

Melanocytic Naevi at the University of Benin Teaching Hospital; a ten year study

ABSTRACT

Introduction: Melanocytic naevi are benign melanocytic tumours. Some of them may progress to malignant melanoma that has an enormous and ever increasing clinical and economical importance with a high mortality rate. Despite this association, we noticed a dearth of data of benign melanocytic tumours in Nigeria. The aim of this study was to determine the prevalence, age and sex distribution of benign melanocytic tumours in the University of Benin Teaching Hospital, (UBTH).

Methodology: This was a retrospective study which was carried out over a ten-year period in UBTH between January 2004 and December 2013. All cases of benign melanocytic tumours diagnosed histologically during the period under review were collated. Histology slides were retrieved, reviewed and the diagnosis recorded against the corresponding patient's name on a data spreadsheet. The data obtained from this study was analysed using the Statistical Package for Social Sciences, version 16 (SPSS 16, SPSSInc. Chicago, Illinois, United States of America).

Results: There were 17 cases of melanocytic naevi seen over the study period. The mean age for the development of melanocytic naevi in this study was 32.71 years (SD = 22.64) and a peak age was observed in the second decade. A female preponderance with a bimodal peak age, in the 2nd and 3rd decades was observed.

Conclusion: Melanocytic naevi are relatively rare skin tumours in our own environment, unlike in the Caucasians of Australian population.

Key words: Benign melanocytic tumours, Melanocytic naevi, Congenital melanocytic naevi, Acquired melanocytic naevi.

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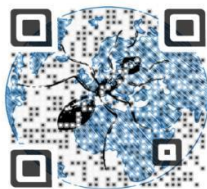
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INTRODUCTION

Melanocytic cutaneous tumours include a large variety of benign and malignant neoplasms with distinct clinical, morphological and genetic profiles.¹The benign melanocytic tumour can either be congenital or acquired benign neoplasm of melanocytes.^{2, 3} On the other hand, melanomas are malignant tumours characterized by a highly invasive and metastatic potential.⁴ The importance of melanoma, both clinically and economically is on the increase as a result of its increasing incidence.⁵ The mortality rate of malignant melanoma is maintained at a high rate despite increased public awareness that has been put in place to promote early detection.^{6,7} Melanomas can arise in association with some melanocytic naevi (benign melanocytic tumours).^{1, 8} Interestingly, despite this potential to progress or transform to a highly aggressive malignant tumour that has a high mortality rate, we noticed a dearth of data of benign melanocytic tumours in our environment in particular and Nigeria in general. The aim of this study was to determine the prevalence, age and sex distribution of benign melanocytic tumours in the University of Benin Teaching Hospital, Benin City, Edo state, Nigeria.

METHODOLOGY

This was a retrospective study that was carried out at the histopathology laboratory of the Department of Morbid Anatomy, University of Benin Teaching Hospital over a ten-year period between January 2004 and December 2013. The targets of this study were all cases of benign melanocytic tumours diagnosed histologically during the period under review. The surgical pathology register, histology request form and duplicate copies of the histology report were useful in providing information on the patients' biodata and clinical information. Histology slides were retrieved, reviewed under the light microscope and the diagnosis recorded against the corresponding patient's name on a data spread sheet. The data obtained from this study was analysed using the Statistical Package for Social Sciences, version 16 (SPSS 16, SPSSInc. Chicago, Illinois, United States of America. Ethical clearance was obtained from the University of Benin Teaching Hospital Ethics and Research Committee

RESULTS

Three hundred seventy five skin tumours were encountered during the study period under review. Melanocytic naevi was the 9th and 6th most common skin tumour and benign skin tumour respectively,

during the period of study. Melanocytic naevi accounted for 17 cases which represented 4.53 %, 9.04 % and 38.64% of all skin tumours, benign skin tumours and melanocytic tumours respectively, (Table 1). Of the 17 cases, 4 cases occurred in males while 13 cases occurred in females giving a male to female ratio of 1:3.3, (Table 2). The mean age for the development of melanocytic naevi in this study was 32.71 years (SD = 22.64) with an age range of 7 – 83 years and a peak age in the 2nd decade, (Table 2 and Table 3). The mean ages for the development of melanocytic naevi in males and females were 41.50 years (SD=28.57) and 30.00 years (SD=21.11) respectively, (Table 2). In females there was a bimodal peak in the 2nd and 3rd decades. In males the peak incidence was in the 4th decade, (Tables 2 and 3). Figure 1; shows nest of blue melanocytes and melanin in the dermis. Figure 2; histologic sections show symmetrical, well circumscribed dermal proliferation of monomorphic population of melanocytes arranged as well formed nest exhibiting maturation gradually downwards from the superficial dermis to the deep dermis. There is accompanying melanin reduction.

