Original Article

Clinical presentation of Ameloblastoma in Children in Dhaka Dental College Hospital, Bangladesh

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Abstract

Background: *Ameloblastoma occurs in all age groups but the peak incidence is in the 3rd and 4th decades. Ameloblastoma in the pediatric age group is considered a rarity and it accounts for approximately 10–15% of all reported cases. The pattern of ameloblastoma in children and young adolescents is characterized by an average age of 13.6 years, predominantly affecting males, with a predilection for the mandible. Radiographically, unilocular radiolucency predominates over multilocular radiolucency. The clinico-radiopathological correlation is suggestive of overlapping features of solid ameloblastoma as unilocular radiolucency and unicystic ameloblastoma as multilocular radiolucency, thereby masking the aggressiveness of the lesion. Solid ameloblastoma as a locally aggressive tumor can lead to a high recurrence rates (75–90%) following conservative treatment. The decision to do initial radical, extensive surgery or conservative treatment in children always poses a dilemma.The current opinion favors radical resection for decreasing recurrence rates. However, in the pediatric group, management of solid ameloblastomas often need more considerations such as the patients age, tumor size, anatomic location, jaw growth and if it is an initial presentation or a recurrence.*

Key wards: *Ameloblastoma, Bangladesh, Children, Clinical features.*

Introduction

Ameloblastoma, a clinically significant neoplasm of odontogenic epithelium is commonly encountered in Bangladesh. The tumor is by far more common in the mandible than in the maxilla and shows predilection for various parts of the mandible in different racial groups.The relative frequency of the mandible to maxilla is reported as varying from 80% -20% to 99%-1%. Prevalence of the lesion is in between the 3rd and the 4th decade of life; Female to male ratio is about 1:1.72.[1]

Ameloblastoma is the most common benign odontogenic tumor accounting for approximately 1% of tumors and cysts of the jaw and 10% of odontogenic tumors. The tumor in young people is considered a rarity and it account for approximately 10–15% of all reported cases of ameloblastoma.[2] The ameloblastoma is the most common of the odontogenic tumor exhibiting minimal inductive changes in connective tissues. It is true neoplasm, generally considered to be a benign with some peculiarities such as persistent local growth and its high loco regional invasion, non-capsulation and rarely metastasis. It is an enigmatic tumor with a strong tendency to recur after treatment.[3]

The recurrence rate may range from 15.9% to 20.6 %. It is known that recurrences can take longer than 20 years to become apparent and, therefore, the eventual recurrence rate may be higher.[4] An ameloblastoma is a locally aggressive benign odontogenic tumor of the jaw. It may originate from the epithelium involved in the formation of teeth: the enamel organ, epithelial cell rests of Malassez, reduced enamel epithelium, and odontogenic cyst lining.[5]

Ameloblastomas, that originate in the mandible, the molar-ramus region is the most common site of occurrence followed by the symphyseal region. Although ameloblastomas are typically asymptomatic, mass effect on surrounding structures may lead to symptoms and signs including pain, malocclusion, root resorption, loose teeth, paresthesia, ulceration, and trismus. Painless, progressive facial swelling or bony expansion of the jaw is the most common presentation. Smaller lesions are often discovered on routine surveillance panoramic radiography.[6]

The treatment of ameloblastoma is controversial and poses special problems in children. Numerous factors must be considered for treatment in this group, such as negative effects on function and potential bone involvement. Overall health, tumor size, location, duration, psychological impact, control of possible recurrence and possibility of periodic follow-up examinations should all be considered when formulating the surgical treatment.[7] Unicystic ameloblastoma is treated conservatively with decompression, enucleation and peripheral

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ostectomy as well as periodic long- term follow up. A more aggressive surgical approach may be considered when the condition recurs more than twice or according to the patient's wishes.[8] Multicystic ameloblastoma requires more radical treatment, such as segmental resection, hemi-sectioning and total sectioning .[9,10]

Materials and Methods

This is an observational study which was conducted in the Department of Oral & Maxillofacial surgery, Dhaka Dental College Hospital. The study was include the child patient age 18 years or younger. Each of the patients was analyzed by their clinical presentation.Finally all the findings were included in data collection sheet which were then be analyzed and result were prepared. This study result was give us detail information about clinical feature of ameloblastoma in children.

After editing and coding, the coded data was directly entered into the computer by using SPSS software release for Windows, version 23.0 (SPSS, Inc. Chicago. III). After analysis of data it was presented in the form of tables and graphs with due interpretation.

Result

The study was conducted in the Department of Oral and Maxillofacial Surgery, Dhaka Dental College and Hospital. The study was intended to observe the clinical features of ameloblastoma in children. A total of forty patients with diagnosed cases of ameloblastoma, age up to 18 years were included for the study on the basis of history, clinical examination. The data was analyzed by using statistical software SPSS version 26. The results were presented in graphs and tables.

Table-1: Distribution of study patients by clinical presentation of ameloblastoma (n=40)

Clinical presentation	Frequency	Percent
Pain	2	5.0
Swelling	34	85.0
Numbness	3	7.5
Tooth mobility	8	20.0
Bone expansion-		
Only Buccally	8	20.0
Only Lingually	00	00.0
Both buccally and lingually	32	80.0

Table 3.4 showes the clinical presentation of ameloblastoma patients. Most common clinical presentation was bone expansion both buccally and lingually 80.0%, buccally 20.0%, lingually 00.0%, swelling 85.0%, tooth mobility 20.0% etc.

Discussion

Ameloblastoma in the paediatric age group is considered a rarity and it accounts for approximately 10–15% of all reported cases. This study assessed the clinical, radiological and histopathological features of 40 cases of ameloblastoma in Bangladeshi children aged less than 18 years in the Department of Oral and Maxillofacial Surgery, Dhaka Dental College, Dhaka.

Li et al. reported painless swelling was the most common symptom (66.7%). Three (10%) patients had tooth mobility in the area of the tumor accompanied by swelling of the mandible and paresthesia of the lower lip, and 7 (23.3%) patients had tooth mobility but no lower lip paresthesia. The majority of our patients shows cortical expansion buccolingually (80.0%),[11] which is about similar to Figueiredo et al (70.0%).[12] Loosening of the involved teeth, and non-eruption of teeth were the most common complaints. There was a marked predilection for the mandible, with the body–ramus–angle region being the most represented site, which is similar to Molla MR et al.(80.0%)[13] and Haider IA et al. (94.28%)[14] and other studies.[15,16]

Conclusion

In conclusion, the pattern of ameloblastoma in children and young adolescents is characterized by an average age of 14. 43 years, predominantly affecting males, with a predilection for the mandible. Painless buccolingual swelling is more common. Numbness is uncommon until infected.

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