

**ORIGINAL RESEARCH**

# Clinicopathologic analysis of odontogenic cysts- A retrospective study

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**ABSTRACT**

**Background:** Depending on where the cyst's epithelial lining originated, cysts that occur in the oral and maxillofacial region can be categorized as either nonodontogenic or odontogenic. The present study was clinicopathological analysis of odontogenic cysts. **Materials & Methods:** 80 cases of odontogenic cysts of both genders were selected. Radiographs were analyzed for the location, peripheral shape, and pathologies associated with cystic lesions; the maxilla and mandible were divided into anterior and posterior anatomic regions; hematoxylin/eosin-stained slides of odontogenic cysts or nonspecific cysts were examined; the type and number of cysts, as well as lesion location, were noted. **Results:** Out of 65 patients, males were 33 and females were 32. The common cyst was dentigerous cyst in 10 cases. OKC in 12, gingival cyst in 7, Botryoidodontogenic cyst in 3, radicular cyst in 24, residual cyst in 7 and lateral periodontal cyst in 2 cases. Maxillary anterior region was involved in 28 cases, posterior region in 12, mandibular anterior region in 10 and posterior region in 15 cases. Pathologies were root resorption in 7 and displacement of tooth/root in 14 cases. The difference was significant ( $P < 0.05$ ). **Conclusion:** Radicular cyst, residual cyst, dentigerous cysts, OKCs, and gingival cysts were the most prevalent odontogenic cysts. Other cysts identified were lateral periodontal cyst, and botryoidodontogenic cyst. The majority of cases involved the maxillary anterior area.

**Keywords:** odontogenic, cyst, Radicular cyst, residual cyst

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**INTRODUCTION**

Depending on where the cyst's epithelial lining originated, cysts that occur in the oral and maxillofacial region can be categorized as either nonodontogenic or odontogenic.<sup>1</sup> Non-odontogenic cysts originate from the ectoderm involved in the development of facial tissue, whereas odontogenic cysts are generated from the epithelial component of the odontogenic apparatus or its remnants that are lodged in the bone or gingival tissue.<sup>2</sup> The dental lamina (cell rests of Serres), the enamel organ, and the Malassez epithelial rests are oftentimes implicated derivatives for odontogenic cysts.<sup>3</sup>

The classification of odontogenic cysts is based on two factors: their inflammatory or developmental origin. Inflammatory cysts are associated with inflammation, while the etiology of developmental cysts is unknown.<sup>4</sup> Certain odontogenic cysts can exhibit traits of odontogenic tumors in addition to their aggressive activity and tendency to recur.<sup>5</sup> Thus, surgically excised tissue should be carefully

analyzed histopathologically and appropriately classified to ensure the best possible course of treatment. According to a review of the literature, odontogenic cyst incidence in lesions of the oral cavity can range widely, from 0.8% to 45.9%. However, the frequency of odontogenic cysts in North Indian communities has not been well studied.<sup>6</sup> The present study was clinicopathological analysis of odontogenic cysts.

**MATERIALS & METHODS**

The present study consisted of 80 cases of odontogenic cysts of both genders. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Radiographs were analyzed for the location, peripheral shape, and pathologies associated with cystic lesions; the maxilla and mandible were divided into anterior and posterior anatomic regions; hematoxylin/eosin-stained slides of odontogenic cysts or nonspecific cysts were examined; the type and

number of cysts, as well as lesion location, were noted. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

**RESULTS**

**Table I Distribution of patients**

Total- 80		
Gender	Male	Female
Number	45	35

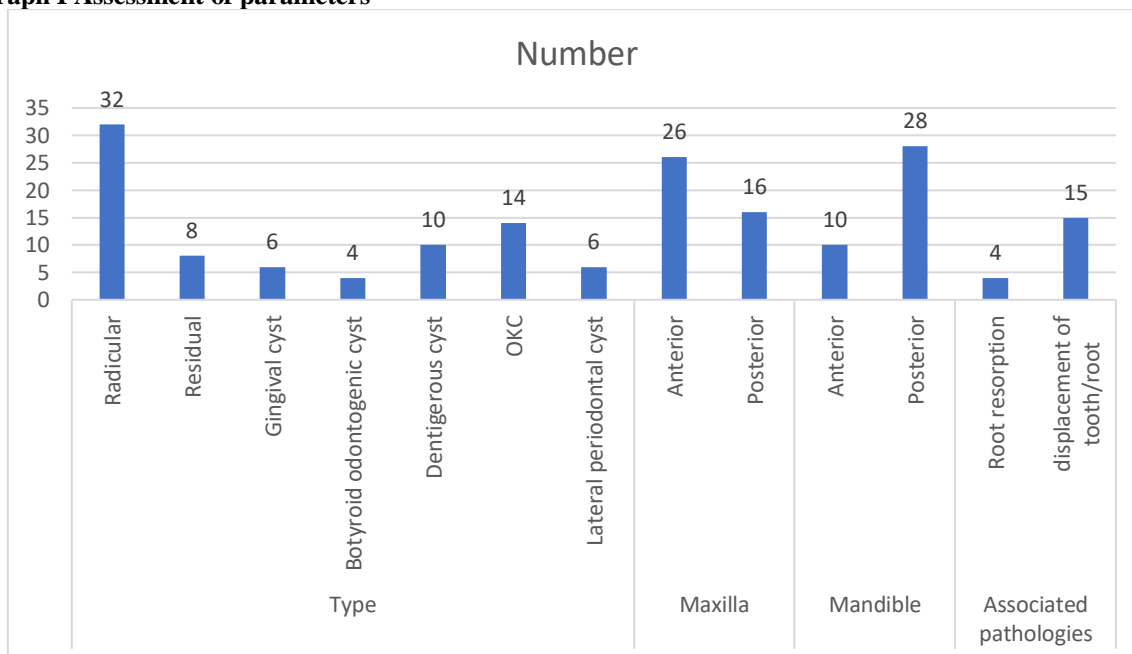
Table I shows that out of 80 patients, males were 45 and females were 35.