Table 1: The percentage of benign melanocytic tumour in Melanocytic tumours, Benign skin tumours and Skin tumours.

	Melanocytic tumours	Benign skin tumours	Skin tumours
Frequency	44.00	188.00	375.00
% of Benign melanocytic tumour	38.64	9.04	4.53

Table 2: The frequency, sex and age distribution of Melanocytic naevi

MELANOCYTIC TUMOURS	FREQUENCY				MEAN ± SD (YEARS)	AGE RANGE (YEARS)	PEAK AGE (YEARS)	MEAN AGE (YEARS) ± SD		PEAK AGE (YEARS)	
	CASES	MALE	FEMALE	MALE: FEMALE				MALE	FEMALE	MALE	FEMALE
Melanocytic naevi	17	4	13	1:3.3	32.71 ±22.64	7 – 83	10 – 19	41.50±28.57	30.00±21.11	30-39	10-19 & 20-29

Table 3: The age group distribution of melanocytic naevi showing females had a bimodal peak in the 2nd and 3rd decades

Age	Melanocytic Naevi		Total
	M	F	
0 – 9	-	1	1
10 – 19	1	4	5
20 – 29	-	4	4
30 – 39	2	-	2
40 – 49	-	2	2
50 – 59	-	1	1
60 – 69	-	-	-
70 – 79	-	-	-
80 – 89	1	1	2
TOTAL	4	13	17

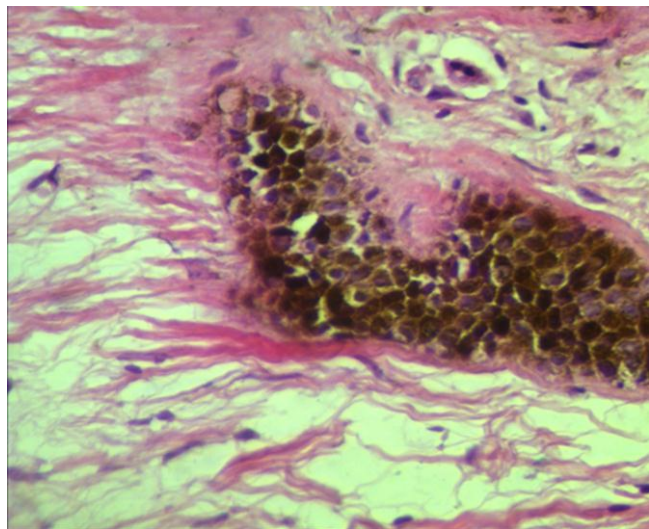


Figure 1 show nests of melanocytes with melanin within the dermis. Haematoxylin and eosin, X 400 magnification

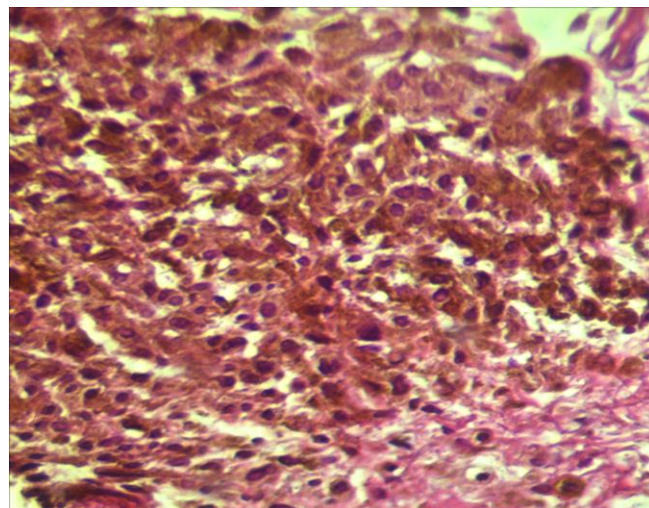


Figure 2b, show islands of dermal melanocytes undergoing maturation with progressive reduction of melanin. Haematoxylin and eosin, x 400 magnification

