ORIGINAL RESEARCH PAPER

Education

KEY WORDS: Kaduna, Tumours, Orbito-ocular.

THE PATTERN OF ORBITO-OCULAR TUMORS IN KADUNA, NORTH WESTERN NIGERIA

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ABSTRACT

INTRODUCTION: Orbito-ocular tumours embrace neoplasia affecting all the tissues of the eye ball, the orbit with its contents and the ocular adnexae. Neoplasia in this rpart of trhe body can either be benign or malignant, primary, secondary or metastatic. Kaduna State is one of the states in the North-western part of Nigeria; a part of Nigeria that is dry, sunny and dusty most of the year. Demographic studies of orbito-ocular neoplasia in this state are a few and scanty

AIM: The aim of this study is to do a demographical analysis of the various histologically confirmed orbito-ocular neoplasia in Kaduna State

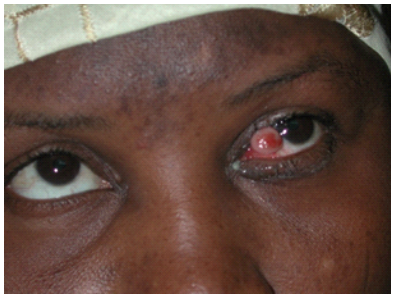
METHODOLOGY: This is a 5-years retrospective study spanning from January 2001 to December 2005 of 130 histologically confirmed cases of Orbito-ocular tumours retrieved from the laboratories of the Army Reference Hospital Kaduna and the Ahmadu Bello University Teaching Hospital Zaria. Analysis was done along the lines of the most common tumours, the age and sex distribution and the commonest tissue involved, using the Epi-info 6. The various orbito-ocular tissues and the histological diagnoses were all coded for easy data processing.

RESULTS: Out of the 130 orbito-ocular tumour cases reviewed 70 (54%) were females and 60 (46%) were male. The most affected age group was between the ages of 17-49 (45%). The commonest tissue involved in the study was the conjunctiva with 59 (45.4%) cases. Histo-pathologically, squamous cell carcinoma was the commonest orbito-ocular tumour in this study with 46 (35.4%) cases while 31 cases(23.8%) out of the 130 cases had retinoblastoma.

CONCLUSION: Orbito-ocular tissues can be involved in neoplastic changes and in our environment these pose serious challenges to both vision and life of the patients, particularly if neglected. In our study the conjunctiva was the most affected tissue, the males were less affected in our study in other studies.

INTRODUCTION

Orbito-ocular tumors refer to tumors or neoplasia affecting the orbital and ocular tissues of the eye. Tumors in this area like all tumors of head and neck, pose serious challenges to the both sight and life of the patient. Tumors in these areas can either be benign or malignant [1]. They can either by primary tumors or secondary tumors. The local and systemic morbidities of orbito-ocular tumor are challenging and often times culminate to sight and even life threatening consequences. The demographical studies of these tumors in Kaduna State, and even Nigeria in general, are just a few and scanty.



Picture1: Conjunctival Squamous Cell Carcinoma Lt Eye

Picture 2: Retinoblastoma Rt. Eye

Picture 3: Orbito-ocular Squamous Cell Carcinoma Rt. Eye

AIM AND OBJECTIVES

The aim of the study therefore is to do a demographical analysis of the various histologically confirmed orbito-ocular neoplasia in Kaduna State. Nigeria.

METHODOLOGY

This is a 5-years retrospective study spanning from January 2001 to December 2005 of 130 histologically confirmed cases of Orbito-ocular tumors retrieved from the laboratories of the Army Reference Hospital Kaduna and the Ahmadu Bello University Teaching Hospital Zaria. Analysis was done along the lines most common tumors, the age and sex distribution and the commonest tissue affected, using the Epi-info 6. The various orbito-ocular tissues and the histological diagnoses were all coded for easy data processing.

