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HISTOPATHOLOGICAL SPECTRUM OF EYELID TUMOURS, A SINGLE CENTRE EXPERIENCE OVER A 12 YEAR PERIOD

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ABSTRACT: Tumours of the eyelid are relatively rare, and can cause obvious challenges and significant morbidity. Benign and malignant tumours can originate from structural elements of the eyelid. This study aims to identify and describe the histopathological pattern and distribution of eyelid tumours in our environment. All eyelid tumours from the records and files of the Department of Morbid Anatomy, University of Benin Teaching Hospital (UBTH) over a study period spanning from January 1, 2003 to December 31, 2014 were reviewed. Age, gender, and nature of specimen and histological diagnosis were reviewed and subsequently classified using the current World Health Organisation Histologic Classification of Eye. Fourth Edition 2018. A total of 45 cases were seen over the study period, with 24 males (53.3%) and 21 females (46.7%), giving a ratio of 1:1.1. Their ages ranged from 1 - 84 years with an overall median age of 28 years. The age groups of less than 20 years, second and third decades were most affected accounting for 37.8%, 31.1% and 15.6% respectively. Majority of the eyelid tumours were benign with epidermal cyst and pyogenic granuloma 9 (20.0%) each. Eyelid tumours affect all age groups with a slight male predominance and bimodal peaks in the first and third decades. Benign tumours were significantly commoner than malignant tumours. Epidermal cyst and pyogenic granuloma were the most prevalent amongst all tumours seen.

Key words: Eyelid, tumours, Histopathological pattern.

INTRODUCTION

The eyelid is composed of skin and its adnexa, striated muscles, tarsus Meibomian glands, and the palpebral conjunctiva. Tumours arising from any of these structures constitute a significant proportion of eyelid lesions with most of them originating from the cutaneous layer, especially the epidermis. They constitute the most common neoplasm in daily ophthalmology practice.[1] Benign and malignant tumours can originate from these structural elements of the eyelid. Research findings in Nigeria show that the eyelid is not the most common sites for orbito-ocular tumours. Although, a previous study in Benin revealed that the commonest site for orbito-ocular tumours was the conjunctiva (55.9%), followed by intraocular tumours (24.7%).[2] Eyelid tumours were found to be the fourth commonest (11%) of orbito-ocular tumours in Lagos,[3] while eyelid tumours constituted only 5.6% of orbito-ocular tumours in

Ibadan.[4]The trend however appears to differ in Asia. According to reports in India and Malaysia, the eyelids are found to be the most frequent site for ophthalmic tumours.[5, 6] A report from Thailand shows the eyelids to be the second commonest site of ocular malignancies (27.8%).[7]

Findings as to the most commonly reported eyelid tumours vary widely from inflammatory pseudotumours in Benin (33.3%),[2] to dermoid cyst in India (21%),[6] to naevi and squamous cell papillomas in Taiwan (36.8%).[8] Studies in Japan and Thailand show that over 70% of eyelid tumours are benign, with the tendency to developing malignancies increasing with advancing age.[9, 10] A Chinese study reports 86.2% of 2,639 eyelid lesions analyzed, to be benign,[11]while a Taiwanese study reported 87.5%.[8] This overwhelming preponderance of the benign eyelid lesions over the malignant is replicated in studies from Europe (for instance, 84% in Switzerland).[12] This study aims to identify and describe the histopathological pattern and distribution of eyelid tumours in our environment.

MATERIALS AND METHODS

This was a descriptive retrospective study. All tumours documented in the files and records of the Department of morbid Anatomy, University of Benin Teaching Hospital (UBTH), Benin-City from January 1, 2003 to December 31, 2014 were reviewed. Age, gender, site, and nature of specimen and histological diagnosis were reviewed. The cases were reviewed by… independently and via a consensus where there was divergent opinion. The initial histological review was archival slides and then on newly sectioned haematoxylin and eosin stained slides. Cases with incomplete bio data or where histopathology section were not available for review were excluded from the study. The tumours were subsequently classified using the current World Health Organisation Classification of Eye. Fourth Edition 2018.

