



ISSN (E): 2277- 7695

ISSN (P): 2349-8242

NAAS Rating: 5.03

TPI 2019; 8(1): 499-501

© 2019 TPI

www.thepharmajournal.com

Received: 07-11-2018

Accepted: 09-12-2018

Dr. Saurabh Shekhar

MDS, Oral Pathology and Microbiology, Senior Resident, Department of Dentistry, Anugrah Narayan Magadh Medical College, Gaya, Bihar, India

Dr. Pallavi Priya

MDS, Oral Pathology and Microbiology, Dental officer, ECHS Danapur, Bihar, India

Dr. Samir Jain

MDS, Orthodontics, Professor, Department of Dentistry, Anugrah Narayan Magadh Medical College, Gaya, Bihar, India

Dr. Shailesh Kumar Verma

Head, Department of Dentistry, Anugrah Narayan Magadh Medical College, Gaya, Bihar, India

Correspondence

Dr. Samir Jain

MDS, Orthodontics, Professor, Department of Dentistry, Anugrah Narayan Magadh Medical College, Gaya, Bihar, India

Histopathological analysis of types of Ameloblastoma: A retrospective study

Dr. Saurabh Shekhar, Dr. Pallavi Priya, Dr. Samir Jain and Dr. Shailesh Kumar Verma

Abstract

Background: Ameloblastoma a locally invasive odontogenic tumour arising from the remnants of the dental lamina. The present study was conducted to determine different histopathological variants of ameloblastomas recorded in study group.

Materials & Methods: The present study was conducted on 50 cases of ameloblastoma of both genders. All participants were informed regarding the study and written consent was obtained. General information such as age, sex, anatomical location etc. was recorded.

Results: Out of 50 cases, 20 were seen in males and 30 in females. Most of the cases were seen in age group 21-30 years followed by 31-40 years and 41-50 years. The most common type of ameloblastoma was plexiform followed by follicular (12) and acanthomatous (10). 16 cases were seen in maxilla and 34 were in mandible.

Conclusion: Most common histopathological variety recorded was plexiform, follicular and acanthomatous. There was male predilection and mandible predominance as compared to maxilla.

Keywords: Acanthomatous, ameloblastoma, histopathological

Introduction

Ameloblastoma a locally invasive odontogenic tumour arising from the remnants of the dental lamina and dental organ or odontogenic epithelium. It is a highly destructive benign tumour of odontogenic origin and represents 9% of all odontogenic epithelium. The etiology is unknown. The incidence of ameloblastomas is estimated at 0.5 per million populations per year. It is a highly destructive benign tumour of odontogenic origin and represents 9% of all odontogenic epithelium^[1].

World Health Organization (WHO) classified ameloblastoma into four types namely: solid/multicystic; unicystic; peripheral; and desmoplastic. Ameloblastoma has a rather contradictory histological and clinical behavior. The histopathological grading of ameloblastoma can be done on the different variants of histological types of ameloblastomas among which the follicular and the plexiform type of ameloblastoma are more common frequently encountered types. Malignant ameloblastomas are extremely rare^[2].

Several causative factors have been proposed, including nonspecific irritating factors such as extraction, caries, trauma, infection, inflammation, or tooth eruption, nutritional deficit disorders and viral pathogenesis. It has been proposed that most ameloblastomas are derived from these epithelial residues. Some investigators believe that a rather high proportion of ameloblastomas arise from the epithelium associated with follicular cysts, which are themselves derived from abnormal proliferations of the odontogenic epithelium. It has been suggested that trauma, infection, or the tissue changes associated with tooth eruption may be involved^[3].

However, these factors are so often present whether or not a tumour develops, the similar tumour arising in the parapatituitary epithelial residues so-called parapatituitary 'adamantinoma', one of the forms of 'craniopharyngioma is not associated with any of these factors. The variables accepted for treatment are age; infiltration potential; affected site; radiographic aspect; and prognosis^[4]. The present study was conducted to determine different histopathological variants of ameloblastomas recorded in study group.

Materials & Methods

The present retrospective study was conducted in the department of Oral pathology and Microbiology. It comprised of 50 cases of ameloblastoma of both genders.

The study protocol was approved from institutional ethical committee. All participants were informed regarding the study and written consent was obtained.

