

Assessment Of Behaviour Of Children With One Or More Hair Whorls During Dental Treatment

Neveda Baskeran¹, Dr. Subramanian EMG²

1 Professor And Head, Department Of Pedodontics , Saveetha Dental College , Chennai , India

2 Cri, Saveetha Dental College , Chennai , India

Corresponding

Neveda Baskeran , Cri ,
Saveetha Dental College ,
162, Poonamalle High Road , Velappanchavadi ,
Chennai 600077.

Email Id:- Nbaskeran@Yahoo.Com

ABSTRACT

AIM:- To assess the behaviour of children with single and double hair whorls during dental treatments.

OBJECTIVE :-To compare the behaviour and cooperative ability of children with single and double hair whorls.

BACKGROUND :- Various researches have been done to assess the influence of minor anomalies on the hyperactivity of children. Minor anomalies like head size, hypertelorism , hair line , electric hair, low set ears with adherent lobes, malformed pinnae and number of hair whorls, were compared with the hyperactivity of children . As there were no evident research done comparing the number of hair whorls and behaviour of children in a dental setup, a pilot study was done . The study was done in 20 children who came to Saveetha Dental College for treatment. The number of hair whorls were correlated with behaviour of children during their subsequent dental treatments. Wright's modification of Frankl's behaviour rating scale was used to assess the behaviour .

REASON :- This helps the dentist to be prepared and plan treatment according to the number of hair whorls of children.

INTRODUCTION

OKCs are certainly among the most studied and controversial lesions in Oral pathology. The term was first used by Philipsen in 1956.¹ The behaviour of odontogenic keratocyst (OKC), is still being debated in the scientific community. Until recently these lesions were known as Keratocystic Odontogenic Tumor (KCOT).² Most OKC are known to arise from the cell rests of Serre. They tend to enlarge at the expense of the medullary space and produce clinically evident swelling only in the later stages. They can cause significant facial asymmetry and may be associated with pain, purulent discharge. On few circumstances OKC occurring in the mandible are reported to have caused altered sensation ranging from parasthesia to significant pain.

Histopathologically there is the presence of microcysts in the cystic wall which is one of the well established cause for the recurrence even after surgical enucleation.¹ Besides, it has been noted that OKC are among the most prominent feature of Nevroid Basal Cell Carcinoma Syndrome (NBCCS), also known as Gorlin-Goltz syndrome.^{3,4} The present study was conducted to retrospectively analyze the clinical and radiographical features of OKC.

MATERIALS AND METHODS

The clinical and radiographic data, of patients attending the outpatient Department of Oral Medicine and Radiology, Coorg Institute of Dental Sciences from January 2008 to May 2017, with a histopathological diagnosis of OKC were retrospectively evaluated.

Clinical details pertaining to patient's gender, age, site of the lesion, size (<4 cm or >4cm), presence of multiple lesions if any, clinical features if any suggestive of Basal cell Nevus syndrome were recorded. Radiographic analysis included the

location, margins, internal structure and effects on the surrounding structures.

Cases with complete clinical and radiographic data and histopathologic diagnosis of OKC according to WHO 2005² formed the inclusion criteria. Those cases with poor quality radiographs and incomplete data were excluded from the study.

RESULTS

A total of 18 cases comprised the study group. The data obtained was subjected to descriptive statistics. 77.7% of the patients were (14) males and 22.3% (4) females. (Table 1,2). 16.6% (3) of them occurred in the first decade, 22.2% (4 cases) occurred in the second decade, 22.2% of them (4 cases) occurred in the third decade, 3 cases each (16.6%) occurred in the fourth and fifth decade respectively (Graph 1). In the present study only 1 case (5.5%) occurred in the sixth decade of life. 78% of them affected the mandible and 22% of them affected the maxilla (Table 2). Out of these 18 cases 72% (13 cases) of them had pain as the presenting symptom. (Table 1, Graph 2). Swelling of the jaw bone was present in 72% (13 cases) of them (Table 1, Graph 2). Only 3 patients (16.6%) experienced parasthesia and 9 out of the 18 patients (50%) had purulent discharge from the lesions (Table 1, Graph 2). Only 2 cases (11%) the lesions were multiple and these (one male and one female) patients had clinical features fulfilling the 2 major criteria for NBCCS.

