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Cysts of the Head and Neck Region: Analysis of 189 Cases Seen and Managed at a Tertiary Healthcare Facility in Northwestern Nigeria

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ABSTRACT

Background: Cysts of the head and neck region are frequently encountered in head and neck clinical practice. The majority of these lesions are derived from remnants of cells of developmental origin. This study aimed to present the pattern of clinical presentation and management of cystic lesions of the head and neck region.

Material and Method: This was a retrospective study conducted using a ten-year record of patients. After obtaining ethical approval from the institution's research and ethics committee, all cases of cysts of the head and neck region seen and managed were included, whereas those cases with poor documentation were excluded. Patient's sociodemographic, main complaint, site and type of the cyst, available imaging, treatment, and outcome were recorded. Data obtained were analysed using IBM SPSS (version 25).

Result: There were 118 (62.4%) males and 71 (37.6%) females in the age range of 7 months to 55 years and a median age of 20 years. The majority of the cysts 58 (30.7%) were seen in the 2nd decade, and mandible 77 (40.7%) was the commonest site. Dentigerous 40 (21.2%) constitutes the commonest cystic lesion diagnosed. Plain radiographs (60.3%) were the commonest available imaging. The treatment procedures include jaw resection, cystic enucleation, enucleation with peripheral ostectomy, and surgical excision of the non-epithelial lesion. All patients were without the disease during the immediate follow-up, and the majority were lost to follow-up.

Conclusion: Cysts of the head and neck region are a diverse group of lesions occurring in several anatomical locations, with the mandible as the commonest affected site. Dentigerous cyst was the commonest, followed by odontogenic keratocyst.

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Introduction

A cyst is a pathologic cavity having fluid, semifluid, or gaseous

contents that are not created by the accumulation of pus; frequently but not always lined by epithelium [1]. It can occur at any part of the body, but majorly in the head and neck region [1,2]. The cysts of the head and neck region are frequently encountered in head and neck clinical practice, and the majority of them are

derived from remnants of cells of developmental origin [3]. These lesions can be found in the scalp, jaws, glands, floor of the mouth, submental region, lateral, and medial aspects of the neck. They can be classified in several ways, such as odontogenic and nonodontogenic; epithelial and non-epithelial; and developmental and inflammatory cysts [4,5]. Odontogenic cysts are formed as a result of activation of entrapped odontogenic rest cells (epithelial cell rest of malassez, cell rest rest of erres, reduced enamel epithelium, or enamel organ) within the jaw bones or gingivae [6,7]. Activation of rest cells by the inflammatory process gives rise to inflammatory odontogenic cysts [8]. The pattern of clinical presentation varies in relation to the location and the type of the cyst [9]. However, general features include a palpable swelling or lump, which may be painful or tender depending on its state [10,11]. They are fluctuant and usually present with smooth or regular surfaces [12]. The diagnostic work-up for the cystic lesions in the head and neck (H&N) region also depends on the location [7]. Chairside aspiration, ultrasonography, plane radiography, computed tomography scan, magnetic resonance imaging, and incisional biopsy have their variable roles in the diagnosis [13]. Several studies are available in the literature as regards to these lesions, particularly describing them as groups or according to their specific locations, but there is a paucity of literature analyzing cysts of the head and neck as a whole [14,15]. Hence, this study aimed to present a preliminary report highlighting the pattern of clinical presentation and management of cysts of the head and neck region.

Material and Method

This was a retrospective study conducted over 10 years. After obtaining ethical approval from the institution's research and ethics committee, all cases of cysts of the head and neck region seen and managed were included, whereas those cases with poor documentation were excluded. Patient's sociodemographic, main complaint, site and type of the cyst, available imaging, treatment, and outcome were recorded. Data obtained were analyzed using IBM SPSS (version 25).

Result

There were 118 (62.4%) males and 71 (37.6%) females with a male-to female ratio of 1.7:1. Patients ages range from 7 months to 55 years, with a median age of 20 years. The majority of the cysts, 58 (30.7%), were seen in the 2nd decade (Table 1). Mandible 77 (40.7%) was the commonest site, followed by the neck 30 (15.9%). (Table 2). Dentigerous cyst 40 (21.2%) constitutes the commonest cystic lesion diagnosed. (Table 3) Plain radiographs (60.3%) were the commonest available imaging. The treatment procedures include jaw resection, cystic enucleation, enucleation with peripheral ostectomy, and surgical excision of the non-epithelial lesion. All patients were without the disease during the immediate follow-up, and the majority were lost to follow-up.