General information such as age, sex, anatomical location etc. was recorded. Results thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

Results

Table 1: Distribution of cases

Total- 50		
Gender	Males	Females
Number	20	30

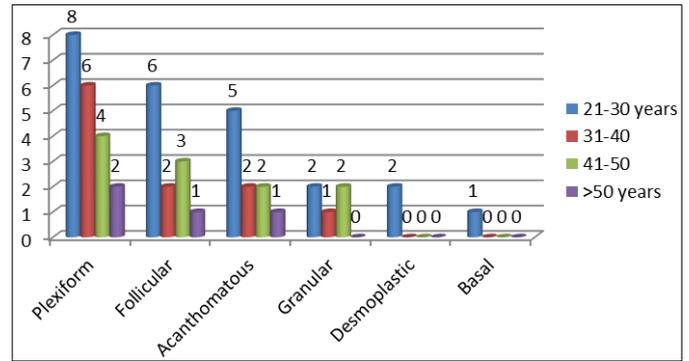
Table 1 shows that out of 50 cases, 20 were seen in males and 30 in females.

Table 2: Age wise distribution of cases

Types	21-3 years	31-40 years	41-50 years	>50 years	Total
Plexiform	8	6	4	2	20
Follicular	6	2	3	1	12
Acanthomatous	5	2	2	1	10
Granular	2	1	2	0	5
Desmoplastic	2	0	0	0	2
Basal	1	0	0	0	1

Table 2, graph I shows that most of the cases were seen in age group 21-30 years followed by 31-40 years and 41-50 years.

The most common type of ameloblastoma was plexiform followed by follicular (12) and acanthomatous (10).

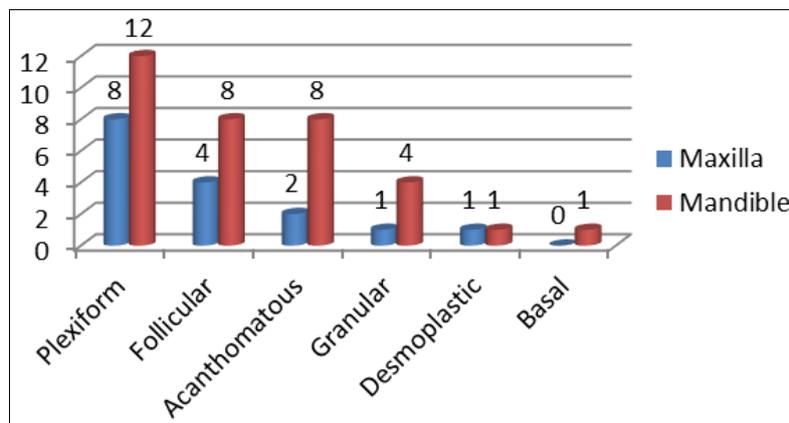


Graph 1: Age wise distribution of cases

Table 3: Anatomical location of cases

Types	Maxilla	Mandible
Plexiform	8	12
Follicular	4	8
Acanthomatous	2	8
Granular	1	4
Desmoplastic	1	1
Basal	0	1
Total	16	34

Table 3, graph 2 shows that 16 cases were seen in maxilla and 34 were in mandible.



Graph 2: Anatomical location of cases

Discussion

Histopathological variants of ameloblastomas are follicular, plexiform, acanthomatous and granular cell types, followed by basal cell ameloblastoma, desmoplastic and clear cell variants, which are the uncommon forms of ameloblastoma according to its histological picture [5].

There is no gender predilection. Multiple presentation is exceedingly rare. On conventional radiographs the ameloblastoma may present as a unilobular or multilobular corticated radiolucency. Bony septae may result in a honeycomb appearance. Resorption of roots may or may not be present. The radiographic differential diagnosis includes a variety of odontogenic cysts and tumours, particularly the keratocystic odontogenic tumour, as well as non-odontogenic cysts and tumours, such as a central giant cell lesion, fibro-osseous lesions and simple bone cyst [6]. The present study was conducted to determine different histopathological variants of ameloblastomas recorded in study group.

