

Pattern of Cutaneous Malignant Melanoma in Zaria, Nigeria

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Abstract

Background: Twenty percent of the world's melanoma is seen in Black Africans and Asians. Melanoma in Nigerians would appear to be arising from existing epidermal melanocytes and not from preexisting naevus cells.

Methods: All diagnosed cases of cutaneous malignant melanoma in the Department of Pathology Ahmadu Bello University Teaching Hospital, Zaria, Nigeria over a ten-year study period (1991-2000) were reviewed. The age, sex and anatomical site of the lesion were obtained from the request forms. The histopathological patterns of distribution, presence of dark brown melanin pigments, nucleolar appearance and Clark's histological grading were studied. The data was analysed and tabulated into frequency tables.

Results: Fifty four cases of cutaneous malignant melanoma were reviewed. The over all male: female sex ratio was 1.3:1.0 with a wide age distribution from the second to seventh decades and two peaks in fifth and sixth decades. The foot and lower limbs were the most common sites. Seventy two percent of the cases were of high histological grade (Clark's level III and IV); thirty-six cases were distributed predominantly in sheets while 50 cases had dark brown melanin pigments. All showed characteristic prominent eosinophilic nucleolus.

Conclusion: Malignant melanoma is a common skin tumour in Zaria. It is commonest in the fifth and sixth decades. The feet and lower limbs are predominantly affected.

Key words: Malignant melanoma, cutaneous, pattern

Résumé

Fond: Vingt pour cent du mélanome du monde se trouvent parmi les Africains noirs et les Asiatiques. Le mélanome parmi les Nigériens semblerait une conséquence des mélanocytes épidermiques existants et pas de la préexistence des cellules de naevus.

Méthodes : Tous les cas diagnostiqués de mélanome malin cutané dans le département de Pathologie à l'Hôpital d'Enseignement de l'Université d'Ahmadu Bello, Zaria, Nigérie pendant une période d'étude de dix ans (1991-2000) ont été passés en revue. L'âge, le sexe et l'emplacement anatomique de la lésion ont été obtenus à partir des questionnaires remplis. Les modèles histopathologiques de la distribution, de la présence des colorants bruns foncés de mélanine, de l'aspect nucléolaire et de l'évaluation histologique de Clark ont été étudiés. Les données ont été analysées et tabulées dans des tables de fréquence.

Résultats: Cinquante quatre cas de mélanome malin cutané ont été passés en revue. Le sex ratio général de mâle : femelle était 1,3 : 1,0 avec une distribution large d'âge du deuxième au septième décennies et de deux ondes en cinquième et en sixième décennies. Le pied et les membres inférieurs étaient les emplacements les plus communs. Soixante-douze pour cent des cas étaient de la catégorie histologique élevée (évaluation histologique de Clark III et IV), trente-six cas ont été distribués principalement en feuilles tandis que 50 cas avaient les colorants bruns foncés de mélanine. Tout a montré la caractéristique proéminente de nucléole éosinophile.

Conclusion: Le mélanome malin est une tumeur de peau commune à Zaria. Il est le plus commun dans le cinquième et le sixième décennies. Les pieds et les membres inférieurs sont principalement affectés.

Mots clés: Mélanome malin, cutané, modèle

Introduction

Malignant melanoma is a relatively common neoplasm arising from melanocytes. It has a preponderance for the skin; however, extracutaneous sites of involvement include oral and anogenital mucosa, oesophagus, meninges and the eyes.^{1,2}

The incidence rates of melanoma show substantial worldwide variations.³ The highest incidence in the world is found in Auckland, New Zealand with an age standardized rate of 56.2/100,000 population for both sexes.⁴ The lowest rates are reported in Asian populations in China, Japan and Singapore.³ The reasons for this variations are thought to be the degree of exposure to sunlight and the amount of skin pigmentation present.

Twenty percent of the world's melanoma are seen in black Africans and Asians and may not be clearly associated with sunlight exposure.⁵ Apart from sunlight other predisposing factors include preexisting naevus, some genetically determined diseases such as xeroderma pigmentosa and Von Recklinghausen's disease as well as exposure to certain carcinogens may be important.⁶ Melanoma in Nigerians would appear to be arising from existing epidermal melanocytes and not from preexisting naevus cells.⁷

Materials and Methods

This is 10-year review of histopathologically confirmed cases of cutaneous malignant melanoma seen in the Department of Pathology, Ahmadu Bello University Teaching Hospital, and Zaria, Nigeria from January 1991- December 2000.

The review's main source was the departmental records from where all relevant histology slides stained routinely with haematoxylin and eosin (H&E) were retrieved and studied. Fresh sections were taken from tissue blocks and stained with H&E in cases where original slides were missing. Special stains such as Masson Fontana was employed where applicable for detection of melanin pigment.

Only cases where the slides or surgical blocks were available were included in the study. The age, sex and anatomical sites of lesion were extracted from the request forms accompanying specimens.