Descriptive statistics was performed on the data generated and frequencies, mean and ranges using the Statistical Package for Social Sciences (SPSS) version 16. This study was conducted in compliance with the guidelines of the Helsinki declaration on biomedical research in human subjects. Confidentiality of the identity of the patients and personal health information was maintained as no name identifier was used in retrieving the cases from the records. Approval for this study was obtained from the Ethics and Research

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Committee of the University of Benin Teaching Hospital, Benin-City, Edo State, Nigeria.

RESULTS

General:

A total of 231 specimens were of the eye and its adnexa structures from which 45 (24.6%) specimen met the inclusion criteria and were selected for the study.

Tumours of the Eyelid

Eyelid tumours had a peak frequency of occurrence in the 2nd and 3rd decades, affecting 21 (46.7%) females and 24 (53.3%) male with a female to male ratio of 1:1.1. Epidermal cyst and Pyogenic granuloma (exuberant granulation type) were the most prevalent and each accounted for 9 (20.0%) with the highest rates occurring in the second and third decades of life respectively. This was closely followed by dermoid cyst (7 cases; 15.6%), and retention cyst (3 cases; 6.7%). Malignant lesions seen included Kaposi sarcoma (2; 4.4%) and basal cell carcinoma (1 case 2.2%) (**Tables 1**).

Table 1: Frequency of Histological type of eyelid tumours

Site	No. of Cases/% of Total Cases	Histological Type	Frequency	% of Total Cases
Eyelid	45/100%			
		Benign		
		Epidermal cyst	9	4.9%
		Pyogenic granuloma	9	4.9%
		Dermoid cyst	7	3.8%
		Retention cyst	3	1.6%
		Hydrocystoma	2	1.1%
		Lipoma	2	1.1%
		Capillary haemangioma	2	1.1%
		Squamous cell papilloma	1	0.5%
		Papillary syringadenoma	1	0.5%
		Compound naevus	1	0.5%
		Traumatic neuroma	1	0.5%
		Plexiform neurofibroma	1	0.5%
		Angiomyoma	1	0.5%
		Cavernous haemangioma	1	0.5%

Site	No. of Cases/% of Total Cases	Histological Type	Frequency	% of Total Cases
		Malignant		
		Kaposi sarcoma	2	1.1%
		Haemangiopericytoma	1	0.5%
		Basal cell carcinoma	1	0.5%

Table 2: Sex distribution of eyelid tumours

	Sex			
	Female		Male	
	N	(%)	N	(%)
Squamous cell papilloma			1	(100.0%)
Papillary syringadenoma			1	(100.0%)
Hydrocystoma	2	(100.0%)		
Retention cyst	2	(66.7%)	1	(33.3%)
Epidermal cyst	3	(33.3%)	6	(66.7%)
Compound naevus	1	(100.0%)		
Basal cell carcinoma	1	(100.0%)		
Dermoid cyst	4	(57.1%)	3	(42.9%)
Lipoma	1	(50.0%)	1	(50.0%)
Angiomyoma			1	(100.0%)
Capillary haemangioma	1	(50.0%)	1	(50.0%)
Cavernous haemangioma			1	(100.0%)
Pyogenic granuloma (exuberant granulation type)	5	(55.6%)	4	(44.4%)
Kaposi sarcoma	1	(50.0%)	1	(50.0%)
Haemangiopericytoma			1	(100.0%)
Traumatic neuroma			1	(100.0%)
Plexiform neurofibroma			1	(100.0%)
Total	21(100.0%)			
	24(100.0%)			

