan, J. Rubin Grandis, P.J. Slootweg. (2017). WHO classification of head and neck tumours. (No Title).

[3] K. Bonanthaya, E. Panneerselvam, S. Manuel, V.V. Kumar, A. Rai. (2021). Oral and maxillofacial surgery for the clinician. Springer: pp.

[4] A. Kahairi, R. Ahmad, L. Wan Islah, H. Norra. (2008). Management of large mandibular ameloblastoma–a case report and literature reviews. Archives of Orofacial Sciences. 3(2): 52-55.

[5] G. Giraddi, S.C. Bimleshwar, C. Singh, V. Garg, J. Anusha. (2011). Ameloblastoma—series of 7 treated cases—and review of literature. Arch Oral Sci Res. 1: 152-5.

[6] F. Vohra, M. Hussain, M. Mudassir. (2009). Ameloblastomas and their management: A review. J Surg Pak (Int). 14(3): 136-142.

[7] A. Varkhede, J. Tupkari, M. Mandale, M. Sardar. (2010). Plexiform ameloblastoma of mandible—case report. J Clin Exp Dent. 2(3): e146-8.

[8] M.E. Pizer, D.G. Page, J.A. Svirsky. (2002). Thirteen-year follow-up of large recurrent unicystic ameloblastoma of the mandible in a 15-year-old boy. Journal of oral and maxillofacial surgery. 60(2): 211-215.

[9] N.K. Wood, P.W. Goaz. (1997). Differential diagnosis of oral and maxillofacial lesions. (No Title).

[10] D. Hertog, I. van der Waal. (2010). Ameloblastoma of the jaws: a critical reappraisal based on a 40-years single institution experience. Oral oncology. 46(1): 61-64.