

A clinico-pathological study of orbito-ocular tumors at Ahmadu Bello University Teaching Hospital, Shika-Zaria, Nigeria: A 5-year review

Dominic Chinda, Modupeola O. Samalia¹, Emmanuel R. Abah, Farouk Garba, Abdulkadir L. Rafindadi, Abdullahi Adamu²

Departments of Ophthalmology, ¹Pathology, ²Radiotherapy-Onchology, Ahmadu Bello University Teaching Hospital, Shika-Zaria, Nigeria

ABSTRACT

Background: Orbito-ocular tumors are a common cause of morbidity and mortality in our environment. Patients often present late with unsightly fungating tumors resulting in difficult management and poor outcome. The aim of the study was to determine the clinical profile, diagnostic work-up, treatment and histo-pathological types of orbito-ocular tumors seen at Ahmadu Bello University Teaching Hospital, Shika-Zaria from June 2006 to June 2011. **Materials and Methods:** A retrospective analysis of all patients who presented to the eye clinic with orbito-ocular tumors during the study period was made. Information extracted includes patient demographics, clinical diagnoses, radiological and sonological reports, surgery performed, and histology reports as well as adjuvant chemotherapy and radiotherapy where indicated. **Results:** A total of 54 patients were managed during the study period. Those without histology reports were excluded from the study. Forty-nine patients were included for analysis. There were 29 male and 20 female patients giving a male to female ratio of 1.8:1. Their age range was 1.5–74 years with a mean of 22 years. Eighteen of the patients had retinoblastoma, eleven had squamous cell carcinoma, two had Kaposi's sarcoma, and one case of nasopharyngeal carcinoma. There were 2 patients with pre-malignant conditions and 10 patients with benign lesions. Thirty-two of the patients had exenterations, sixteen had excisional biopsies, and one had enucleation. Seventy eight percent of the tumors were malignant. **Conclusion:** Most of the orbito-ocular tumors seen in this study were malignant. Delayed hospital presentation is a characteristic feature. Retinoblastoma and squamous cell carcinoma are the most common orbito-ocular tumors.

Key words: Exenteration, malignant, orbito-ocular tumors, retinoblastoma

INTRODUCTION

Orbital and ocular tumors are common in our environment and they are a significant cause of morbidity and mortality.^[1-5] These tumors arise as primaries from orbital and ocular tissues or spread from contiguous anatomic structures like the paranasal sinuses, nasopharynx, brain, and as secondaries from distant metastases.^[6] The histopathological characteristics of these tumors are critical to their biologic behavior, line of management, outcome, and prognosis.^[2]

Patients in this series presented late with advanced diseases often after seeking trado-medical care elsewhere.^[2] Some patients were referred from other hospitals in northern Nigeria for radiotherapy and oncology services.^[4,7]

This study includes both children and adults. Malignant tumors in children and adults are biologically and histologically distinct.^[2] The clinico-pathological pattern of childhood orbito-ocular tumors in a similar environment has been reported by Abdul,^[4] and Abiose *et al.*,^[5] while Onwasigwe,^[8] and Chuka-Okosa^[3] studied same in eastern Nigeria and Anunobi *et al.*,^[9] Ajayeoba *et al.*,^[10] Bekibele and Oluwasola,^[11] and Olurin^[12] had all reported on orbito-ocular tumors in western Nigeria.

MATERIALS AND METHODS

The surgical records of all patients who underwent treatment for orbito-ocular tumors during the period of study from June 2006 to June 2011 were retrieved and

Access this article online

Quick Response Code:



Website:

www.ccij-online.org

DOI:

10.4103/2278-0513.102883

Address for correspondence: Dr. Emmanuel R. Abah, Department of Ophthalmology, Ahmadu Bello University Teaching Hospital, Shika-Zaria, Nigeria. E-mail: emmanabah@yahoo.com

analyzed. Information on patient demographics, clinical diagnoses, radiological and sonological investigations, surgery performed, and histological reports were analyzed.

Information on adjuvant chemotherapy and radiotherapy were also included where indicated.

RESULTS

A total of 54 patients with orbito-ocular tumors were managed during the period under review. Forty-nine patients had histologically proven diagnoses. Five patient's histology reports could not be traced and were excluded from the study. There were 29 males and 20 females giving a male to female ratio of 1.8:1. The age-range was 1.5-74 years with a mean of 22 years [Table 1]. Thirty-seven cases were malignant (75.5%), three cases were pre-malignant (6.0%), and eleven were benign lesions (20.3%). Malignant lesions include 18 cases of retinoblastoma (36.7%), 11 squamous cell carcinoma (22.4%), 3 rhabdomyosarcoma (6.1%), and 2 Kaposi' sarcoma (4.0%) [Table 2]. Thirty-six patients had exenterations (73.4%), 11 had excisional biopsies (22.4%),^[1] had incisional biopsy, and 1 enucleation [Figure 1].