**Table II Assessment of parameters**

Parameters	Variables	Number	P value
Type	Radicular	32	0.01
	Residual	8	
	Gingival cyst	6	
	Botyroidodontogenic cyst	4	
	Dentigerous cyst	10	
	OKC	14	
	Lateral periodontal cyst	6	
Maxilla	Anterior	26	0.04
	Posterior	16	
Mandible	Anterior	10	0.05
	Posterior	28	
Associated pathologies	Root resorption	4	0.01
	displacement of tooth/root	15	

Table II, graph I shows that common cyst was radicular cyst in 32, residual cyst in 8, gingival cyst in 6, Botyroidodontogenic cyst in 4, dentigerous cyst in 10, OKC in 14, and lateral periodontal cyst in 6 cases. Maxillary anterior region was involved in 26 cases, and posterior region in 16, mandibular anterior region in 10 and posterior region in 28 cases. Associated pathologies were root resorption in 4 and displacement of tooth/root in 15 cases. The difference was significant (P < 0.05).

**Graph I Assessment of parameters**



**DISCUSSION**

Cysts are a type of pathologic cavity that has a fluid or semisolid substance inside and is encircled by epithelium. The odontogenesis-related epithelial tissues in the jaws give rise to a diverse range of cysts.

Osteodestructive lesions known as odontogenic cysts (OC) typically damage the jaws.<sup>7,8</sup> They arise from the odontogenic apparatus's epithelial components or remnants, which are stuck in the gingival tissue or

within the bone.<sup>9,10</sup>The present study was clinico-pathological analysis of odontogenic cysts.

We found that out of 80 patients, males were 45 and females were 35. Over a 30-year period, Jones et al evaluated the age range, sex distribution, and place of presentation for all odontogenic cysts that were histologically diagnosed. A total of 12.8%, or 7121 specimens, had an odontogenic cyst diagnosis. The most prevalent diagnosis was a radicular cyst (52.3%), which was followed by an odontogenickeratocyst (11.6%) and a dentigerous cyst (18.1). Over a 51-year period in the Brazilian population, Grossman et al<sup>11</sup> examined the demographic characteristics of all histologically identified odontogenic cysts (OC) and nonodontogenic cysts (nOC). 2,905 (15.2%) of the 19,064 oral biopsies had OC and nOC criteria. Of these, 93 (0.5%) represented nOC, while 2,812 (14.7%) were diagnosed as OC. Dentigerous cyst (25.3%), odontogenickeratocyst (7.2%), and radicular cyst (61.0%) were the three most common OC diagnoses. The most frequent nOC was the nasopalatine duct cyst (2.2%).

We observed that common cyst was radicular cyst in 32, residual cyst in 8, gingival cyst in 6, Botryoidodontogenic cyst in 4, dentigerous cyst in 10, OKC in 14, and lateral periodontal cyst in 6 cases. Maxillary anterior region was involved in 26 cases, and posterior region in 16, mandibular anterior region in 10 and posterior region in 28 cases. Associated pathologies were root resorption in 4 and displacement of tooth/root in 15 cases. The prevalence, frequency, sex distribution, location distribution, and clinicopathological characteristics of odontogenic cysts were examined and reported by Singh HP et al.<sup>12</sup> Odontogenic cysts were diagnosed in 847 cases, making up 10.9% of all lesions that were biopsied over the course of the investigation (7748). The patients' average age was 28.2 years, and they were mostly male (57.3%). Overall, the ratio of men to women was 1.34:1. The most common histological type (54.54%) was radicular cyst, which was followed by gingival, residual, lateral periodontal, odontogenickeratocyst, dentigerous, and botryoid odontogenic cysts.

The limitation of the study is the small sample size.

## CONCLUSION

Authors found that radicular cyst, residual cyst, dentigerous cysts, OKCs, and gingival cysts were the most prevalent odontogenic cysts. Other cysts identified were lateral periodontal cyst, and botryoidodontogenic cyst. The majority of cases involved the maxillary anterior area.

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