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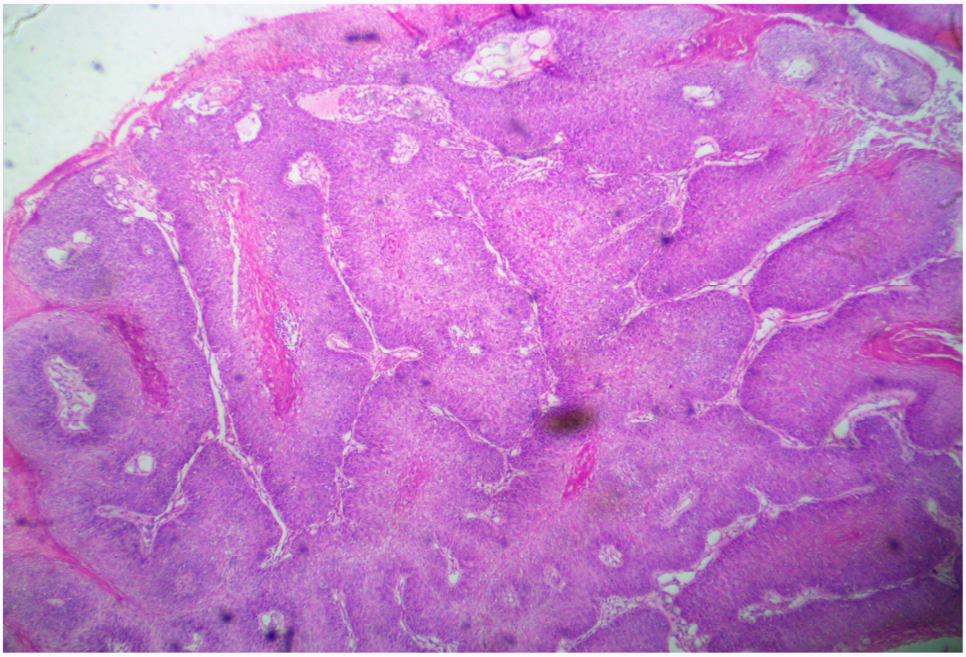
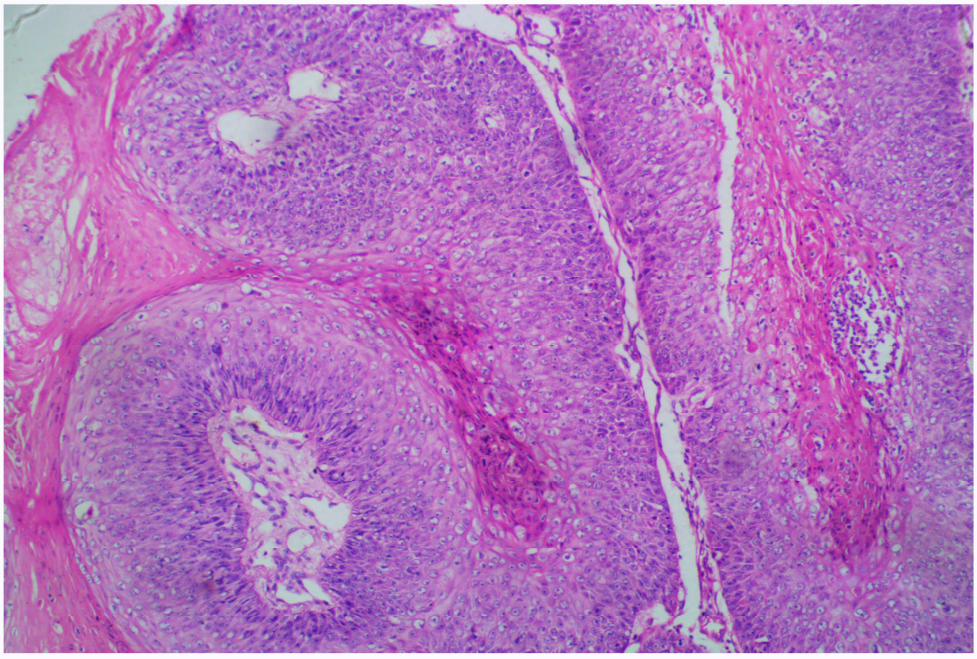
Table 3: Age distribution of eyelid tumours

