

Squamous Cell Carcinoma of the Palm in Nigeria

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ABSTRACT

Objective: To document six cases of squamous cell carcinoma (SCC) of the palm. **Materials and Methods:** A review of patients' records seen from 1986 to 1998, at the Plastic Surgical Unit of the National Orthopaedic Hospital, Enugu was undertaken. The accumulated data were analyzed with the reference to those diagnosed as SCCs. **Results:** Four males and two females with a mean age of 61.3 years were afflicted with SCC of the palm. All but one of these patients farmed. There were long delays before presentation, and extents of the lesions reflected that. **Conclusion:** The Public health education is indicated in our community, if the patients are to recognize the nature of this lesion and report early.

KEYWORDS: Health education, Nigerians, palm, squamous cell carcinoma

INTRODUCTION

An article written in Jerusalem and published in 1983 in Switzerland reported a single case of palmar squamous cell carcinoma (SCC) and cited only one previous 1980 example.^[1] However, one group of researchers in Tennessee, USA illustrated this palmar carcinoma in a black patient.^[2] Another American group of surgical researchers was specific about their 20-year experience of hand carcinoma as follows: Dorsum - 33, fingers - 12, thumb - 8, wrist - 4, web - 3, and unspecified - 4.^[3] Then, they concluded thus: "Skin cancer was found on the dorsum of the digits and extensor surfaces of the wrist, but not the inter-digit clefts or the palm." Therefore, it was deemed important to document a series of six cases of SCC of the palm in black patients living in Nigeria, West Africa. This work was based on the epidemiological use of histopathology data pool as popularized by Macartney *et al.*^[4]

MATERIALS AND METHODS

The National Orthopaedic Hospital, which is situated in Enugu, the erstwhile capital of the then Eastern Region of Nigeria, has a Plastic Surgery Unit to which the patients are referred from a wide area. The present series concerns the surgical patients referred to the unit from 1986 to 1998. These patients underwent below elbow amputations after biopsy

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confirmation of the lesion. Histopathological diagnosis was based on the presence of cell nest, otherwise known as horn pearls, hyper-chromatic, and pleomorphic cells. Over these years, the lead author (WIBO) solely ran the Histopathology Unit of the Hospital. This has facilitated the documentation of all patients whose surgical specimens were submitted. Accordingly, the accumulated data have been analyzed with the reference to those diagnosed as SCCs.

RESULTS

The mean age of the patients was 61.3 years (range 36–70 years). These patients delayed for many years from the onset of their lesions to presentation [Table 1]. They were mainly farmers and had extensive lesions of the palms. These patients, who underwent below elbow amputation, did well postoperatively. Table 1 amplifies the data and Figure 1 displays the typical naked eye appearances. Figure 2 shows the histological features of SCC.

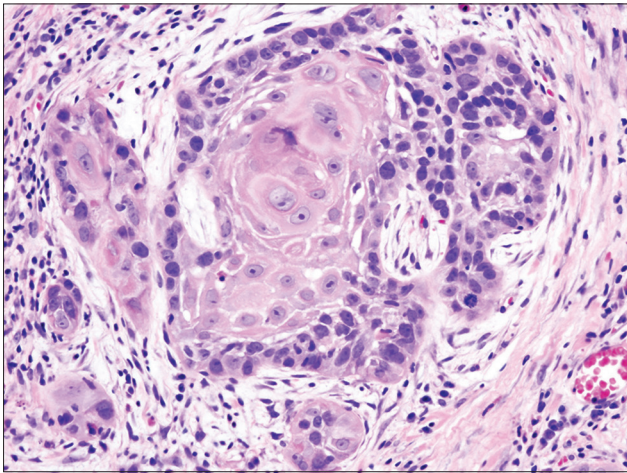
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Table 1: Characteristics of patients with palmar squamous cell carcinoma

Year	Age	Sex	Side	Duration (years)	Occupation	Extent (cm)	Features
1986	68	Female	Right	12	Farming	8	Fungating
1989	36	Female	Right	3	Farming	7	Finger auto-amputation
1990	69	Male	Right	10	Farming	6	Ragged
1990	70	Male	Left	5	Farming	All digits attacked save for thumb with spread to dorsum	Extensive
1995	60	Male	Left	5	Farming	8	Fungating
1998	65	Male	Left	24	Civil servant	9	Extensive

**Figure 1:** Naked eye appearance of the palm lesion (case 3)**Figure 2:** Photomicrograph of squamous cell carcinoma showing typical cell nest, hyperchromatic and pleomorphic cells

DISCUSSION

SCC is a common cutaneous growth in Nigeria.^[5] It appears occasionally on the dorsum of the hand, but palmar involvement is so unusual that, by 1983, only one previous case had been known to be reported.^[1] Agir *et al.* in 2007 noted that SCC arising from the palm skin was very rare but has a very aggressive course and poor outcome.^[6] Accordingly, palmar SCC is truly an unusual malignancy which merits attention.