Table 1: Age Distribution of Patients

S/N	Age Range	Frequency (n)	Percentage (%)
1	1 – 10	30	15.9
2	11 – 20	58	30.7
3	21 – 30	43	22.8
4	31 – 40	24	12.7
5	41 – 50	19	10.0
6	51 – 60	15	7.9
Total		189	100

Table 2: Anatomical Location of the Cystic Lesions among the Study Subjects

S/N	Anatomical region involved	Frequency (n)	Percentage (%)
1	Mandible	77	40.7
2	Neck	30	15.9
3	Submental Region	28	14.8
4	Maxilla	25	13.2
5	Floor of the mouth	12	6.4
6	Lips	8	4.2
7	Parotid	6	3.2
8	Supraorbital region	3	1.6
Total		189	100

Table 3: Distribution and Association of the Cystic Lesion with the Gender

S/N	Diagnosis	Gender distribution n (%)		TOTAL
		M	F	
1	Aneurysmal bone cyst	1 (0.5)	2 (1.1)	3 (1.6)
2	Branchial cyst	2 (1.1)	5 (2.6)	7 (3.7)
3	Cystic hygroma	4 (2.1)	1 (0.5)	5 (2.6)
4	Dentigerous cyst	25 (13.2)	15 (7.9)	40 (21.2)
5	Dermoid cyst	12 (6.3)	15 (7.9)	27 (14.3)
6	Epidermoid cyst	4 (2.1)	0 (0)	4 (2.1)
7	Globulomaxillary cyst	2 (1.1)	0 (0)	2 (1.1)
8	Laryngocele	2 (1.1)	2 (1.1)	4 (2.1)
9	Lateral periodontal cyst	5 (2.6)	1 (0.5)	6 (3.2)
10	Mucocele	5 (2.6)	3 (1.6)	8 (4.2)
11	Odontogenic keratocyst	18 (9.5)	12 (6.3)	30 (15.9)
12	Parotid cyst	6 (3.2)	0 (0)	6 (3.2)
13	Radicular cyst	14 (7.4)	7 (3.7)	21 (11.1)
14	Ranula	9 (4.8)	3 (1.6)	12 (6.3)
15	Solitary bone cyst	1 (0.5)	1 (0.5)	2 (1.1)
16	Thyroglossal duct cyst	8 (4.2)	4 (2.1)	12 (6.3)
17	TOTAL	118 (62.4)	71 (37.6)	189 (100)

$$X^2 = 17.459, df = 15, p = 0.292$$

Discussion

Cystic lesions are frequently encountered in head and neck surgical sub-specialties and these are usually odontogenic or non-odontogenic, developmental or inflammatory in origin [1]. These lesions can be found in several locations in the head and neck [4,5]. The data in this study show a variable anatomical distribution, which includes the supraorbital region, maxilla, mandible, submental region, floor of the mouth, lips, and the parotid region. Other locations also reported in other literature include the nose, eyebrow, nasolabial fold, palate, and sublingual gland. The most common site of occurrence of these lesions from this study was the mandible, which is in tandem with a similar study by Olojede et al [11]. The reason for the mandible being

the commonest site in this study was because dentigerous and odontogenic keratocysts were the highest and second highest cysts identified in this study and majorly affect the mandible. A high tendency for activation of rest cells towards cystic degeneration in the mandible has been suggested by many authors [9-11]. This study reported male preponderance with a male to female ratio of 1.7:1, which was similar to what was reported by Olojede from southwestern Nigeria in a study titled 'cysts of the orofacial region: a clinic-pathologic review of 403 Nigerian cases [11]. Male preponderance was also reported by [6-9]. In their studies narrowed to a more specific group of the cysts. The male preponderance reported in this study might be related to the fact that men are more likely to neglect their oral hygiene and also men are more prone to trauma. A large percentage of cases were seen in the 2nd decade of life, and this agreed with the findings of many studies [4,7,8]. Thyroglossal duct cysts were the commonest congenital cervical cystic mass identified in this study, followed by branchial cysts and cystic hygroma. Mohammad et al, reported similar findings [12,14]. Diagnosis of cysts in the head and neck does not usually pose difficulty, and it is done mainly via precise history-taking, clinical examination, and chairside aspiration. Imaging modalities such as plane radiographs, computed tomography scans, and magnetic resonance imaging have a diagnostic role, especially in delineating the extent of cystic destruction. Plain radiographs were the most available imaging and were adequate for most of the cysts. The use of computed tomography (CT) scans with multiplanar programs has proven to be more useful in identifying jaw abnormalities and pathology and has been advocated [7]. The treatment of cysts of the head and neck region varies according to the location, the type of cysts, and the extent of involvement. The treatment modalities offered to our patients include jaw resection, cystic enucleation with peripheral osteotomy, and resection. None of our patients had bone grafting. Follow was essential following surgical treatment, but the data on follow was grossly inadequate from this study [16-19].