Diagnosis	Age group (years)												Total	
	< 20		20 - 29		30 - 39		40 - 49		50 - 59		60+			
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Squamous Cell papilloma	-		1	(100.0%)	-	-	-	-	-	-	-	-	1	(100.0%)
Papillary Syringadenoma	-	-	1	(100.0%)	-	-	-	-	-	-	-	-	1	(100.0%)
Hydrocystoma	-	-	1	(50.0%)	1	(50.0%)							2	(100.0%)
Retention cyst	-	-	1	(33.3%)			1	(33.3%)	1	(33.3%)			3	(100.0%)
Epidermal cyst	-	-	3	(33.3%)	2	(22.2%)	1	(11.1%)					9	(100.0%)
Compound naevus	1	(100.0%)	-	-	-	-	-	-	-	-	-	-	1	(100.0%)
Basal cell carcinoma	-	-	-	-	-	-	-	-	-	-	1	(100.0%)	1	(100.0%)
Lipoma	1	(50.0%)	1	(50.0%)	-	-	-	-	-	-	-	-	2	(100.0%)
Angiomyoma	-	-	1	(100.0%)	-	-	-	-	-	-	-	-	1	(100.0%)
Capillary Haemangioma	1	(50.0%)	1	(50.0%)	-	-	-	-	-	-	-	-	2	(100.0%)
Cavernous haemangioma	-	-	-	-	-	-	-	-	-	-	1	(100.0%)	1	(100.0%)
Pyogenic granuloma	5	(55.6%)	2	(22.2%)	1	(11.1%)			1	(11.1%)			9	(100.0%)
Kaposi Sarcoma	-	-	1	(50.0%)	1	(50.0%)	-	-	-	-	-	-	2	(100.0%)
Haemangiopericytoma	1	(100.0%)	-	-	-	-	-	-	-	-	-	-	1	(100.0%)
Traumatic neuroma	1	(100.0%)	-	-	-	-	-	-	-	-	-	-	1	(100.0%)
Plexiformneurofibroma	1	(100.0%)	-	-	-	-	-	-	-	-	-	-	1	(100.0%)
Dermoid cyst	3	(42.9%)	1	(14.3%)	2	(28.6%)	-	-	-	-	1	(14.3%)	7	(100.0%)
Total	17	(37.8%)	14	(31.1%)	7	(15.6%)	2	(4.4%)	2	(4.4%)	3	(6.7%)	45	(100.0%)



a



b

Figure 3: Squamous cell papilloma of the conjunctiva from a 40-year old man showing normal maturation sequence of squamous cells proliferating in papilary fronds with prominent fibrovascular core (H & E: A x 100, B x 400)