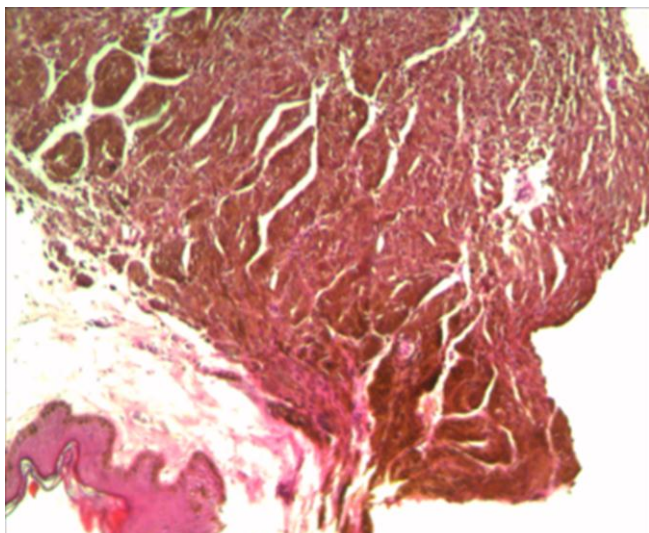


Figure 2a show nests of dermal melanocytes undergoing maturation with progressive reduction of melanin. Haematoxylin and eosin, x 40 magnification

DISCUSSION

Melanocytic Naevi accounted for 4.5 % and 9.04 % of all skin tumours and benign skin tumours respectively in this study. A female predilection (male: female of 1:3.3) with a peak in the 2nd decade was observed. Paucity of data on Melanocytic naevi has limited the comparison of the findings of this study with other studies particularly in our environment. However, its percentage of skin tumours(4.5 %) in this study suggests that it is relatively less common than other skin tumours. This can be substantiated by the study done by Ogunbiyiet al⁹ who in their study noted that only 3.8 % of children had melanocytic naevi unlike a prevalence of 97.7% of children reported in Townsville, Australia.¹⁰Dodd *et al*¹¹ gives credence to development of melanocytic naevi in association to exposure to high levels of UV radiation. They found that the density of melanocytic nevi is greater in chronically sun-exposed areas of the body than those that are intermittently exposed, and that there is a significant association between total sunburns and total nevi on the body.

The congenital melanocytic naevi are proliferations of benign melanocytes that arise during embryogenesis.³ The world prevalence of congenital melanocytic naevi amongst new-born ranges

between 0.2% and 6%. Studies done in Italy and the United States of America,³ show that the prevalence of congenital melanocytic naevi in neonates is 0.67-1% and 1-3% respectively. They are present at birth or within the first few months of life.³ Congenital melanocytic naevi have frequent BRAF mutations and clinically present as light brown to black macules or papules or plaques.¹

The acquired melanocytic naevi have special variants that includes common blue naevi, atypical (dysplastic) naevi, halo naevi and spitz naevi.^{1, 12} The prevalence of melanocytic naevi is significantly lower among pigmented races than in Caucasians.¹³ This is in keeping with the index study that noted a low prevalence of melanocytic naevi. Harrison *et al*¹⁰ reported that in Townville Australia, 97.7% of children had acquired melanocytic nevi while Ogunbiyiet al⁹ reported that only 3.8% of school children in Ibadan had melanocytic naevi. The acquired melanocytic naevi develop in the first two decades of life (i.e during childhood and adolescent)¹⁴ and also in fourth decade.¹ Acquired melanocytic naevi have BRAF mutation with the exception of spitz and blue naevi.¹ Clinically present as small, tan-brown macules that can progress to become papules. Typically, they are small size with uniform colour and well defined edges.¹⁵ Blue



naevus clinically presents as blue-gray or dome-shaped blue or blue-black papule less than 1 cm in diameter.^{1, 15} Patients with dysplastic naevus may have one, numerous or up to hundreds of lesions. Clinically these lesions present as ill-defined or irregular border, irregularly distributed pigmentation, background erythema, and size greater than 5 mm.¹ Halo naevus clinically present as an area of depigmentation surrounding a naevus.¹⁵ Spitz naevus presents as a solitary, small pink papule. They are less than 1 cm.¹⁵ Acquired naevi can be junctional (naevi cells at the epidermal-dermal junction), compound (nest of intradermal naevus cells in addition to junctional activity) or intradermal (nest or cord of naevus cells in the upper dermis with slight or no junctional activity).¹⁵⁻¹⁷

In conclusion, melanocytic naevi are relatively rare skin tumours in our own environment, unlike in the Caucasians of Australian population. In this study, there was a bimodal peak age in females, a female preponderance, a wide age range from the 1st to the 9th decade and a mean age in the 4th decade.

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