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

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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.⁷

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 Abdul⁴ and Abiose et al.,⁵ while Onwasigwe,⁴ and Chuka-Okosa⁵ studied same in eastern Nigeria and Anunobi et al.,⁹ Ajayeoba et al.,¹⁰ Bekibeley and Oluwasola,¹¹ and Olurin¹² 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
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’s 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’s 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. 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,
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**