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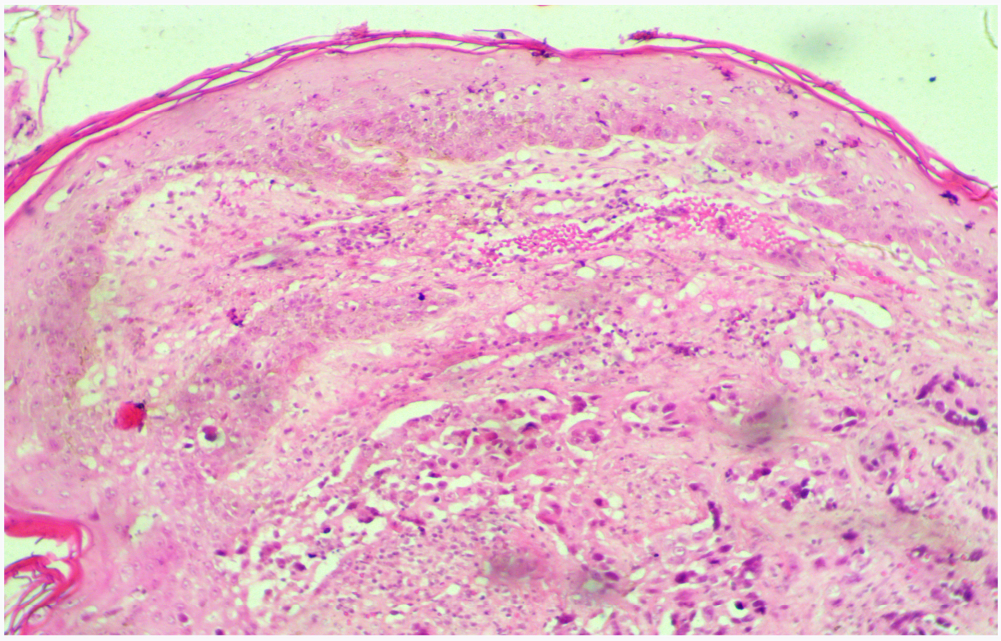
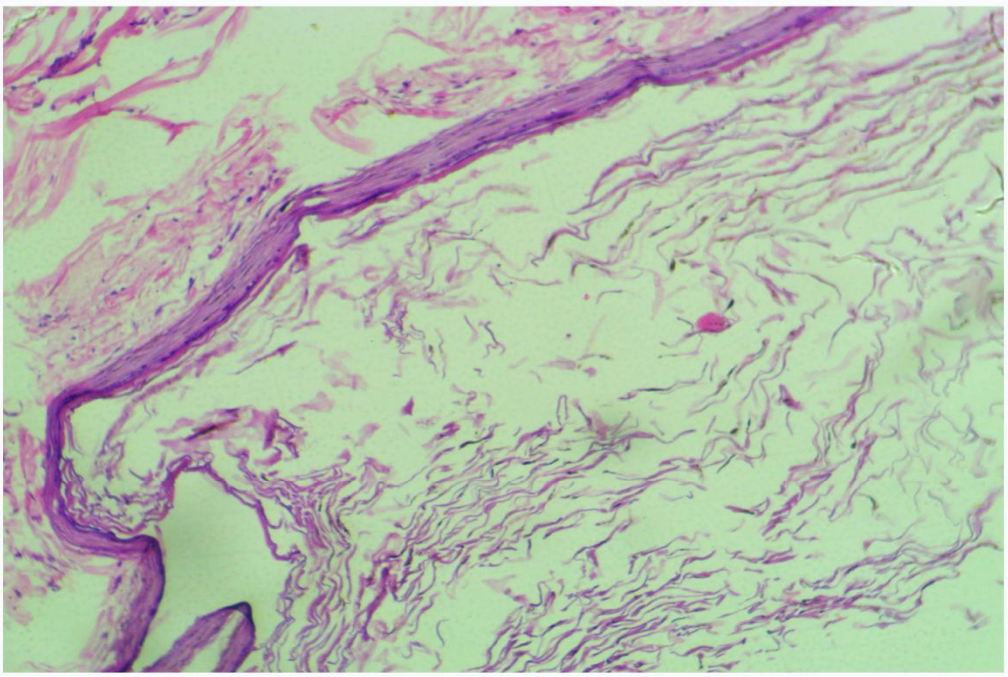


figure 4 :Squamous cell carcinoma of the eyelid from a 60-year old man showing infiltration of the dermis by dysplastic squamous cells in cords ,nests and trabeculae,with extensive demoplasia of stomal tissue (H& E: x 400)



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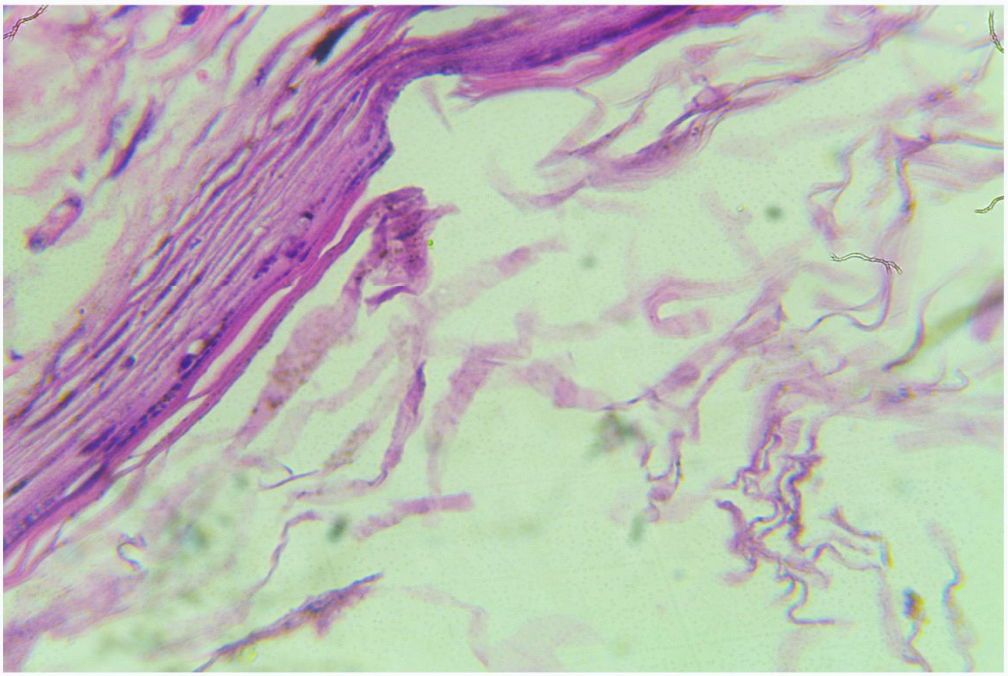