DISCUSSION

Orbito-ocular tumors are a common cause of morbidity and mortality, often presenting as unsightly fungating orbital masses.^[1-16] In our setting, accurate diagnosis is usually difficult and complex due to the inability of Computerized

Tomography Scan (CT-Scan), Magnetic Resonance Imaging (MRI), and B-Scan Ultrasonography to provide tissue diagnosis for orbito-ocular tumors.^[17] Fine Needle Aspiration Biopsy and Cytology has also not been helpful, thus necessitating surgery in all our cases.^[18]

In this study, retinoblastoma was the most common malignant tumor (36.7%) with age-range of 1.5-8 years and mean of 3.25 years. This is in agreement with previous studies in the center and other studies in Nigeria,^[1,3-5,7-15] Africa,^[16] India,^[19,20] and Nepal.^[21]

Squamous cell carcinoma turned out to be the second most common orbito-ocular tumor accounting for 22.4% of cases. This is also in keeping with the earlier study by Mohammed *et al.* in Zaria^[1] and other studies in Kaduna,^[5] Ibadan,^[10,11] Benin,^[14] Ilorin,^[13,15] Uganda,^[16] and India,^[19,20] respectively.

Rhabdomyosarcoma was the histological diagnosis in 6% of cases. Of interest is a 21-year-old patient who presented with orbital rhabdomyosarcoma even though the average age of presentation is usually 7-8 years.^[1] This highlights the late presentation of patients, which poses diagnostic difficulties.

There were two cases of Kaposi' sarcoma associated with Human immunodeficiency virus infection/Acquired immunodeficiency syndrome (HIV/AIDS)^[22] and one case each of metastatic nasopharyngeal carcinoma^[23] and recurrent pleomorphic adenoma of the lacrimal gland.^[24] There was, however, no case of orbital Burkitt's lymphoma in this series. This is contrary to the previous report by Mohammed *et al.*^[1] The two cases of conjunctival intra-epithelial neoplasia seen is also contrary to a report from Ilorin.^[13]

Benign lesions constituted 22.3% of the cases reviewed. These were mostly fibro-epithelial polyps and lipodermoid cysts (10.2%) and hemangioma (6.1%). Of particular interest,

Table 1: Age-Sex distribution of patients

Age-range (years)	M	F	Total (%)
1-10	16	6	22 (44.8)
11-20	1	1	2 (4.0)
21-30	6	6	12 (24.4)
31-40	1	6	7 (14.2)
41-50	1	0	1 (2.0)
51-60	2	1	3 (6.1)
>61	2	0	2 (4.0)
Total	29	20	49 (100)

Table 2: Histopathology of orbito-ocular tumors

Histological Diagnoses	No (%)
Retinoblastoma	18 (36.7)
Squamous cell carcinoma	11 (22.4)
Rhabdomyosarcoma	3 (6.1)
Hemangioma	3 (6.1)
Kaposi' sarcoma	2 (4.0)
Conjunctival intra-epithelial neoplasia	2 (4.0)
Meningioma	2 (4.0)
Basal cell carcinoma	1 (2.0)
Metastatic nasopharyngeal carcinoma	1 (2.0)
Recurrent lacrimal pleomorphic adenoma	1 (2.0)
Primary orbital melanoma	1 (2.0)
Fibro-epithelial polyps/lipodermoid cysts	5 (10.2)
Total	49 (100)

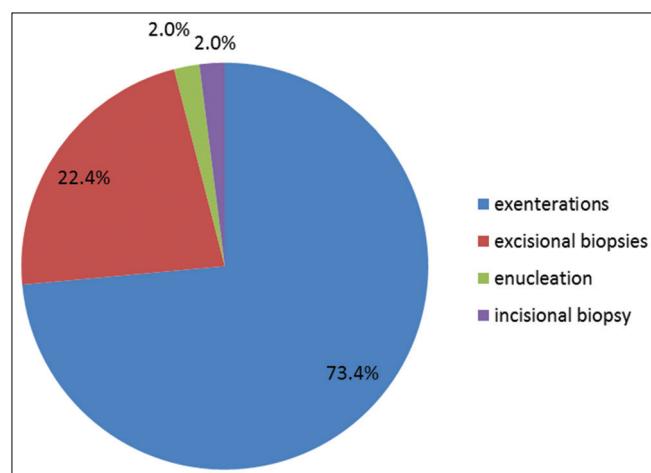


Figure 1: Surgeries performed

however, is the case of a 5-year-old girl with primary pediatric orbital melanoma with ocular melanocytosis, which to the authors' knowledge, has not been reported in this part of the country previously.^[25]

All patients with histologically proven malignancies were referred to the radiotherapy-oncologist for chemotherapy and radiotherapy. More than 90% of those presenting to the oncologist were only given palliative external beam radiotherapy on account of advanced stage of presentation. High-tech facilities for curative treatment of these patients are nonexistent in our facility. Children were co-managed with the pediatric oncology team for chemotherapy and other co-morbidities.