RESULTS

Out of the 130 orbito-ocular tumor cases reviewed 70 (54%) were females and 60 (46%) were male. The most affected age group was between the ages of 17-49 (45%) followed by that between the ages of 0 and 16 (35%). Those between the ages 50 and above were least affected with only 26 cases (20%). The commonest tissue involved in the study was the conjunctiva with 59 (45.4%)

cases out of the 130 cases, followed by intra-ocular tumors (eyeball) with 38 (29.2%) cases. Histo-pathologically, squamous cell carcinoma was histo-pathologically the commonest orbito-ocular tumor in this study with 46 (35.4%), cases followed by retinoblastoma 31 (23.8%). 29 females (22.3%) had squamous cell carcinoma while only 17 (13.07%) males had squamous cell carcinoma in this study.

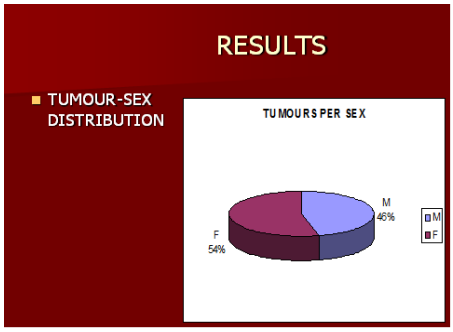


Fig. 1:TUMOR –SEX DISTRIBUTION

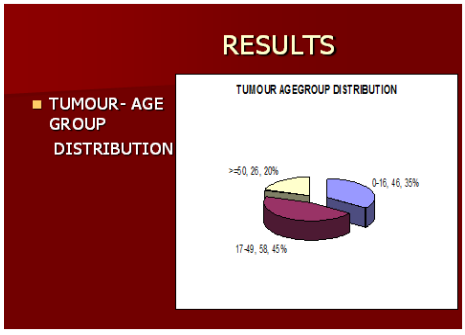


Fig.2:TUMOR - AGE GROUP DISTRIBUTION

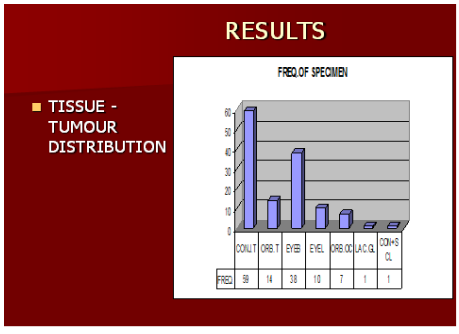


Fig. 3 & TABLE 1: TISSUE- TUMOR DISTRIBUTION

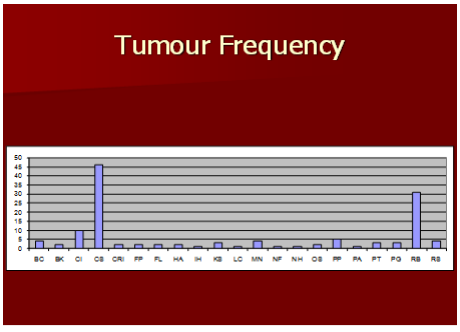


Fig. 4 TUMOUR FREQUENCY DISTRIBUTION

TABLE 2 :TUMOR-FREQUENCY DISTRIBUTION

TUMOUR TYPE	NUMBER OF EYES	%
CS = SQUAMOUS CELL CA	7	36.1%
RB = RETINOBLASTOMA	2	24.6%
CI = CARCINOMA INSITU	0	7.7%
PP = PAPILOMA	5	3.8%
RS = RHABDOMYOSARCOMA	4	3.1%
BC = BASAL CELL CA	4	3.1%
MN = MELANOMA	4	3.1%
KS = KAPOSI SARCOMA	3	2.3%
OTHERS	1	16.2%
TOTAL	130	100%