B

Figure 6: Epidermal cyst of the upper eyelid in a 42-year old woman. The cyst wall is lined by squamous epithelium and contain strands of laminated keratin within its cavity. (H & E;A x 100, B x 400)

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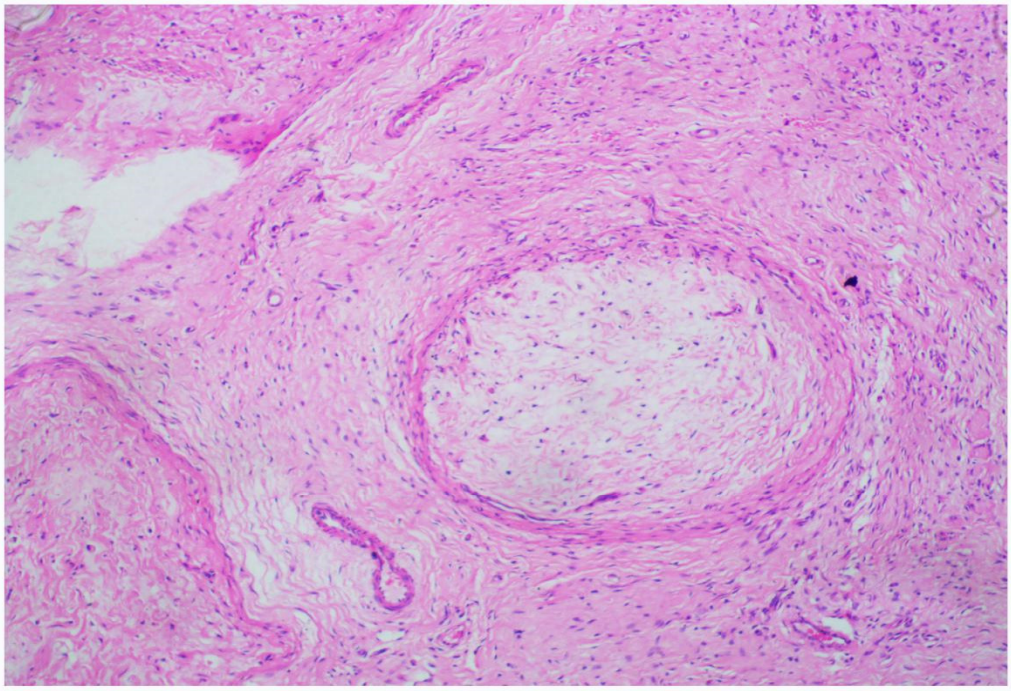

