



Cutaneous Distribution of Melanoma in Calabar, South Eastern Nigeria

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Abstract

This is a seven-year retrospective study which was started because most of our melanoma patients presented with planter lesions. Patients' case notes were retrieved from multiple points in the hospital-the surgical out patient, Accident and emergency department and the wards. This method was used to avoid missing any records. The data collected include the age, sex, occupation, address and site of lesion. Data analysis showed that 88.2% of melanoma occurs on the planter surface of the foot, 58.8% of the patients live in the rural area, 41.2% of them are farmers and 35.3% are civil servants. Most of the patients present late, when the only treatment possible is palliation.

Aim: To determine the predilection distribution sites of melanoma on the body and propose possible aetiological factors in our society.

Keywords: Melanoma distribution; Skin cancer; HIV

Introduction

The skin is the largest organ of the body. It is protective and liable to various assaults from mechanical, chemical agents and microorganisms because of its external location. It is thick in areas that are subject to repeated stress such as the palms of the hands and the soles of the feet but thin in other areas such as the eye lid and the posterior auricular skin. The skin has two main layers namely the superficial epidermis made up of dying or dead cells and the dermis which supply nutrients to the epidermis by diffusion.

Malignancies of the skin are either primary, arising from cells of the skin, or secondary, arising from either malignancy of contiguous organs or from metastatic spread from distant sites. The major primary skin cancers are basal cell carcinoma, squamous cell carcinoma and malignant melanoma. The aetiology of these cancers has been traced partly to ultraviolet radiation [1-3]. Therefore, fair skin people living near the equator have a high incidence of these cancers [4]. The highest incidence is found among the Celtic race that migrated from Eastern Europe to Australia [5]. In our community the albinos have the highest incidence of skin cancers due to lack of the protection offered by the melanin pigment and a study by Asuquo et al. [4] has shown that squamous cell carcinoma is the commonest skin cancer among albinos of South Eastern Nigeria [6]. However, basal cell carcinoma is the commonest skin cancer among the Caucasians [3,7]. Among the skin cancers, malignant melanoma is the most aggressive [2].

Patients in our society present late for treatment of malignant melanoma. It is hoped that awareness of the common sites of predilection of this malignancy will encourage our patients, especially those in the age bracket for this disease, to watch out for early symptoms and signs of the disease and present in hospital when excision is curative. We found two patients with mirror images of naevi in both feet and in each case the naevus in one foot had transformed to melanoma. The significance of planter naevi in the development of melanoma in our society is yet to be fully assessed.

Methods

This is a 7-year retrospective study. Patients' records, from the year 2010 to 2016, were retrieved and examined at the surgical outpatient department, male and female surgical wards. The reason for checking the records at different points is to avoid missing any case notes. The site of the cancer on the body, patient's occupation, age, sex, hospital number, date, address and the treatment given were noted [6,8-13].

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Table 1: Melanoma distribution.

Year	Age years	No. of Pts	Sex		Occupation			Residence		Planter melanoma	Others
			Male	Female	Civil servant	Farming	business	Town	village		
2010	0	0	0	0	0	0	0	0	0	0	0
2011	24	3	2	1	1	2	0	1	2	3	0
	56										
	58										
2012	53	5	3	2	3	1	1	3	2	4	1
	60										
	55										
	61										
	63										
2013	84	1	0	1	0	1	0	0	1	1	
2014	59	2	1	1	1	1	0	1	1	2	
	70										
2015	74	2	1	1	0	1	1	0	2	1	1
	53										
2016	49	4	3	1	1	1	2	2	2	4	0
	48										
	60										
	44										
Total	971	17	10	7	6	7	4	7	10	15	2



Figure 1: Advanced melanoma of the planter surface and lesions on the leg, groin and anterior abdominal wall.



Figure 2: Mirror images of nevi; one has transformed to melanoma.

