International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 06 June 2022
DOI: 10.47191/ijcsrr/V5-i6-04, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

Odontogenic Kerato Cysts: Clinical and Radiographic Presentations

Tauqeer Hussain[1], Farwa Sikanadar[2], Hamna Akhtar[3]
[1]THQ Hasil Pur Districts Bahawalpur
[2]Akhtar Saeed Trust hospital Lahore
[3]Incharge medical officer at Basic Health Unit Shikar Pur, District Rajan pur.

ABSTRACT
Introduction: Odontogenic keratocysts (OKCs) are developmental odontogenic cysts of epithelial origin. The initial terminology for an odontogenic keratocyst (OKC) was "primordial cyst," as the origin of the lesion was thought to be the tooth primordium.
Objective: To determine the frequency of clinical features and radio graphical appearance of odontogenic keratocyst.
Subjects and methods: This Cross Sectional Study was conducted in Akhtar saeed trust hospital Lahore from 2020 to March 2021. A total of 216 patients of both genders with odontogenic keratocysts were included. Patients with history of basal cell nervous syndrome, Orthokeratinized variant and treated cases were excluded. Clinical features and radio graphical appearance of odontogenic keratocyst was collected as per operational definition. Clinical features were noted under the supervision of a consultant with 3 years' post fellowship experience. Data was collected and noted.
Results: Age range in this study was from 20 to 40 years with mean age of 29.629±3.87 years, mean weight 72.675±12.99 kg, mean height 1.556±0.10 meters, mean BMI 30.087±5.03 Kg/m^2, mean duration of complain 8.555±2.49 months and mean pain score was 5.291±1.85. Majority of the patients (61.1%) belongs to 20-30 years age groups. While males were 56.9% as compare to females 43.1%. Pain was seen in 52.8% patients, facial asymmetry 69.4% and root resorption was 9.3%.
Conclusion: It is recommended to the general dental practitioners to have an overview of whole of the stomatognathic system, even if a patient comes for a single tooth problem.

KEYWORDS: Clinical features, Odontogenic keratocysts, Radio graphical appearance.

INTRODUCTION

Odontogenic keratocysts (OKCs) are developmental odontogenic cysts of epithelial origin, first identified and described in 1876 and further characterized by Phillipsen in 1956.[1] Pindborg and Hansen suggested the histologic criteria necessary to diagnose OKC in 1962.[2] The initial terminology for an odontogenic keratocyst (OKC) was "primordial cyst," as the origin of the lesion was thought to be the tooth primordium. In 1992, the World Health Organization (WHO) histologic typing of odontogenic tumors listed "odontogenic keratocyst" (OKC) as the preferred terminology for such cysts with a keratinized lining.[3] Three histologic variants were recognized initially: a parakeratinized variant, an orthokeratinized variant, and combination of the two.

Clinically, they are usually asymptomatic, but may be associated with pain, swelling, drainage and displacement of teeth. They often involve impacted teeth.[4] Rarely, it may present as an apparent mass in the parotid gland.[5] Peripheral odontogenic keratocysts may occur very rarely in gingival soft tissues.[6] Odontogenic keratocysts are usually discovered during the course of a routine radiographic examination. They demonstrate a well-defined unilocular or multilocular radiolucency with smooth and often corticated margins which may simulate that of a dentigerous, radicular, residual or a lateral periodontal cyst. Root resorption is seldom a feature. In older individuals, keratocysts of anterior midline can mimic nasopalatine duct cyst.[5]

The diagnosis of keratocyst is purely histopathological. It has a thin friable wall, typically with minimal inflammation. The lining is stratified squamous epithelium, 6-8 cells thick. There is flat epitheliumconnective tissue interface. The basal cell layer is palisaded, hyperchromatic, cuboidal or columnar epithelial cells. Luminal cells are flattened and parakeratotic in wavy or corrugated appearance. Small satellite cysts, cords or islands of odontogenic epithelium may be seen in fibrous wall, in 7-26% of cases.[5]

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 06 June 2022
DOI: 10.47191/ijcsrr/V5-i6-04, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

AIMS AND OBJECTIVES

To determine the frequency of clinical features and radio graphical appearance of odontogenic keratocyst.

MATERIAL AND METHODS

This Cross Sectional Study was conducted in Akhtar saeed trust hospital Lahore from 2020 to March 2021. Sampling technique was Non-probability consecutive sampling. Sample size was calculated by following formula:

$$n = \frac{z^2\, pq}{d^2}$$

Where expected least proportion (Root resorption) p= 7.5%.[7]
q= 1-p and d= 3.5% and Confidence level = 95%

Inclusion criteria

- Age 25-40 years
- Both Male and Female
- Odontogenic keratocysts > 3 months as per operational definition.