CONCLUSION

Most of the patients in this series presented late with fungating unsightly tumors. Retinoblastoma and squamous cell carcinoma are most common orbito-ocular tumors. Exenteration was performed more often in view of the delayed presentation and the need for tissue diagnosis for further adjuvant chemotherapy and radiotherapy. Radiotherapy/oncology services should be made more available and affordable nationwide and the few available ones be upgraded so that world class services can be rendered to all our patients.

There is an urgent need for awareness creation to ensure early presentation. There is also a need to provide access to alternative cancer funding scheme or special exemption for these patients since the National Health Insurance Scheme (NHIS) does not provide coverage for orbito-ocular tumors.

REFERENCES

- Mohammed A, Ahmed SA, Ahmedu NE, Maisamari JS. Orbito-ocular malignant tumours in Zaria, Nigeria: A 10 year review. Ann Afr Med 2006;5:129-31.
- Samaila MO. Malignant tumours of childhood in Zaria. Afr J Paediatr Surg 2009;6:19-23.
- Chuka-Okosa CM. Orbito-ocular Neoplasms in Enugu, Nigeria. West Afr J Med 2008;27:144-7.
- Abdu L, Mohammed AZ. Clinico-pathological pattern of childhood orbito-ocular Tumours: A five year review. Niger J Basic Clin Sci 2006;3:17-21.
- Abiose A, Adido J, Agarwal SC. Childhood Malignant Tumours of the eye and orbit in Northern Nigeria. Cancer 1985;55:2889-93.
- Deshpande RB, Deodhar LP. Ocular and orbital tumours and tumour-like lesions- a clinico-pathological study of 64 cases. J Postgrad Med 1977;23:84-8.
- Askira B, Ngadda HA. Orbito-ocular malignancies in Maiduguri, Northeastern Nigeria. Internet J Ophthalmol Visual Sci 2007;5.
- Nwasigwe EN. Orbito-ocular tumours in Nigerian Children. J Coll Med 2002;7:101-2.
- Anunobi CC, Akinsola FB, Abdulkareem FB, Aribaba OT. Orbito-ocular lesions in Lagos. Niger Postgrad Med J 2008;15:146-51.
- Ajaiyeoba IA, Pindiga HU, Akang EE. Tumours of the eye and orbit in Ibadan. East Afr Med J 1992;69:487-9.
- Bekibele CO, Oluwasola AO. A clinico-pathological study of orbito-ocular diseases in Ibadan. Afr J Med Sci 2003;32:197-202.
- Olorun O. Orbito-ocular tumours in Nigeria. Cancer 1972;30:580-7.
- Mahmoud AO, Buari MB, Adekoya SC. Pattern of orbito-ocular tumours in Ilorin, Nigeria. Trop J Health Sci 2007;1:23.
- Omoti AE. Histopathology of ocular tumour specimens in Benin City. J Ophthalmol Vis Res 2009;4:232-7.
- Owoeye JF, Afolayan EA, Ademola Popoola AS. Retinoblastoma- a clinico-pathological study in Ilorin, Nigeria. Afr J Health Sci 2006;13:117-23.
- Dhiruka R. The prevalence and pattern of ocular and orbital tumours in patients attending Mulago Hospital Eye Department. Uganda: Master's thesis, Makerere University; 1992.
- Tejas K, Mathew C. Role of MRI and CT-Scan in ocular and orbital diseases. Kerala J Ophthalmol 2009;21:431-41.
- Roozitalab MH, Farvadin M, Kumer PV, Egheledari M. Fine needle aspiration cytology of intraocular, orbital and eyelid lesions. Int J Mol Sci 2006;31:74-8.
- Sunderaj P. Malignant tumours of the eye and adnexa. Indian J Ophthalmol 1991;39:6-8.
- Pushker N, Kashyap S, Balasubramanya R, Bajaj MS, Sen S, Betharia SM, et al. Pattern of Orbital exenteration in a tertiary eye care centre in India. Clin Experiment Ophthalmol 2004;32:51-4.
- Lavaju P, Arya SK, Sinha A, Pandey S, Adhikari S, Shrestha BG, et al. Pattern of ocular tumours in the eastern region of Nepal. Nepal J Ophthalmol 2009;1:9-12.
- Cunningham ET, Margolis TP. Ocular manifestations of HIV infection. N Engl J Med 1998;339:236-44.
- Hsu WM, Wang AG. Nasopharyngeal carcinoma with orbital invasion. Eye 2004;18:833-8.
- Reddy SC, Das PK. Tumours and tumour-like lesions of the Eye: A Clinico-pathological study from hospital university Sains, Malaysia. Malays J Pathol 1996;18:113-20.
- Lee V, Sandy C, Rose GE, Moseley IM, Cree I, Hungerford JL. Primary orbital Melanoma masquerading as vascular anomalies. Eye (Lond) 2002;16:16-20.

Cite this article as: 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 Investig J 2012;1:145-7.

Source of Support: Nil, **Conflict of Interest:** No.