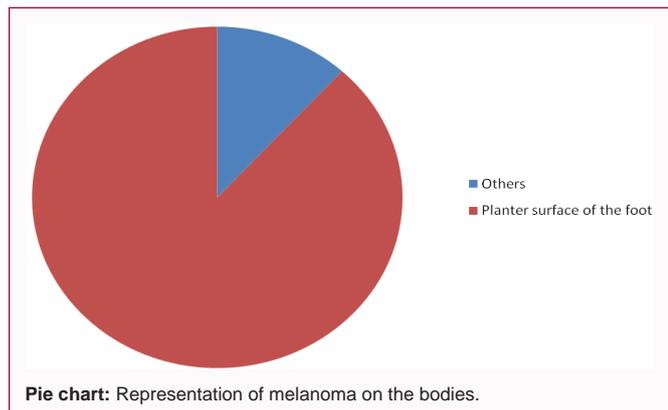
Data analysis

The total number of melanoma patients in the 7 years studied was 17. Two years, 2012 and 2016, had a high incidence of melanoma, five and four patients respectively. The youngest, a human immunodeficiency virus positive patient, was aged 24 years while the oldest patient was 84 years old. Seven patients (41.2%) are resident in town while ten (58.8%) live in the rural area. Seven patients (41.2%) are farmers, six (35.3%) are civil servants while four (23.5%) do private business. The average age at presentation was 57.1 years. Fifteen patients (88.2%) had melanoma of the sole of the foot. The other two sites (11.8%) were an 84-year-old patient with melanoma of the right zygomatic area and a 24-year-old HIV positive patient who presented with melanoma of the left supraclavicular lymph nodes which extended to the skin. This finding of melanoma in HIV positive patients outside the common age range and sites is similar to a change in trend of skin cancers in HIV patients found by Asuquo et al. [14]. We have 7 male and 10 female patients giving a male/female ratio of 1:1.4. Seven patients were farmers, six were civil servants and

four do different types of business. Nine patients had excision biopsy and split thickness skin grafting, one patient had excision biopsy and flap cover, one patient had incisional biopsy and chemotherapy, while 6 patients (35.3%) had only incisional biopsy, analgesics and wound dressing because the disease was too advanced for the other modalities of treatment.

Discussion

Among the primary skin cancers, melanoma is the most aggressive lesion [2]. Basal cell carcinoma is a slow growing, locally invasive lesion. While squamous cell carcinoma may be rapidly growing, it rarely gives distant metastasis. On the contrary, melanoma readily spreads to distant parts of the body such as the lungs, liver, bone and brain. Ultraviolet radiation is a commonly quoted aetiological factor for development of skin cancers including melanoma but in our community sun exposed areas are not often affected in the latter skin cancer [2]. The sole of the foot is the most commonly affected site in



our patients (88.2%) (Figure 1).

However, when ultraviolet radiation strikes the soil part of it is reflected back to the sole of the foot while the rest is refracted and continues into the soil. Since only a part of the total ultraviolet radiation hits the sole of the foot it cannot account for the predominant presentation of this disease on the sole of the foot. Besides, the exposed parts of the body which receives the full impact of ultraviolet radiation do not have a high incidence of melanoma in our community. The other possible aetiological factor is transformation from preexisting naevi, indeed we have seen two patients with mirror images of naevi in the feet and one naevus in each of the patients had transformed to melanoma. We present one of the clinical photographs (Figure 2).

Lower levels of melanin pigmentation of the sole of the foot may be suggested as the aetiology of this disease on the planter surface of the foot but the palms of the hands have the same level of pigmentation without a high incidence of the disease. A study of naevi, melanocytes and melanin in the sole of the feet and the rest of the body in our community is imperative as this may give a clue on the aetiology of this disease. Some authorities in our community have suggested that repeated trauma to the soles of farmers in the rural areas is an important factor in the development of melanoma but Table 1 shows that many of these patients (41.1%) are resident in the city. Age is an important factor in the development of the disease. Most of the patients are above 50 years. The only patient that is 24 years old is an HIV patient and her melanoma started in the supraclavicular lymph nodes and then spread to the skin. The sole of the foot, the predominant site of presentation, is hidden to the patient and by the time warning sign of pain sets in the disease is advanced. This is why 6 patients (35.3%) were only fit for incisional biopsy, wound dressing and analgesics. Figure 1 shows a patient with advance disease that has subcutaneous in transit nodules on the leg,

thigh and anterior abdominal wall. He also has a large, ulcerated groin lymph nodes lesion. This patient had only incisional biopsy, wound dressing and analgesics because his clinical condition was too poor for the use of the other available treatment modalities. Immunotherapy is too expensive for most of our patients. The above factors make the need for accurate determination of the aetiological factors for development of planter melanoma and education of the population at risk imperative (Pie Chart).

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