Exclusion criteria

- H/o Basal cell nervous syndrome (Annexure-III)
- H/o Orthokeratinized variant
- Treated cases

Data collection procedure

Informed consent was taken from each patient, ensuring confidentiality and fact that there was no risk involved to the patient while taking part in this study. Data was collected for basic demographics (age, sex, duration of complain). Clinical features and radio graphical appearance of odontogenic keratocyst was collected as per operational definition. Clinical features were noted under the supervision of a consultant with 3 years' post fellowship experience. Data was collected and noted on especially designed proforma.

Statistical analysis

Data was analyzed with statistical analysis program IBM-SPSS version 20. Frequency and percentage was computed for age groups, gender, Pain, Facial Asymmetry, Root resorption. Mean ±SD was presented for quantitative variables like age, height, weight, pain score, BMI and duration of complain.

RESULTS

Age range in this study was from 20 to 40 years with mean age of 29.629±3.87 years, mean weight 72.675±12.99 kg, mean height 1.556±0.10 meters, mean BMI 30.087±5.03 Kg/m^2, mean duration of complain 8.555±2.49 months and mean pain score was 5.291±1.85 as shown in Table-I.

Table- I: Mean±SD of patients according to age, weight, height, BMI, duration of complain and pain score

Demographics	Mean±SD
Age (years)	29.629±3.87
Weight (Kg)	72.675±12.99
Height (m)	1.556±0.10
BMI (Kg/m^2)	30.087±5.03
Duration of complain (months)	8.555±2.49
Pain score (VAS)	5.291±1.85

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 06 June 2022
DOI: 10.47191/ijcsrr/V5-i6-04, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

Table- II: Percentage and Frequency of patients according to age groups

Age Groups (years)	No of Patients	%age
20-30	132	61.1%
31-40	84	38.9%
Total	216	100%

Majority of the patients (61.1%) belongs to 20-30 years age groups as shown in Table -II. While males were 56.9% as compare to females 43.1% as shown in Table-III.

Table- III: Percentage and Frequency of patients according to Pain

Yes	114	52.8%
No	102	47.2%
Total	216	100%

Pain was seen in 52.8% patients, facial asymmetry 69.4% and root resorption was 9.3% as shown in Table-IV, V and VI respectively.

Table- IV: Percentage and Frequency of patients according to Facial Asymmetry

Facial Asymmetry	No of Patients	%age
Yes	150	69.4%
No	66	30.6%
Total	216	100%

Table- V: Percentage and Frequency of patients according to Root Resorption

Root Resorption	No of Patients	%age
Yes	20	9.3%
No	196	90.7%
Total	216	100%

Table- VI: Stratification of Pain with respect to age groups.

Age (years)	Pain		p-value
	Yes	No	
20-30	75(56.8%)	57(43.2%)	0.136
31-40	39(46.4%)	45(53.6%)	
Total	**114(52.8%)**	**102(47.2%)**	

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 06 June 2022
DOI: 10.47191/ijcsrr/V5-i6-04, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

Table- VII: Stratification of Facial Asymmetry with respect to age groups.

Age Groups (years)	Facial Asymmetry		p-value
	Yes	No	
20-30	90(68.2%)	42(31.8%)	0.614
31-40	60(71.4%)	24(28.6%)	
Total	**150(69.4%)**	**66(30.6%)**	

DISCUSSION

Odontogenic keratocyst (OKC) occurs mainly in the jaws, with a mandible/maxilla ratio of 2:1. The term OKC was first proposed by Philipsen in 1956. In 1962, Pindborg et al established the histopathologic criteria for diagnosis of OKC, in which parakeratinization was particularly emphasized.[6] In 2005, the World Health Organization (WHO) reclassified OKC to keratocystic odontogenic tumor (KCOT) based on its clinical behaviors including potential aggression, infiltrative growth, and a high rate of recurrence up to 62.5%.[7]

Occurrence of odontogenic keratocyst varies over a wide age range. In this study, the age range was 20-40 years, with a mean age of 29.629±3.87 years. The age range of this study coincides with that done on 60 patients of OKCs, in 1988 at Ohio State University, which was 5 – 78 years, with a mean age of 40 years.[8-10] The mean age coincides with that of a retrospective study done in Singapore and Malaysian population, which was 26.98 years.[11] Another coinciding figure for the mean age was that of a study done on 30 patients of Gorlin syndrome with 58 OKCs, which was 33.71 years.[12] The small difference may be due to the time of presentation of the patients to the hospital. Still another retrospective study done by Maxine Patridge,[13] on 60 patients of OKC at St. George's hospital, showed a mean age of 38 years (age range 11 – 81). The difference in the value of mean age may be due to racial differences[14-16]. It is also possible that with the passage of time, the OKC is diagnosed earlier due to patient awareness or some likely phenomena[17]. This study showed the maximum number of patients in the second decade, which is in accordance with the values in other international studies.