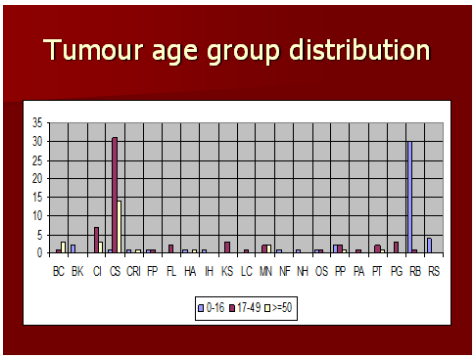


Fig. 5 – TUMOUR – AGE GROUP DISTRIBUTION

TABLE 3: TUMOUR - AGE GROUP DISTRIBUTION

TUMOUR	AGE GROUP	NUMBER	%
CS	0-16 YRS	2	4.3%
	17-49 YRS	32	68.1%
	50 AND ABOVE	13	27.7%
CI	0-16 YRS	0	0.0%
	17-49 YRS	7	70.0%
	50-ABOVE	3	30.0%
RB	0-16 YRS	30	93.8%
	17-49 YRS	2	6.2%
	50 – ABOVE	0	0.0%
PP	0-16	2	40.0%
	17-49 YRS	2	40.0%
	50-ABOVE	1	20.0%
RS	016 YRS	4	100.0%
	17-49 YRS	0	0.0%
	50-ABOVE	0	0.0%
BC	0-16 YRS	0	0.0%
	17-49 YRS	1	25.0%
	50-ABOVE	3	75.0%
KS	0-16 YRS	0	0.0%
	17-49 YRS	3	100.0%
	50-ABOVE	0	0.0%
OTHERS -		-	-

TABLE 4: ORBITO-OCULAR TISSUE CODE DEFINITIONS

CONJ	= CONJUNCTIVIAL TUMOURS
ORB	= ORBITAL TUMOURS
EYE B	= EYE BALL = INTRA-OCULAR TUMOURS
EYE L	= EYELID
ORB.OC	= ORBITAL AND OCULAR TUMOUR
LAC. GL	= LACRIMAL GLANDS
CONJ+S	= CONJUNCTIVAL + SCLERA