Conclusion

Cysts of the head and neck region are a diverse group of lesions occurring in several anatomical locations, with the mandible as the commonest affected site. Dentigerous cyst was the commonest, followed by odontogenic keratocyst.

Conflict of interest

The authors declared no conflict of interest.

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References

1. Al-Khateeb TH, Al-Masri NM, Al-Zoubi F (2009) Cutaneous cysts of the head and neck. *J Oral Maxillofac Surg* 67: 52-57.
2. Vazquez Salas S, Pedro K, Balram A, Syed S, Kotaka K, et al. (2002) Head and Neck Cystic Lesions: A Cytology Review of Common and Uncommon Entities. *Acta Cytol* 66: 359-370.
3. Tortorici S, Amodio E, Massenti MF, Buzzanca ML, Burrano F, et al. (2018) Prevalence and distribution of odontogenic cysts in Sicily: 1986–2005. *J. Oral. Sci* 50: 15-18.
4. Manor E, Kachko L, Puterman MB, Szabo G, Bodner L (2012) Cystic lesions of the jaws - a clinicopathological study of 322 cases and review of the literature. *Int J Med Sci* 9: 20-26.
5. McDonald AR, Pogrel MA, Carson J, Regezi J (1996) p53-positive squamous cell carcinoma originating from an odontogenic cyst. *J. Oral. Maxillofac.Surg* 54: 216-218
6. Iyogun CA, Ochicha O, Sule AA, Adebola RA (2013) Jaw Cysts in Kano: Northern Nigeria. *International Journal of Oral & Maxillofacial Pathology* 4: 8-12.
7. Oji CH (1999) Statistical observations on jaw cysts in Enugu, Nigeria, 1987-1996. *Odontostomatol Trop* 22: 33-36.
8. Monteiro L, De La Peña J, Fonseca L, Paiva A, Do Amaral B (2005) Odontogenic cysts - A descriptive clinicopathological study. *Braz J Oral Sci* 4: 670-675.
9. De Souza LB, Gordón-Núñez MA, Nonaka CF, De Medeiros MC, Torres TF, et al. (2010) Emiliano GB. Odontogenic cysts: demographic profile in a Brazilian population over a 38-year period. *Med Oral Patol Oral Cir Bucal* 15: 583-590.
10. Benjamin Fomete, Otasiwu Daniel Osunde, Joseph Ogbeifun, Rawland Agbara (2016) A 10-Year Retrospective Analysis of 64 Case of Cystic Lesion of the Oral and Maxillofacial Region in a Nigerian Tertiary Hospital. *Oman Medical Journal* 31: 434-438.
11. ACO Olojede, OA Effiom, AO Adisa, AA Akinshipo, AB Olawuyi, et al. (2017) Cysts of the Oro-facial region: A Clinico-Pathologic Review of 403 Nigerian Cases. *East African Medical Journal* 9: 116-120.
12. Meningaud JP, Opresan N, Pitak-Arnop P, Bertrand JC (2006) Odontogenic cysts: a clinical study of 695 cases. *J Oral Sci* 48: 59-62.
13. P Firat, C Ersoz, A Uguz, S Onder (2007) Cystic lesions of the head and neck: cytohistological correlation in 63 cases. *Cytopathology* 18: 184-190.
14. Ibrahim Mohannad, Khaled Hammoud, Mohit Maheshwari, Amit Pandya (2011) Congenital cystic lesions of the Head and Neck. *Neuroimaging Clinics* 12: 621-639.
15. Rubio ED, Mombrú CM (2015) Spontaneous Bone Healing after Cysts Enucleation without Bone Grafting Materials: A Randomized Clinical Study. *Craniofac Trauma Reconstr* 8: 14-22.
16. Demirkol M, Ege B, Yanik S, Hamdi M, Ay S (2014) Clinicopathological study of jaw cysts in southeast region of Turkey. *Eur. J. Dent* 8: 107-111.
17. Oti AA, Donkor P, Owusu-Afriye O (2013) Orofacial Cysts at Komfo Anokye Teaching Hospital, Ghana. *Surgical Science* 4: 65-67.
18. Selvamani M, Donoghue M, Basandi PS (2012) Analysis of 153 cases of odontogenic cysts in a South Indian sample population: a retrospective study over a decade. *Braz Oral Res (São Paulo)* 26: 330-334.
19. Lawal A, Adisa A, Sigbeku O (2012) Cysts of the oro-facial region: A Nigerian experience. *J Oral Maxillofac Pathol* 16: 167-171.

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