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Original Article

Clinical and Histopathological Spectrum of Ameloblastoma

Uzma Bukhari*, Durr-e-Sameen Kamran* and Hira Salam**
*Department of Histopathology,
**Department of Oral Pathology
Dow University of Health Sciences, OJHA campus, Karachi

Abstract

Introduction: Ameloblastoma is a rare neoplasm of odontogenic origin with estimated global incidence at 0.5 per million-person years. Tumor, although benign has the tendency to invade adjacent tissues. Regional variations in occurrence of various odontogenic tumors have been reported. With this experiential data, we aimed to identify the prevalent pattern for presentation of ameloblastoma in our population over 6 years of study period.

Patients and Methods: All biopsy specimens diagnosed as ameloblastoma at histopathology section of Dow Diagnostic Research and Reference Lab (DDRL), Dow University of Health Sciences (DUHS),during the study period (January 2010 – December 2015) were included in the study. The slides were reviewed along with the clinical information was recorded on specifically designed proforma.

Results: 42 cases of ameloblastoma diagnosed by histopathology department at DDRL (DUHS) during the entire study period. A wide age range (3 years to 80 years) was observed with mean age 32 years at presentation. Highest incidence was recorded in 20-40 years age group. A slight male preponderance was noted (57%). Majority of the cases were intraosseous (76%) amongst which mandible (87.5%) was the most frequent site.

Conclusion: Ameloblastoma is a rare neoplasm, a fact highlighted by our recording only 42 biopsied cases over a span of 6 years. Even though the tumor has a predilection for higher age group and males, we recorded cases in both extremes of age. Therefore, ameloblastoma should be considered in differential diagnosis of odontogenic tumors at both extremes of age.

Keywords: Ameloblastoma, Mandible Tumors, Dental Tumors, Oral Pathology

Introduction

Ameloblastoma is a rare neoplasm of odontogenic origin with estimated global incidence at 0.5 per million person years.[1] Tumor grows gradually, following a benign course but has the tendency to invade adjacent tissues, particularly jaw bones. Despite low metastatic potential, recurrence rates are high, particularly for multicystic variant, necessitating radical surgical management.[2] Regional variations in occurrence of various odontogenic tumors have been reported.[3] With this retrospective study, we have aimed to identify the prevalent pattern for presentation of ameloblastoma in our population using 6 years of archival data.

AUTHOR'S CORRESPONDENCE:
Dr. Hira Salam
Department of Oral Pathology
Dr. Ishrat-ul-Ibad Khan Institute of Oral Health Sciences,
Dow University of Health Sciences, Karachi
Email: hirasalam@gmail.com
Cell: +923411274555

Patients and Methods

All surgical pathology specimens diagnosed as ameloblastoma at histopathology section of Dow Diagnostic Research and Reference Lab (DDRL), Dow University of Health Sciences (DUHS), during the study period (January 2010 – December 2015) were included in the study. The paraffin embedded tissue blocks were retrieved from archives and fresh hematoxylin and eosin (H&E) stained slides were prepared. The slides were reviewed along with all the clinical information pertaining to patient demographics, clinical presentation and tumor site.
Data was entered in SPSS version 21.0 to tabulate descriptive statistics.

Results

42 cases of ameloblastoma were diagnosed by histopathology department at DDRL (DUHS)

during the entire study period. A wide age range (3 years to 80 years) was observed with mean age 32 years at presentation. Highest incidence was recorded in 20-40 years age group. A slight male preponderance was noted (57%). Majority of the cases were intraosseous (76%) amongst which mandible (87.5%) was the most frequent site. An attempt was made to categorize all 42 cases according to 2005 WHO classification, but due to fragmented biopsies, inadequate clinical and radiological correlation, a large percentage (40.5%) of cases were characterized as "uncategorized". Solid/multicystic variant was predominant
(21.4%). (Table and Figure 1)

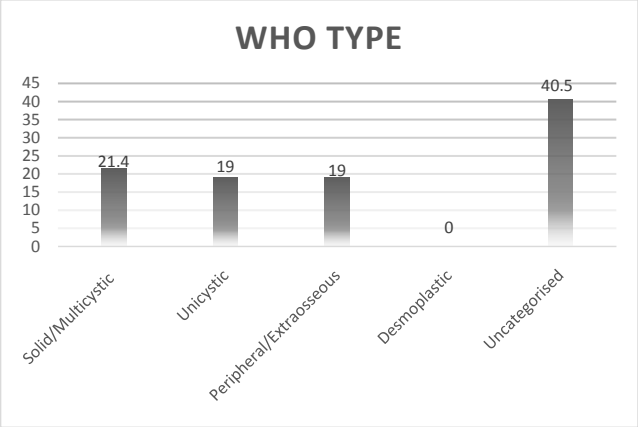

Figure1: Percentage of various WHO subtypes. Solid/Multicystic predominant (21.4%). Majority of the cases could not be categorized (40.5%).