The following histopathological features were studied in all the cases; presence of melanin pigment, the histopathologic pattern of tumour distribution, presence of characteristic eosinophilic nucleolus and Clark's histological grading.

Results

A total of fifty-four cases of malignant melanoma were seen in the department over the study period. These accounted for 17.4% of the 3545 cutaneous tumours lesions seen within the ten-year study period in the department. The overall male: female sex ratio was 1.3:1.0.

The tumour was distributed between the second to seventh decades and beyond. About 56% peaked in the fifth and sixth decades (Table 1).

The foot was the commonest site where 79.6% cases occurred, while 12.9% cases were seen in the rest of the lower limbs (Table 2).

Ten cases were limited to the epidermal dermal junction (upper papillary dermis) (Clark's level 2), 39% were in the papillary dermis (Clark's level 3) and 33% were situated in the reticular dermis (Clark's level 4) (Table 3).

All the cases showed characteristic prominent eosinophilic nucleoli in the nuclei of the malignant cells. Only four cases lacked cytoplasmic dark brown melanin pigment. Thirty-six cases were distributed in sheets predominantly while only one case showed a pseudoglandular pattern (Table 4).

Table 1: Age distribution of 54 patients with cutaneous malignant melanoma

Age (years)	No. (%)
0-10	0 (0)
11-20	1 (1.9)
21-30	4 (7.4)
31-40	6 (11.1)
41-50	12 (22.2)
51-60	18 (33.3)
61-70	10 (18.5)
>71	1 (1.9)
Unspecified	2 (3.7)
Total	54 (100)

Table 2: Anatomical sites of cutaneous malignant melanoma in 54 patients

Anatomical Site	No. (%)
Face	1 (1.9)
Scalp	1 (1.9)
Neck	0 (0)
Trunk	0 (0)
Upper Limb	1 (1.9)
Perineum	1 (1.9)
Genital	0 (0)
Lower Limb	7 (12.9)
Foot	43 (79.6)
Total	54 (100)

Table 3: Clark's level of cutaneous malignant melanoma in 54 patients

Level	No. (%)
Level I	0(0)
Level II	10 (19.0)
Level III	21 (38.9)
Level IV	18 (33.3)
Level V	5 (9.3)
Total	54 (100)

Table 4: Histopathologic pattern of cutaneous malignant melanoma in 54 patients

Pattern	Pigmentation		Total (%)
	Yes	No.	
Sheet	32	4	36 (66.7)
Nest	10	0	10 (18.5)
Trabeculae	3	0	3 (5.6)
Pseudoglandular	1	0	1 (1.9)
Pseudopapillary	4	0	4 (7.4)
Total	50	4	54 (100)

Discussion

Malignant melanoma accounted for 17.4% of all malignant tumours of skin origin reviewed. This is similar to reports from other parts of Nigeria and one report from United States.⁸⁻¹¹ Suseelan et al in their pathological studies of malignant melanoma in Enugu, Nigeria found it accounted for 4.5% of all malignant tumours.¹² Malignant melanoma also accounted for 4.5% of the 265 tumours recorded at Ishaka Hospital, Uganda.¹³ Our cases showed a slight male preponderance as in reports from other parts of Nigeria.^{9,12,14,15} However, other reports from Nigeria found no significant sex preponderance.^{16,17} One report from Kenya found a female preponderance.¹⁸ The peak age in the present report was the 5th-7th decade, which is similar to reports from other parts of Nigeria.^{12,14-18}

The anatomical site distribution of melanoma has been useful in understanding its aetiology. In the United States, the rates for invasive melanoma have increased for the trunk among men from 2.5/100,000 population in 1973 to 6.7/100,000 population in 1994.³ Among women in the same analysis, the largest increases were noted for melanoma of the trunk and lower extremities.³ In Canada, the most recent increases in melanoma were observed for the upper limbs, followed by the trunk, for both sexes.³ Most studies have shown that intermittent sun exposure on unexposed skin is important in the aetiology of melanoma. Gender differences also play a role, because clothing styles have varied by gender over the years.³

The foot was the commonest site with 80% of the cases located there, as in other reports from Nigeria and parts of Africa.^{8,9,12,14,16-19} One report noted that the anatomical subsite of 'leg and hip' accounted for most of the melanomas in blacks (55% in males and 73% in females), representing melanomas of the soles of the feet known to be the most common location in blacks.²⁰ The incidence rate of malignant melanoma in Auckland, New Zealand ranks highest in the world with an age standardized rate of 56.2/100,000 population and similar rates for males and females.⁴ The United States ranked fourth in the incidence of invasive melanoma. The lowest rates are reported in Asian populations in China, Japan and Singapore.³ The reasons for these variations are thought to be degree of exposure to sunlight and skin pigmentation. The

prevalence of high histological grading in our cases is not unrelated to late presentation of the patients.

This report has shown that malignant melanoma is a common epidermal tumour and its presentation is similar to that reported from other parts of Nigeria and Africa.

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