CONCLUSION

It is recommended to the general dental practitioners to have an overview of whole of the stomatognathic system, even if a patient comes for a single tooth problem. It is also recommended to have a routine radiographic check up of the stomatognathic system, especially in patients in 2nd and 3rd decades of life.

REFERENCES

1. Eryilmaz T, Ozmen S, Findikcioglu K, Kandal S, Aral M. Odontogenic keratocyst: an unusual location and review of the literature. Ann Plast Surg. 2009;62(2):210-2.
2. Pindborg JJ, Hansen J. Studies on odontogenic cyst epithelium. Acta Pathol Microbiol Scand. 1963;58:283-94.
3. Hajalioghli P, Ghadirpour A, Ataie-Oskuie R, Kontzialis M, Nezami N. Imaging findings of gorlin-goltz syndrome. Acta Radiol Short Rep. 2015 Jan;4(1):2047981614552294.
4. Avril L, Lombardi T, Ailianou A. Radiolucent lesions of the mandible: a pattern-based approach to diagnosis. Insights Imaging. 2014 Feb;5(1):85–101.
5. Zhu L, Yang J, Zheng JW. Radiological and clinical features of peripheral keratocystic odontogenic tumor. Int J Clin Exp Med. 2014;7(1):300-6.
6. Vij H, Vij R, Gupta V, Sengupta S. Odontogenic keratocyst: a peripheral variant. Nig J Clin Pract. 2011;14(4):504-7.
7. Khan MT, Khan A, Khitab U, Salam A. Odontogenic keratocysts: a clinical and radiographic study. Pak Oral Dent J. 2010;30(1):52-56.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 05 Issue 06 June 2022
DOI: 10.47191/ijcsrr/V5-i6-04, Impact Factor: 5.995
IJCSRR @ 2022
www.ijcsrr.org

8. Sánchez-Burgos R, González-Martín–Moro J, Pérez-Fernández E, Burgueño-García M. Clinical, radiological and therapeutic features of keratocystic odontogenic tumours: a study over a decade. J Clin Exp Dent. 2014;6(3):e259-64.
9. Matteson SR. Benign tumors of the jaws. In: White SC, Pharoah MJ, editors. Oral radiology : principles and interpretation. 7th edition. Louis, Missouri : Elsevier; 2014.p. 378-94.
10. Ahlfors E, Larsson A and Sjogren S. The Odontogenic Keratocyst: A Benign cystic tumor? J Oral Maxillofac Surg 1984;42(1): 10-19.
11. Cawson RA, Binnie WH, Speight P, Barrett AW, Wright JM, Thorogood P. Luca's pathology of tumors of the oral tissues 5th edition. Churchill livingstone 1998.
12. Vedtofte P, Holmstrup P, Dabelsteen E. Human odontogenic keratocyst transplant in nude mice. Scand J Dent Res 1982;90(4):306–14
13. Stenman G, Magnusson B, Lennartsson B, Juberg-Ode M. In vitro growth characteristics of human odontogenic keratocysts and dentigerous cysts. J Oral Pathol 1986;15(3):143-145
14. Smith G, Mathews JB, Smith AJ, Browne RM. Immunoglobulin-producing cells in human odontogenic cysts. J Oral Pathol 1987;16(1): 45-48.
15. Smith G, Smith AJ and Basu MK. Mast cells in the human odontogenic cysts. J Oral Pathol Med 1989;18(5): 274-278.
16. Kumar V, Cortan R, Robbins S. Basic Pathology. 7th edition; Saunders Company 2003
17. Schottenfeld D, Beebe-DimmerJ. Chronic Inflammation: A Common and Important Factor in the Pathogenesis of Neoplasia. CA Cancer J Clin 2006;56(2);69-83.

Cite this Article: Tauqeer Hussain, Farwa Sikanadar, Hamna Akhtar (2022). Odontogenic Kerato Cysts: Clinical and Radiographic Presentations. International Journal of Current Science Research and Review, 5(6), 1850-1854