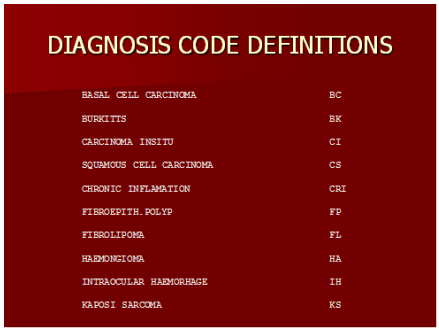


TABLE 5A- HISTOLOGICAL DIAGNOSIS DEFINITION CODES

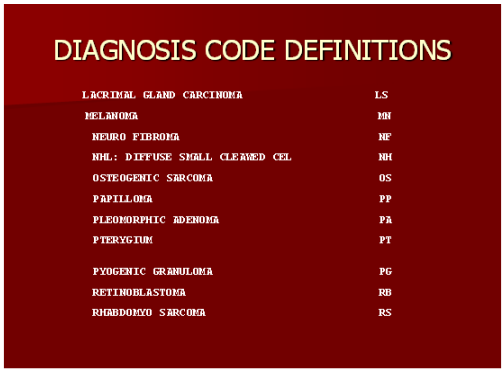


TABLE: 5B- HISTOLOGICAL DIAGNOSIS DEFINITION CODES

DISCUSSIONS

Orbito-ocular neoplasia are neoplasia of both the eyeball with its contents, the orbit with its contents and the adnexal tissues. The morbidity and mortalities of the orbito-ocular neoplasia are a serious concern particularly when left without early or no intervention. In our environment the presentation is late and the consequences usually are dire with threats to life and vision. Orbito-ocular tumours may either be benign or malignant [1]. They may be primary, secondary (due to extensions to immediate structures) or metastatic (from distant structures)[1,2]. Orbital tumors are lesions whose commonest presentation is exophthalmos. The orbit alone has a variety of tissues that are capable of undergoing neoplasitic changes. For instance, bony tissues of the orbit can be involved with osteogenic sarcoma, particularly seen in post-irradiation treatment as in retinoblastoma treatment, giant cell tumor of the orbit, etc [3,4]. The periosteum of the orbit as innocent as it appears, can also undergo some tumorous growths like the idiopathic inflammatory condition known as infantile cortical hyperostosis (Caffey disease) seen in children [4], while the cartilaginous structures in the orbit including the trochlear can undergo chondrosarcomatous changes as well [4]. The vascular structures of in the orbit are not spared either as tumors such as hemangeomas (capillary in children and cavernous in adults) are also possible vascular tumors of the orbit [4].Ocular tumors can involve almost all the eyeball structures. For instance, the commonest intraocular tumors of childhood elsewhere include retinoblastoma, medulloepithelioma, congenital hypertrophy of the retinal pigment epithelium, congenital melanocytosis, etc [4, 5]. There is a number of ocular surface neoplasia documented as well, including the squamous cell carcinomas, etc. The lids and the lacrimal drainage systems are also not spared. For instance the lids have numerous tissues capable of undergoing neoplastic changes including neurofibromas and neurofibromatosis, basal cell carcinomas, etc. Neurofibromatosis can involve the extra-ocular muscles, the lacrimal glands and even the orbital fats [4]. The nerves of the orbito-ocular tissues can be involved in neoplastic activities. For instance, apart from neurofibromatosis, other nerve tumors of the orbital region include the optic nerve meningiomas and the optic nerve gliomas [4].

All ages, just like sexes, are involved in orbito-ocular tumors or neoplasia. In our study, the age group between 17 and 49 years presented more with orbito-ocular tumors (45%) as compared with the other age groups (Fig.2). In this study also, the commonest tumor histologically was the squamous cell carcinoma occurring in 35.4% .This is at variance with studies conducted in other places [3, 8, 12, and 13] in which retinoblastoma was found the most common tumor. In our study retinoblastoma came second with 23.8% of all cases of the orbito-ocular tumors (Fig. 4 & Table: 2). The conjunctiva in this study was the most common orbito-ocular tissue involved (see Fig:3 & Table :1) in the neoplastic activities (45.4%). In our study also, there was slightly more female affectation of 54% against the males affectation of 46% (see fig:1). This in agreement with a study carried out in Enugu by C M Chuka-Okosa et al [7] but at variance with many other studies in Nigeria where males were found to be more affected than female[8, 9, 10, and 11]. Squamous cell carcinoma of the orbito-ocular tissue is found most commonly in the immune-compromised patients like the HIV patients [14, 15]. In our study, most cases that had squamous cell carcinoma fell in the age group between 17 and 49 years (see Fig:5 & Table:2) which is the age group that has been mostly implicated in HIV disease world-wide [14,15].

SUMMARY AND CONCLUSION

Orbito-ocular tumors are a serious challenge world-wide affecting all ages and sexes. Almost all the orbito-ocular structures and tissues can be affected. In our study the age group mostly affected is the group between 17 and 49 years (45%) suggesting that the most vulnerable class is the fairly productive age group. This means a pointer to the fact that more aggressive early case finding should be emphasized in our environment and possible research aimed at identifying the commonest causes of the neoplasia should be encouraged. In our study also the conjunctiva was the most vulnerable tissue suggesting more exposure to external factors like sun irradiations, dust, etc. The assertion that exposure to irradiation increases the chances of conjunctival tumors like squamous cell carcinoma is made elsewhere also[6]. This will therefore encourage us to impress upon the population here to use protective sunglasses at least. Histo-pathologically in our study, it was also discovered that squamous cell carcinoma was the commonest histologically confirmed neoplasm. Exposure to ultraviolet irradiation and HIV infection has been implicated as risk factors for squamous cell carcinoma, particularly of the conjunctiva [6]. A study aimed at implicating the most common cause of this neoplasm in our environment will go a long way in understanding the disease and reducing its prevalence here.

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