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SPECTRUM OF ORBITO-OCULAR LESION IN MAKURDI, NORTH-CENTRAL NIGERIA

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ABSTRACT
This was a retrospective study of all ocular lesions requiring biopsy seen in the department of Anatomic pathology, Benue State University Teaching Hospital, (BSUTH) Makurdi, Nigeria between September 2012 and December, 2019. It was a retrospective review of clinico-pathologic profile of orbito-ocular lesions diagnosed at BSUTH. Sixty (60) cases representing 12% of all histopathology specimen processed by our laboratory during the index period were reviewed. Pediatric age group defined as age equal or less than 21 years of age accounted for 17 (28%) of cases while adults accounted for 43 (62%). The male to female ratio was 1.14:1. The most common site of lesions were intraocular (35%), conjuctival (30%), eyelid (28%) and orbit (12%). Squamous cell carcinoma (37%), retinoblastrona (13%) and embryonal rhabdomyosarcoma (8%) were the common lesion seen in the study.Squamous cell papilloma represents the most common benign lesion (7%). A case of a premalignant condition, primary acquired conjuctival melanosis, a lesion whose nature and importance is controversial was seen representing 2% of the total of all lesions. Our findings are in keeping with previous work in Nigeria and to some extent, Africa. The high rate of squamous cell carcinoma in our work may be a reflection of HIV/AIDs epidemic in Nigeria, as Makurdi, Benue State in Nigeria has a prevalence rate that is higher than the natural average.

KEYWORDS: *Orbito-ocular lesions, Makurdi, Nigeria.*

INTRODUCTION
Orbito-ocular lesions (OOL) constitute an important cause of morbidity and mortality with resulting visual impairment having both economic and social cost implication as well as diminished quality of life. Pathological profiles of orbito-ocular lesions provide information on the prevalence and existence of the lesions and may help in guiding diagnosis prior to biopsy or resection and for determination of treatment modalities.[1] Orbito-ocular system represents a potential site for various conditions ranging from trauma to degenerative condition and inflammatory to neoplasma.[2] Different works and studies have shown local and international variation in the pattern of the lesions especially with regard to age, sex, site, and possible causative factors.[3,4,5]

Benue State University Teaching Hospital (BSUTH), is a tertiary hospital, situated in Makurdi, Benue States in North central Nigeria providing all levels of eye care to inhabitants of Benue State and neighboring state. There is a paucity of studies on the pattern and characteristic of orbito-ocular lesions in Makurdi, Benue State.

The work set to review the histopathological patterns of orbito-ocular specimens seen at BSUTH, review and update data for demography and prevalence of common orbito-ocular lessons in Benue state, describe their pathological features in comparisons to other parts of Nigeria and the world with the hope that the findings will help formulate appropriate intervention strategies.

MATERIALS AND METHOD
This was a retrospective review of all orbito-ocular lesions diagnosed at the Anatomic pathology Department of this BSUTH, Makurdi, Benue State, a tertiary health care facility in north central zone of Nigeria between September 2012 and December 2019.

The patients' demographic data and pathological diagnosis were retrieved from original histopathological report form. The patient's age, sex, site of lesions

indicates for ocular biopsies and pathological diagnosis was noted.

The original studies were not retrieved but where necessary, fresh section were cut from archival tissue paraffin blocks and stained by routine haematoxylin and eosin (H.E).

The data obtained were analyzed using simple statistical methods.

RESULTS

Sixty specimen representing 12% of all histopathology specimens processed by our laboratory during the index period were reviewed. Pediatric age group (age equal or less than 21 years of age) accounted for 28% (n=17) of all the OOL, while adults accounted for 62% (n=43). A total of 32 males and 28 females were involved, giving a male to female ratio of 1.14:1. The age range was 1 month to 85 years. Most of the 00L occurred in 1-10 years and 30-39 years group (Table 1).

The common sites of lesions were intraocular, 35% (n= 21), conjunctiva, 30 %,(n = 18), eyelid 28%, (n = 14%) and orbit, 12 %(n =7).

Table 2 shows the broad histological classification of lesions. Squamous cell carcinoma (SCC) (37%), Retinoblastoma (13%) and Embryonal Rhabdomyosarcoma (8%) are the more common lesions seen in the study. While SCC represents the most common malignant lesion in the study, squamous cell papilloma represents the most common benign lesion with 4 cases(7%). A case of a premalignant condition, primary acquired conjuctival melanosis was seen representing 2% of the total OOL.

Table 1: Sex and age range distribution of OOL in Makurdi.