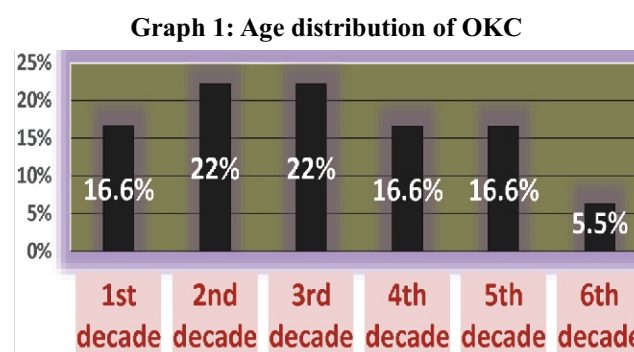


Table 1 : Description of the various clinical features and radiographic features of the cases.

ase no	Gender	Age	Site	Size	Pain	Swelling	Discharge	Parasthesia	Syndrome associated	Unilocular/multilocular	Cortication	Root resorption	Scalloping	Others
1	male	9	mandible	<4cm	absent	present	absent	absent	absent	unilocular	present	Absent	Absent	Absent
2	male	21	mandible	<4cm	absent	absent	absent	absent	absent	unilocular	Present	Absent	Absent	Absent
3	male	39	mandible	<4cm	present	absent	absent	absent	absent	unilocular	Present	Absent	Present	Absent
4	Male	20	maxilla	<4cm	absent	absent	present	absent	absent	unilocular	Present	Absent	Absent	Absent
5	Female	61	mandible	<4cm	Absent	Absent	present	absent	absent	unilocular	Present	Absent	present	Absent
6	Male	36	maxilla	>4cm	present	present	present	present	present	Multilocular	Present	present	Absent	Associated with impacted tooth, Involvement of maxillary sinus
7	male	50	mandible	>4cm	Present	presnt	present	absent	absent	multilocular	Absent	Absent	Absent	Absent
8	female	48	mandible	>4cm	present	present	Absent	present	absent	multilocular	Absent	present	Absent	Absent
9	female	43	maxilla	<4cm	present	present	Absent	absent	absent	unilocular	Present	Absent	Absent	Absent
10	male	36	mandible	>4cm	Present	present	Present	absent	absent	unilocular	Present	present	Absent	Absent
11	male	55	mandible	>4cm	present	present	Absent	absent	absent	unilocular	Absent	Absent	Absent	Absent
12	male	26	mandible	<4cm	present	present	Present	present	absent	unilocular	Absent	Absent	Absent	Impacted 48
13	male	24	mandible	>4cm	present	absent	absent	absent	absent	multilocular	Present	Absent	Present	Absent
14	male	30	mandible	>4cm	present	present	absent	absent	absent	multilocular	Present	Absent	Present	Absent
15	male	51	mandible	>4cm	present	present	absent	absent	absent	multilocular	Present	Absent	Present	Absent
16	male	14	mandible	>4cm	present	present	present	absent	Present 2 major criteria	multilocular	Present	Absent	Present	Absent
17	female	15	mandible	>4cm	present	present	absent	absent	Present 2 major criteria	unilocular	Present	Absent	Absent	Associated with impacted 38 Displacement of the tooth
18	male	40	maxilla	<4cm	absent	present	present	absent	absent	unilocular	Present	Absent	Absent	Absent

33% of the OKC in the present study were multilocular and 67% of these were unilocular (Table 2, Fig 1 OPG pic). 78% (14 cases) of them showed corticated margins and only 33.3% showed the characteristic feature of endosteal scalloping (Table 2). In the present study only one case (5.5%) showed involvement of the maxillary sinus (Table 2, Fig 2 & 3). Out of the 18 cases only 3 cases (16.6%) the cyst was associated with an impacted tooth (Table 2). Only 2 cases (11%) showed resorption of the tooth root in the vicinity of the lesion and 2 cases (11%) showed displacement of the teeth which were associated with the lesion. In the 2 patients (11%) with NBCCS, the mandibular lesions were multiple. (Table 2).