We found that out of 50 cases, 20 were seen in males and 30 in females. Most of the cases were seen in age group 21-30 years followed by 31-40 years and 41-50 years. The most common type of ameloblastoma was plexiform followed by follicular (12) and acanthomatous (10).

Shear *et al.* [7] found that the patients' ages at biopsy ranged from 11 to 70 years (mean, 30.4 years). Thirty-nine (54.9%) of the 71 subjects were males, and 32 (45.1%) were females. Sixty-two (87.3%) of the 71 ameloblastomas were located in the mandible. Swelling was the most common symptom and was experienced by 27 (38.0%) patients. Radiographically, 42 (59.2%) of the 71 tumours were unilobular with a well-demarcated border. Of the remaining 29 cases, 14 were multilobular, 2 were of soap bubble shape, and 13 were unknown in appearance. The most common histologic pattern was plexiform, rather than follicular or acanthomatous. Sixteen cases of ameloblastoma had developed in a cyst.

In present study, 16 cases were seen in maxilla and 34 were in

mandible. Butt *et al.* [8] found that of the total 540 odontogenic tumors, 40 patients with ameloblastomas were included with an overall prevalence rate of 7.4%. Males were predominantly affected with male: female ratio of 1.8:1. The age range of ameloblastoma was between 21-60 years but most of the ameloblastomas were seen in age group of 31-40 years, The most common histological variant was follicular ameloblastoma 42.5% followed by acanthomatous type (32.5%). Two of the patients reported with the most aggressive form of ameloblastoma i.e., granular cell type. The predominant anatomical distribution of ameloblastoma was in the mandible (posterior region) (87.5%) while maxilla (posterior region) was affected in 12.5% of the cases.

Hertog *et al.* [9] found no statistically significant differences between the histopathological types of ameloblastomas and the demographical and clinical parameters. Of the 28 patients treated by enucleation, in 17 patients one or more recurrences occurred, with no significant predilection for any histopathological type, including the unicystic type. There were no significant differences in the recurrence rate after enucleation in patients below and above the age of 20 years either. In six out of 17 patients with a recurrence, the recurrent lesion showed a different histopathological subtype than was encountered in the primary.

Conclusion

Most common histopathological variety recorded was plexiform, follicular and acanthomatous. There was male predilection and mandible predominance as compared to maxilla.

References

1. Ghandhi D, Ayoub AF, Anthony M, MacDonald G, Brocklebank LM, Moos KF. Ameloblastoma: a surgeon's dilemma. *J Oral Maxillofac Surg.* 2006; 64(7):1010-14.
2. Barnes L, Eveson JW, Reichart P, Sidransky D. World Health Organization classification of tumors, pathology and genetics. Head and neck tumors. Lyon; IARC Press: 2005.
3. Siar CH, Lau SH, Ng KH. Ameloblastoma of the jaws: A retrospective analysis of 340 cases in a Malaysian population. *J Oral Maxillofac Surg.* 2012; 70:608-15.
4. Jing W, Xuan M, Lin Y *et al.* Odontogenic tumours: A retrospective study of 1642 cases in a Chinese population. *Int J Oral Maxillofac Surg.* 2007; 36:20-25.
5. Tawfik MA, Zyada MM. Odontogenic tumors in Dakahlia, Egypt: analysis of 82 cases. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 2010; 109:67-73.
6. Darshani Gunawardhana KS, Jayasooriya PR, Rambukewela IK, Tilakaratne WM. A clinicopathological comparison between mandibular and maxillary ameloblastomas in Sri Lanka. *J Oral Pathol Med.* 2010; 39:236-41.
7. Shear M, Singh S. Age-standardized incidence rates of ameloblastoma and dentigerous cyst on the Witwatersrand, South Africa. *Community Dent Oral Epidemiol.* 1978; 6:195-9.
8. Butt FM, Guthua SW, Awange DA, Dimba EA, Macigo FG. The pattern and occurrence of ameloblastoma in adolescents treated at a university teaching hospital in Kenya; A 13 year study. *J Craniomaxillofac Surg.* 2012; 40:39-45.
9. Hertog D, Schulten EA, Leemans CR, Winters HA, Van der Waal I. Management of recurrent ameloblastoma of

the jaws- A 40-year single institution experience. *Oral Oncol.* 2011; 47:145-6.