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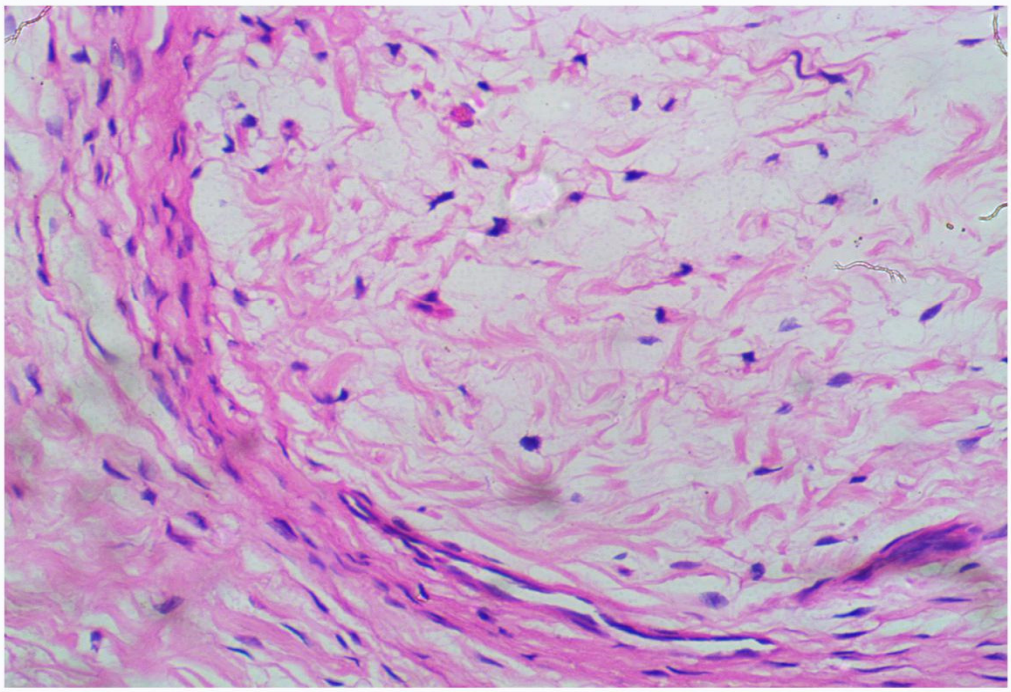
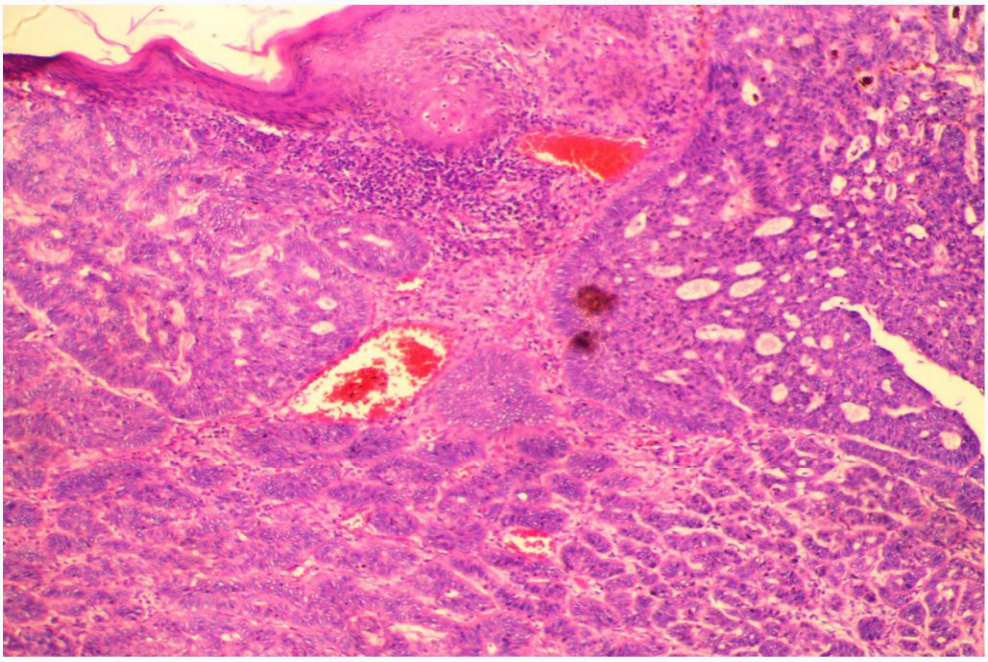


B

Figure 7: Plexiform neurofibroma of the left upper eyelid in an 11-year old boy. The nuclei of the tumour cells shows typical pattern of growth and sapentine shape.(H & E;100, BX400)