Generally, malignant tumors have been noted to be uncommon in the hand, and wrist and many hand surgeons see very few of these in clinical practice.^[7] The lesion should be looked for in the older age groups.^[5] In the present series, the ages ranged from 36 years to 70 years (mean age 61.3 years). Moreover, these aforementioned associates drew the attention to an unusually fair-skinned patient who had multiple cutaneous malignancies of the hand. Conventionally, it is thought that the melanin has protective effects against the development of nonmelanoma skin cancers.^[7] In our series, all the patients were dark skinned. It is of interest that the lead author published on only 21 cases of melanoma that occurred in South Eastern Nigeria between 1970 and 1974.^[8] None of these occurred on the hand.

The hand is known to be susceptible to trauma.^[5] This is because the hand is important in the daily activities of man either for earning the daily bread or for recreational activities. It has been documented that hand injuries account for nearly 10% of hospital emergency department visits.^[9,10] Of all, the common injuries that athletes experience, the most frequently occurring one is to the fingers or hand.^[11] The pathophysiology of soft tissue injuries of the hand is diverse. The most common mechanisms of injury are blunt trauma, laceration, avulsion, and burns.^[12] Among these Nigerians presented, such trauma must have occurred during farm work, which was the main occupation of three men and two women in this series. These patients cultivated yam tubers mainly, which involves the intensive manual work. Basden had noted that yam production is intimately bound with the life of our people.^[13] Chakrabarti *et al.*^[14] also found from their studies that the majority of patients, who suffered SCC of the hand, were mainly manual workers.

In this connection, the yam farms were generally on the small scale and did not require pesticides or mechanization. Chemical exposures from pesticides constitute one of the risk factors of development of SCC.^[15] These pesticides may promote cancer through the immunotoxic effects, disturbing the body's normal cancer surveillance mechanisms. Organophosphates, for example, can inhibit serine esterases, critical enzymes in the immune system's T-lymphocytes, and natural killer cells.^[16] On considering the problems associated with the use of epidemiological evidence with respect to chemical exposures, Doll *et al.* who dealt with the carcinogenicity of metals, stated that "there is a need to study dose-response relationships for arsenic in water and skin cancer."^[17] To our knowledge, such research is not being carried out in Nigeria.

The extensive lesions seen in this series contrasts with the Jerusalem case which presented early and attained 2 cm dimension only.^[1] Early diagnosis is important because it allows treatment by inclusive surgical excision of the lesion. Greater potential morbidity and functional loss associated with wide excision would be avoided when patients with SCC of the hand are diagnosed early.^[15] In the present series, negligent delay of approximately 10.8 years resulted in lesional expansion ranging up to 12 cm. Apparently, in such advanced lesions, the digits may be involved and fall off and even the dorsum itself may be concomitantly invaded. Indeed, amputation may be resorted to. In the present study, the patients ultimately underwent below elbow amputations and had an uneventful recovery. These patients did generally well, but after a few clinic visits within a year, they were lost to follow-up. This is where the public health education comes in useful because it is known that recurrence after excision was seen in lesions >1.5 cm in diameter.^[14]

The remaining patient was a retired civil servant. He presented singularly with generalized skin lesions which occurred more on the hand. Apparently, his lesions signified some cutaneous abnormality. Cutaneous abnormalities like porokeratosis^[18,19] are of interest. Some such lesions are associated with SCC as a long-term complication.^[20] Even though our patient was considered fortunate to have been treated in the United Kingdom, the nature of his abnormality was not discovered.

What of sunlight? It is common knowledge that there is an association between the anatomical distribution of skin cancers and the variable exposure of different areas of the body to sunlight.^[21,22] However, it is the dorsum of the hand that suffers. In the case of the palms, what obtains is naturally a negative relationship. Therefore, these patients' SCC could not be attributed to sunlight, but to trauma or dermatological lesions. After all SCC is also known to be secondary to a variety of lesions including trauma and chronic inflammation or scarring. In trauma, SCC is thought to be caused by long-term, continuous mitotic activity, as the epidermal cells attempt to resurface the open defect.^[23]

In a recent survey of skin cancer in Africa,^[24] the current theme throughout was the association with tropical ulcers, especially those arising in the lower leg. Unfortunately, the cited Ghana experience lumped together lower leg and foot (24 cases) and hand and forearm (6 cases). It would have been of interest not only to separate hand cases but also to identify the palmar lesions.

CONCLUSION

There is a need for public health education about the significance of hand injuries and skin lesions. It should be emphasized that the recurrent hand injury could carry the potential for serious handicap and may progress to cancer. To reduce the risk, early presentation of even the smallest hand injuries is advised for proper medical evaluation and

treatment. The same attitude should be accorded to skin diseases of the hand.

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Conflicts of interest

There are no conflicts of interest.

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