Table 1: Age and gender distribution of ameloblastoma. N= Number of cases.

Age/years	Male /N	Female/N
≤ 20 Years	6	4
21-40 Years	10	10
41-60 Years	6	4
> 60 Years	2	0
	24	**14**

Discussion

Ameloblastoma is a benign tumor of odontogenic origin that represents an estimated one percent of tumors encountered in the oral cavity and 9 to 11 percent of odontogenic tumors.[4] According to World Health Organization (WHO) and International Agency for Research on Cancer classification of head and neck tumors, 2017 (4th edition), ameloblastoma is classified as benign epithelial odontogenic tumor with following subtypes:

- Ameloblastoma, unicystic type
- Ameloblastoma, extraosseous/peripheral type
- Metastasizing ameloblastoma.[5] In present study, ameloblastoma was noted to occur over a wide age range with peak incidence between 2nd and 4th decade of life, this is in accordance with previous reports in literature.[1,6,7]Dhanuthai et. al., noted a slightly higher mean age of presentation in North America in comparison with Asia (48.5 years versus 35.7 years) explanation for observed trend is still debated but poor nutrition and standards of healthcare have been proposed.[8] We also noted slightly greater prevalence in males (57% of total cases), which is in contradiction with results of a study in East Indonesia that reported greater incidence in females (62.5% of total cases) but in concordance with other studies that have also reported slightly greater prevalence in males[7].

No significant difference was noted in predominant site (Mandible) or WHO type (Solid/Multicystic) when compared with published literature.[7,8]

An important criterion for WHO classification is to correlate clinical and radiographic findings with histopathological picture to establish correct subtype. In present study, we noted that an alarmingly large percentage (40.5%) of biopsies were received with missing pertinent clinical and radiological information to correctly categorize the subtype.

CONCLUSION:

Ameloblastoma is a rare neoplasm, a fact highlighted by our recording only 42 biopsied cases over a span of 6 years. Even though the tumor has a predilection for higher age group and males, we recorded cases in both extremes of age. Therefore, ameloblastoma should be considered in differential diagnosis of odontogenic tumors at both extremes of age. Ameloblatomas have a high tendency for recurrence and recurrence rates vary for different variants. We emphasis the importance of adequate and accurate clinical information and radiographic correlation for proper categorization of this tumor.

REFERENCES

1. McClary AC, West RB, McClary AC, Pollack JR, Fischbein NJ, Holsinger CF, et al. Ameloblastoma: a clinical review and trends in management. European Archives of Oto-Rhino-Laryngology. 2016;273(7):1649-61.

2. de AC Almeida R, Andrade EdS, Barbalho J, Vajgel A, Vasconcelos BdE. Recurrence rate following treatment for primary multicystic ameloblastoma: systematic review and meta-analysis. International journal of oral and maxillofacial surgery. 2016;45(3):359-67.
3. Akram S, Naghma N, Ali MA, Shakir MM. Prevalence of Odontogenic Cysts and Tumors in Karachi, Pakistan. Journal of Dow University of Health Sciences. 2013;7(1).
4. Masthan K, Anitha N, Krupaa J, Manikkam S. Ameloblastoma. Journal of pharmacy & bioallied sciences. 2015;7(Suppl 1):S167.
5. Wright JM, Vered M. Update from the 4th edition of the World Health Organization classification of head and neck tumours: odontogenic and maxillofacial bone tumors. Head and neck pathology. 2017;11(1):68-77.
6. Hertog D, van der Waal I. Ameloblastoma of the jaws: A critical reappraisal based on a 40-years single institution experience. Oral Oncology. 2010;46(1):61-4.
7. Siar CH, Lau SH, Ng KH. Ameloblastoma of the Jaws: A Retrospective Analysis of 340 Cases in a Malaysian Population. Journal of Oral and Maxillofacial Surgery. 2012;70(3):608-15.
8. Dhanuthai K, Chantarangsu S, Rojanawatsirivej S, Phattarataratip E, Darling M, Jackson-Boeters L, et al. Ameloblastoma: a multicentric study. Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology. 2012;113(6):782-8.

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CONTRIBUTION OF AUTHORS	
Author	**CONTRIBUTION**
Uzma Bukhari	A, B, D
Durr-e-Sameen Kamran	A, C, E
Hira Salam	A, B, C, E

KEY FOR CONTRIBUTION OF AUTHORS:

A. Conception/Study Designing/Planning
B. Experimentation/Study Conduction
C. Analysis/Interpretation/Discussion
D. Manuscript Writing
E. Critical Review
F. Facilitated for Reagents/Material/Analysis