



# Epidemiological study of odontogenic tumours: An institutional experience



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## KEYWORDS

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**Summary** Epidemiological studies on odontogenic tumours conducted in different parts of the world emphasised variation in incidence and distributional pattern. Such epidemiological studies are obscured in Southern state of Andhra Pradesh in India. Present study was conducted at an institutional setup in South Indian population to assess the demographic data of odontogenic tumours.

The retrospective study, which included all the odontogenic tumours from the archives of department of oral pathology, Dental teaching and Research Institution in southern part of India. Cases were selected based on the classification of WHO 2005 histopathological typing for odontogenic tumours and the assessment year considered was from 2002 to 2014. Demographic data was analysed for these tumours. Results were analysed using Chi-Square Test.

Incidence of the odontogenic tumours was found to be 2.17%. Peak age incidence was recorded highest in third and fourth decade of life. Males were commonly involved [59%] with the male to female ratio of 1.43:1. Posterior mandible [53.4%] was the chief anatomical location involved with the tumours. Considering the individual lesions, Ameloblastoma [49%] was found to be more frequent, followed by Keratinizing cystic odontogenic tumour [32%], Odontome [6.2%], Adenomatoid odontogenic tumour [5.5%], Odontogenic myxoma [2.4%], Ameloblastic fibroma [0.6%], Calcifying epithelial odontogenic tumour [1.8%] and Squamous odontogenic tumour [1.2%].

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The total frequency of odontogenic tumours was 2.17%. Ameloblastoma and Keratinizing cystic odontogenic tumours were the predominant tumours, demonstrating significant regional and geographic variation.

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## Introduction

Odontogenic tumours (OT) are relatively rare and destructive lesions of the jaw bones. These Odontogenic lesions originate from the remnants of tooth forming apparatus. The biological behaviour of these lesions vary from hamartomatous/non-neoplastic tissue proliferation to malignancies with metastasizing abilities which mandates the accurate clinicopathological diagnosis [1,2]. Earlier, numerous classification systems were proposed which included several flaws related to the terminology and diagnosis. To overcome these errors, the third edition of WHO histological typing was published in the year 2005. The relative incidence of odontogenic tumours diverge in different countries [3,4]. This discrepancy in incidence is because of geographic and ethnical diversity. In India, population is ethnically diverse which is divided based on cast and language which require more epidemiological studies to be conducted [5].

Most of the epidemiological studies relating to OT are conducted in other countries and relative frequencies of such studies in Southern state of Andhra Pradesh in India are obscured. Despite large number of studies on Odontogenic cysts, studies on OT are relatively rare [1]. Hence, aim of the present study is to assess the epidemiological features of OT. Also efforts are made to correlate the observations of present study with the previous published records.

## Material and methods

Retrospective study was conducted in the department of oral pathology and microbiology. Lesions were considered from the year 2002–2014. All OT were classified based on 2005 WHO typing [4]. These OT were assessed for age, gender, site, distribution and the tumour association with impacted/unerupted tooth.

The study data was collected by a single observer. The inclusion criterion was good clinical data and histopathological confirmation of the odontogenic lesion. Based on the clinical

and radiographic findings, site was divided into segments. Anterior segment extends from distal aspect of right canine to distal aspect of left canine. Posterior segment included mesial aspect of first premolar to ramus/maxillary tuberosity area. Imaging procedure chiefly included was OPG, IOPA, and occlusal radiograph. Histopathological assessment of all the cases were performed by two separate oral pathologists and final diagnosis was achieved after the consensus. Those cases which were diagnosed before 2005, showing flaws in the histopathological diagnosis were reevaluated by the two pathologists and the final diagnosis were modified according to WHO 2005 typing.

## Statistical analysis

Chi-square test was used to find the association between gender, age and location with different types of OT.

## Results

In the present study, 161 cases of OT were considered from the archives of the department of Oral Pathology and Microbiology, Dental teaching and Research Institution situated in West-Godavari District of Andhra Pradesh in southern part of India. Assessment was considered from the year 2002–2014. The prevalence of various OT were summarised in Table 1. Males were commonly involved (59%) than females (41%), however no significant association was achieved with different types of OT ( $P < 0.095$ ). The peak age incidences of these lesions were observed in third and fourth decade of life (Table 2) with statistical significant association was found between age group and types of OT ( $P < 0.000$ ). Observation of the present study showed, mandible was the predominant site of involvement ( $P < 0.012$ ). In mandible, posterior region was involved more frequently than the anterior region with ratio of 2.8:1. In maxilla, anterior region showed more incidence than the posterior region [1.3:1] (Table 3).

Ameloblastoma was assessed as the most frequent OT with 79 cases [49%] (Table 1). These

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