Fig 1 OPG Showing well defined Unilocular radiolucency involving the left posterior body and ramus of the mandible with inferior displacement of the third molar

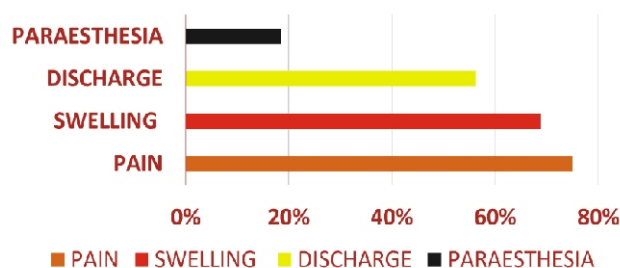


Table 2: Radiographic features of the lesions

RADIOGRAPHIC FEATURES	NO.OF CASES	PERCENTAGE
MANDIBULAR LESIONS	14	78%
MAXILLARY LESIONS	4	22%
MULTILOCLAR	6	33.3%
CORTICATION	14	78%
MULTIPLE LESIONS	2	11%
SYNDROME ASSOCIATED	2	11%
SINUS INVOLVEMENT	1	5.5%
CROSSING THE MIDLINE	2	11%
IMPACTED TOOTH	3	16.6%
SCALLOPING	6	33.3%
ROOT RESORPTION	2	11%
TOOTH DISPLACEMENT	2	11%



Fig 2: Coronal CT section showing well defined isodense mass involving the entire left maxillary sinus.

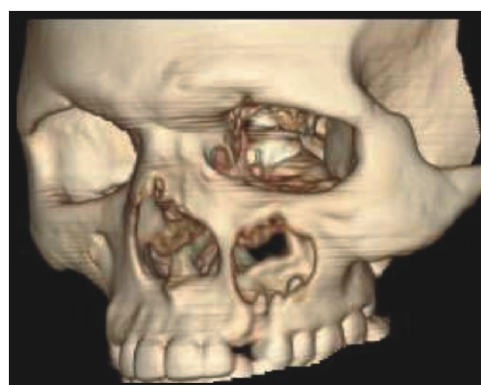


Fig 3: 3D Reconstruction showing perforation of the anterior maxillary sinus (left side)

present study, patients experienced swelling, pain and purulent discharge. Two of these five patients had lesion which was associated with carious tooth in the proximity of the lesion. The rest three cases the lesion caused perforation of the alveolar bone with spontaneous discharge of cystic contents into the oral cavity and the lesion was secondarily infected.

Multiple OKC, cutaneous nevi, palmer planter pitting, rib anomalies, basal cell carcinoma are predominant characteristic features of Nevoid basal cell carcinoma syndrome.^{3,4} Veenstra-Knol et al have proposed diagnostic criteria for NBCCS. Accordingly the presence of 2 major criteria or 1 major and 2 minor criteria are to be met necessary for the diagnosis of NBCCS.¹¹ In our case series one of the patient had multiple lesions involving the mandible and maxilla and was associated with impacted teeth. The patient also had palmer plantar pitting and bifid rib. Similarly another patient had multiple lesions involving the mandible along with the presence of bifid ribs, pectus carinatum, and winged scapula. Both these patients did not have cutaneous nevi and any evidence of basal cell carcinoma. Gene testing for confirmation of mutation of PTCH gene was not done as they fulfilled the criteria for the diagnosis of NBCCS. This is in accordance with previous case reports^{12,13}

OKC could present as a unilocular or multilocular radiolucency and is often well defined with corticated margins. The periphery of the lesion often shows endosteal scalloping which produces a pattern of multilocularity of the lesion. This could be due to varied growth which is multiplanar. Expansion is often minimal or absent. Displacement of teeth is often present in OKC but root resorption is rare.¹⁴ Multilocularity tends to be seen more frequent in larger lesions. According to

Browne multilocularity is seen 23% and Forssell in 25%^{15,16} In the present study we found only 33.3% of the lesions were multilocular and the rest 67% of them being unilocular. Presence of well-defined cortication was present in 78% cases. Endosteal scalloping was seen in 33% of the cases and root resorption was observed in only 2% of cases which is in concordance with the previous literature^{16,17} Displacement of the tooth was present only in one case which is in contrast to the earlier case reports.^{15,16,17} In the present case series only 1 one case had involved the maxillary sinus and also had caused displacement of the inferior orbital floor. The lesion was also associated with the impacted maxillary tooth. This was in concordance with the previous literature.^{18,19}

CONCLUSION

A retrospective analysis of a case series of OKC has been presented. The mandible was involved more frequently than the maxilla with imaging characteristics similar to the cases reported in literature. Correlation between clinical, imaging and histopathological features could shed further information regarding their behavior.