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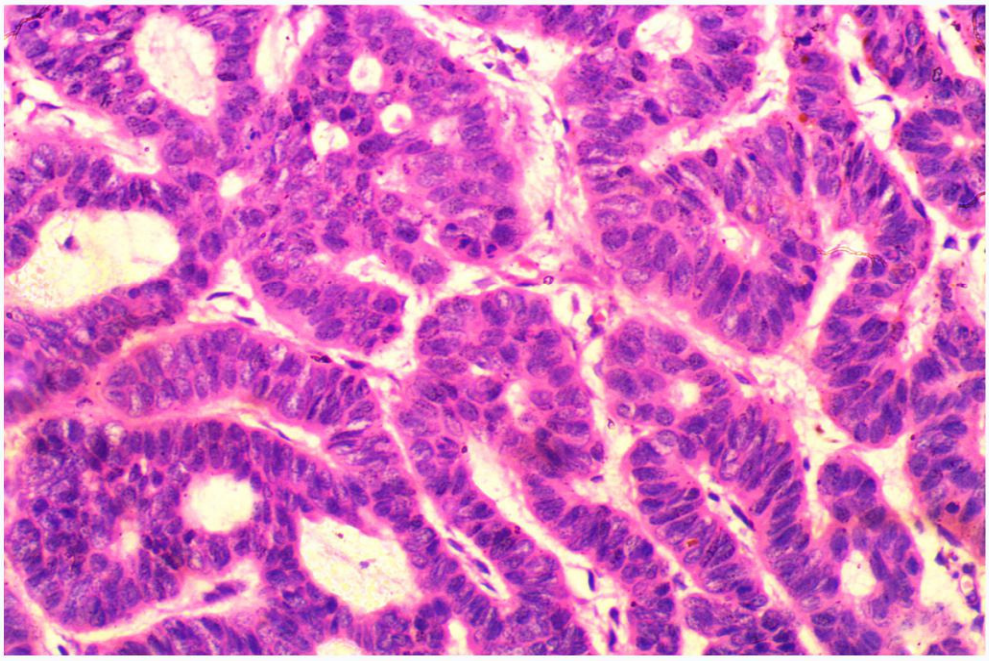

B

Figure 9: Eccrine syringoma from the left eyelid of a 30-year old man. A benign tumour of the duct of eccrine glands, lined by stratified squamous epithelium and filled with eosinophilic materials.(H & E, A x100,B x400)

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DISCUSSION

Eyelid tumours are the most common neoplasm in daily ophthalmology practice and encompass a wide variety of benign and malignant tumours.[12] A total of 45 cases were documented over a study period of 12 years, which shows an a significant rise when compared with similar study done by Aligbe et al in the same institution about two decades earlier.[2] Amongst the tumours seen in this study, benign tumours were the most common, this is concordant with similar findings in Africa, Asia and Europe though with the tendency to developing malignancies increasing with advancing age.[9,10,11] Pyogenic granuloma and epidermal cyst, each accounting for 20% of eyelid tumours, followed by dermoid cyst (15.6%) were the most prevalent benign tumours seen in this study with a prevalence between the second and fourth decade of life. Kaposi sarcoma was the commonest malignant eyelid tumour accounting for 4.4% of eyelid tumours and was documented in subjects between third and fourth decades however their HIV statuses were not known. Increasingly, cases of Kaposi sarcoma of the eyelid have been reported as a manifestation of clinical AIDS.[13] A previous study in Lagos had reported eyelid tumours to be the fourth commonest with a prevalence rate of 11%.[3] A lower rate of 5.6% was reported in Ibadan.[14]

The histological pattern of eyelid tumours as reported in most studies were mainly benign but a few countries like France have reported a high prevalence of malignant eyelid tumours.[4, 6, 8, 15] Other studies have reported few cases of lymphoma of the eyelid but in the index study, no case of lymphoma of the eyelid was recorded.[14, 16] In conclusion, eyelid tumours affect all age groups with a slight male predominance and bimodal peaks in the first and third decades. Benign tumours were significantly commoner than malignant tumours. Epidermal cyst and pyogenic granuloma were the most prevalent amongst all tumours seen.

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