S/N	Age range	M	F	Total (%)
1	1<	1	-	1 (2%)
2	1-10	6	7	13 (22%)
3	11-19	1	2	3 (5%)
4	20-29	4	4	8 (13%)
5	30-39	9	3	12 (20%)
6	40-49	3	5	08 (13)
7	50-59	3	3	06 (10)
8	60-69	2	3	05 (8)
9	70-79	2	1	03 (5)
10	>80rs	-	1	1 (2%)
	Total	**31**	**29**	**60 (100%)**

Table 2: Age and sex distribution of the spectrum of orbito-ocular lesions in Makurdi Nigeria.

S/N		Average age of presentation	M	F	Total
1	Embryonal rhabdomyosarcoma	6	1	4	5
2	Retinoblastoma	4	5	3	8
3	Dermoid cyst	10	1	1	2
4	Hemagioma	15	0	1	1
5	Squamous cell carcinoma	12	11	11	22
6	Chronic granulomatous inflammatory reactions	39	0	1	1
7	Pterygium	27	0	3	3
8	Inflammation	43	1	0	1
9	Epidermal inclusion cyst	41	1	1	2
10	Sebaceous hyperkeratosis	63	0	1	1
11	Non Hodgkin lymphoma	30	0	1	1
12	Lipoma	50	0	1	1
13	Fibrous dysplasia	20	1	0	1
14	Squamous cell papilloma	38	2	2	4
15	Anaplstic carcinoma	75	1	0	1
16	Small round blue cell tumor	10	1	0	1
17	Chronic dermatitis	54	0	1	1
18	Alveolar rhabdomyosarcoma	70	1	0	1
19	Seborrheic keratosis	57	1	0	1
20	Hibrocytoma	35	1	0	1
21	Primary acquired conjuctival melanosis	50	1	0	1
	Total		**29**	**31**	**60**

DISCUSSION

The specimen samples analyzed in this study constituted 1.2% of all samples received in the Anatomic pathology laboratory during the index study. This is higher than the 0.4% reported in a similar study by Charles and James[3] in Benin but similar to the 1% earlier reported in the same Benin center by Aligbe, Igbokwe and Akang.[4] It is pertinent to say that our centre located in north central Nigeria also receive patients from adjoining states with no specialized eye care system.

Orbito-ocular lesions occurred more in males than females with a rate of 1.14:1, this is statistically insignificant and confirm to similar distribution found in works done within Nigeria and Africa.[5,6,7,8]

Pediatric age group (less than or equal to 21 years) accounted for 28% of lesson. This is at variance with studies from Benin, Lagos and Ibadan [4,5,6] but similar to Ilorin and Ghana studies.[7,8] but it is important to state that our criteria for pediatric age group were children less than or equal to 21 years and not children less than 15 years in the quoted references.

Malignant lesions as represented by SCC (37%), Retinoblastoma (13%) and Embryonal Rhabdomyosacoma(8%) are the most common lesions. The finding of SCC as the most common malignancy and affecting both sexes is comparable to findings from other studies.[1,5,6,7,9,10]

Retinoblastoma is the most common childhood malignancy in this study and is in agreement to other reports.[4,5,6]

While studies from other countries have reported a male preponderance for conjunctiva SCC, we did not find any appreciable difference between the sexes. Our finding of SCC as the most common malignancy is in contrast to previous works from Nigeria.[11,12,13] These other works had retinoblastoma as the most common malignancy. The finding with SCC in our study may be a reflection of the hyperendemicity of HIV in Benue state of Nigeria. Previous studies have concluded that SCC is common in the tropics and strongly associated with HIV/AIDS.[9] Some studies[14,15,16] found HIV seropostivly in patients with SCC to be between 54.6% to 75% and the Fischer's test demonstrates a statically significant association between HIV positivity and SCC.[16] We did not access the HIV/AIDS status of the patients but two of the patients with SCC were seropositive for HIV/AIDS.

Squamous cell papilloma is the most common benign lesion in this study. They are benign epithelial neoplasm producing microscopically or macroscopically visible finger-like usually projections from its epithelium (squamous cell) surface. Papillomas are relatively common lesion of the conjunctiva with a tendency for recurrence after apparent complete excision[17] Microscopically, the typical papilloma reveals pronounced acanthosis with varying degrees of keratinization, koilocytosis and non-specific inflammation. Human papilloma virus (HPV) type 6/11 has been found in these lesions by in situ hybridization.[18]

A case of so-called "acquired melanosis" was also seen. This is a term commonly used among ophthalmologist and ophthalmic pathologist for a melanocyte proliferative lesion of the conjuctiva that has also been referred to as primary acquired melanosis, precancerous melanosis, atypical melanocytic hyperplasia and as malignant melanoma in situ.[19,20,21] The nature and importance of this lesson is controversial, but it has been postulated that all cases of acquired melanosis especially those exhibiting atypia are malignant melanoma is situ.[20]

In conclusion, OOL are common in Nigeria. Our findings are in keeping with recent works on the subject in Nigeria and to some extent, Africa. The high rate of SCC may be a reflection of HIV/AIDS epidermic in Nigeria, as Makurdi, Benue state in Nigeria has a prevalence rate that is higher than the national average.