REFERENCES

1. Philipson H.P.(1956)Om keratocyster (kolesteatom)I kaeberne.Tandlagebladet 60,963-981)
2. (WHO 4th edition, 2017)
3. Philipsen H.P., Fejerskov O., Donatsky O. and Hjørring-Hansen E. (1976) Ultrastructure of epithelial lining of keratocysts in nevoid basal cell carcinoma syndrome. *International Journal of Oral Surgery* 5, 7181.
4. Donatsky, O.; Hjørring-Hansen, E.; Philipsen, H. P. & Fejerskov, O. Clinical, radiologic and histopathologic aspects of 13 cases of nevoid basal cell carcinoma syndrome. *Int. J. Oral*

5. Brannon R.B. (1976) The odontogenic keratocyst. A clinicopathologic study of 312 cases. Part 1. Clinical features. *Oral Surgery, Oral Medicine, Oral Pathology* **42**, 5472
6. Odontogenic Keratocyst. Cysts of the Oral and Maxillofacial Regions. M Shear, M S Paul. 2007, Blackwell Publishing Ltd. United Kingdom. P 7-12
7. Maurette, P. E.; Jorge, J.; de Moraes, M. Conservative Treatment Protocol of Odontogenic Keratocyst: A Preliminary Study. *J. Oral Maxillofac. Surg.*, **64**(3):379-83, 2006)
8. Kaustubh Sansare, Mamta Raghav, a Muralidhar Mupparapu, Nilesh Mundada, a Freny R. Karjodkar, Shivani Bansal, Rajiv Desai Keratocystic odontogenic tumor: systematic review with analysis of 72 additional cases from Mumbai, India. *Oral Surg Oral Med Oral Pathol Oral Radiol* **2013**;115:128-139)
9. Chow HT (1998) Odontogenic keratocyst: a clinical experience in Singapore. ,
10. Philipsen HP (2005) Keratocystic odontogenic tumour. In World Health Organization classification of tumours: pathology and genetics of head and neck tumours,
11. Veenstra-Knol H. E. et al., Eur. J. Diagnostic criteria for Gorlin syndrome (or nevoid basal cell carcinoma syndrome, NBCCS, *Pediatr.* **164**(3):12630, 2005
12. N. K. Kiran, T. N. Tilak Raj, K. S. Mukunda, V. Rajashekar Reddy, Nevoid basal cell carcinoma syndrome (Gorlin Goltz syndrome) *Contemporary Clinical Dentistry* | Oct-Dec 2012 | Vol 3 | Issue 4,
13. Satheesh Chandran , Karthikeyan Marudhamuthu , R Riaz, Saravanan Balasubramaniam Odontogenic Keratocysts in Gorlin Goltz Syndrome: A Case Report *Journal of International Oral Health* **2015**; **7**(Suppl 1):76-79
14. Diagnostic imaging of the jaws, Robert P Laglais , Olaf E Langland, Christoffel J Nortje B, Williams and Wilkins. p 24-27.
15. Habibi A, Saghravanian N, Habibi M, Mellati E, Habibi M (2007) Keratocystic odontogenic tumors: a 10-year retrospective study of 83 cases in an Iranian population. *J Oral Sci* **49**, 229-234.
16. Browne R.M. (1970) The odontogenic keratocyst: clinical aspects. *British Dental Journal* **128**, 225-231.
17. Forssell K. and Sainio P. (1979) Clinicopathological study of keratinized cysts of the jaws. *Proceedings of the Finnish Dental Society* **75**, 36-45
18. Guilherme Costa Carvalho Silva a, Edgard Carvalho Silva b , Ricardo Santiago Gomez b , Tainah Couto Vieira
Odontogenic keratocyst in the maxillary sinus: Report of two cases *Oral Oncology EXTRA* (2006) **42**, 231-234.
19. Ashwini Kumar Mengji, Uday Shankar Yaga, Radhika Besta, Rashmi Shivakumar Doshetty Keratocystic odontogenic tumor involving the maxillary antrum with displacement of the third molar: A rare case report *Journal of Indian Academy of Oral Medicine & Radiology*, 2014 Vol 26 Issue 3.