Conflict of Interest

None.

REFERENCES

1. Ifeyinwa Mary Onwubuya, Tunde Mark Owoyele, Olaejirinde Olaniji Olaofe and Kevin Nwabueze Ezike. Morphological spectrum of orbito-ocular diseases in a tertiary health centre in Keffi north central Nigeria. Advances in Medicine, 2015; Article ID619414, 5 pages. http://dx.doi.org/10.1155/2015/619414.
2. Eye and ocular adnexa.In:Rosai J,(editor),Rosai and Ackerman's Surgical Pathology.10th ed.New York, USA. Elsevier, 2004; 2467-501.
3. Nwafor Chukwuemeka Charles, Ekanem Victor James. A study of the histopathological pattern of orbito-ocular disease in a tertiary hospital in Nigeria. Sahel Medical Journal, 2014; 17(2): 60-64.
4. J.U. Aligbe, U.O. Igbokwe, and E.E. Akang. "Histopathology of orbito-ocular diseases seen at University of Benin Teaching Hospital, Benin City". The Nigerian Postgraduate Medical Journal, 2003; 10(1): 37-41.
5. C.C. Anunobi, F.B. Abdulkareem, O.T. Aribaba, M.A. Nnoli, and A.A. Banjo. Orbito-ocular lesions in Lagos". The Nigerian Postgraduate Medical Journal, 2008; 15(3): 146-151.
6. Bekibele CO, Oluwasola AO. Clinicopathological study of orbito-ocular disease in Ibadan between 1991-1999. Afr J Med Sci, 2003; 32: 197-202.
7. Mahmoud AO, Buari MB, Adekoya BS. Pattern of orbito-ocular growth, in Ilorin, Nigeria. Trop J Health Sci, 2007; 14: 23-7.

8. Gyasi ME, Amoaku WM, Adjuik M. Causes and incidence of destructive eye procedures in North-Eastern Ghana. Ghana Med J, 2009; 43: 122-6.
9. Poole T. Conjunctiva squamous cell carcinoma in Tanzania. Br. J. Ophthalmol, 1995; 83: 177-8.
10. Lee GA, Hirst LW. Ocular surface squamous metaplasia. Surv. Optholmol, 1995; 39: 429-50
11. A Mohammed, S.A Ahmed, N.E Ahmedu and J.S Maisamari. Orbito-ocular malignancy tumors in Zaria, Nigeria: A 10 year review. Annals of African Medicine, 2006; 5(3): 129-131.
12. Oyin Olurin,A. Olufemi Williams. Orbito-ocular tumors in Nigeria. Cancer, 1972; 30: 580-586.
13. Chinda D, Samaila MO, Abah ER, Garba F, Rafindadi AL, Adamu A. A Clinico-pathological study of orbito-ocular tumors at Ahmadu Bello University Teaching Hospital Shika-Zaria, Nigeria: A 5 year review. Clin Cancer Investing. J, 2012; 1: 145-147.
14. Ateenyi Agaba C. Conjuctival squamous cell carcinoma associated with HIV infection in Kampala, Uganda. Lancet, 1995; 345: 695-6.
15. Osahon AI, Ukponmwan CU, Uhunmwangho OM .Prevalence of HIV seropositivity among patients with squamous cell carcinoma of the conjunctiva. Asia Pac J. Trop Biomed, 2011; 1:150-3.
16. Habib SG, Lawan A, Victoria P. Clinicopathologic presentation of malignant orbito-ocular tumors in Kano, Nigeria: A prospective Multicenter study. Ann. Afr Med, 2019; 18: 86-91.
17. Juan Rosal. Eye and ocular adnexa in Rosai and Ackerman's surgical pathology 10th Edition vol. 2 Elsevier, 2019; 2467-2501.
18. McDonnel PJ, MeDonnel JM, Kessis T, Green WR, Shah KV. Detection of human papilloma virus 6/11 DNA in conjuctival papillomas by in situ hybridization with radioactive probes. Human pathol, 1987; 18: 1115-1119.
19. Ackerman AB, Sool R, Koenig M. Primary acquired melanosis of the conjuctiva is a melanoma in situ. Mod Pathol, 1991; 4: 253-263.
20. Folberg R, Jakubico FA, Mclean IW, Zimmerrnan LE. IS primary acquired melanosis of the conjuctival equivalent to melanoma in situ? Mod Pathol, 1992; 5: 2-8.
21. Mclean IW. Diferential diagnosis of the conjuctival melanosis. Ann Diagn Pathol, 1998; 2: 264-270.