Asian Journal of Research in Dermatological Science

Volume 8, Issue 1, Page 1-7, 2025; Article no.AJRDES.128795

Pattern of Skin Tumours Seen in Rivers State University Teaching Hospital (Rsuth), Portharcourt Nigeria: A 12 Year Retrospective Study

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: https://doi.org/10.9734/ajrdes/2025/v8i1117

Open Peer Review History:
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/128795

Original Research Article

Received: 04/11/2024
Accepted: 06/01/2025
Published: 11/01/2025

ABSTRACT

Background: Cancers are known to be on the increase in Nigeria. This has been attributed to the rise in oil exploration in the nation. The Niger Delta region faces a lot of oil spillage and is highly vulnerable to the effects of this spillage which includes health disorders like cancers.

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Cite as: *Amaewhule, Mary Nnenda, Ekechi Stella Amadi, Erinma Fortuna Pepple, Christian Chika Ogbu, and Solomon Uchenna Obioha. 2025. "Pattern of Skin Tumours Seen in Rivers State University Teaching Hospital (Rsuth), Portharcourt Nigeria: A 12 Year Retrospective Study". Asian Journal of Research in Dermatological Science 8 (1):1-7. https://doi.org/10.9734/ajrdes/2025/v8i1117.*

Objective: To document the incidence of skin tumours (benign and malignant) over a 12-year period in the Dermatology Out-patient clinic of the Rivers State University Teaching Hospital, Port-Harcourt, Nigeria.
Materials and Methods: The data was taken from new patient registers in the dermatology out-patient clinic and analysed.
Results: Skin Tumours consists of 5.3% of all dermatological diagnoses within the period. The M: F ratio was 1:1. Benign tumours made up 81.4% of cases and pre-malignant tumours 0.98% The commonest benign tumour is keloids (28.9%). Malignant skin cancers constituted 17.6% of the cases with Kaposi sarcoma (9.8%), metastatic skin cancer (2.9%) and squamous cell carcinoma (2%) being the commonest skin cancers. The young adult age group (20-44) constituted majority (65.7%) of those affected with skin tumours.
Conclusion: There is a relative low prevalence of skin tumours among patients attending the skin clinic in RSUTH (5.3%). The Commonest benign tumor is Keloids while the commonest malignant tumour is Kaposi sarcoma.

Keywords: Benign; cancer; skin; tumour; RSUTH.

1. INTRODUCTION

Skin tumors are abnormal growths on the skin that are caused by various factors such as genetic mutations, viruses, UV radiation, viral infections etc.

Skin tumours can be classified as benign, premalignant and malignant. Benign skin tumors can further be classified into the following:

Epidermal tumors: Seborrheic keratosis, Epidermal nevus, Epidermoid cyst, Viral warts

Dermal tumors: Dermatofibroma, Lipoma, Dermatofibrolipoma,

Viral tumours: Molluscum contagiosum,

Vascular tumors: Haemangioma, Glomus tumour, Pyogenic granuloma

Hair follicle tumors: Trichoepithelioma, Trichofolliculoma

Sweat gland tumors: Syringoma, Hidroacanthoma

Connective tissue tumours: Fibroma, Fibrolipoma

Neural tumours: Neurofibroma, Schwannoma

Pre-malignant skin tumours: Actinic keratosis, Keratoacanthoma, Bowen's disease

Malignant skin tumours: Squamous cell carcinoma, Basal cell carcinoma, Kaposi sarcoma, Rhabdomyosarcoma, melanoma etc. (Leboit, 2006; Xavier-Junior, 2018) They are characterized by uncontrolled growth and spread of abnormal cells (Barro-Traoré et al., 2003).

Symptoms of skin tumours may include obvious growth, change in skin color or texture, bleeding, itching or pain. Tumours, especially the malignant types, have been on the increase in Nigeria. This has been attributed to the increasing prevalence of HIV in the country (Mandong, et al., 2004; Onunu, et al., 2007). Albinism is another major risk factor (Yakubu & Mabogunje, 1993; Kromberg, et al., 1989). Other possible risk factors include UV radiation, weakened immune system from various causes, family history, exposure to chemicals, etc (Bradford, 2010).

This increase has also been attributed to the rise in oil exploration in the nation. And subsequent oil spillage. Oil spillage is the unintentional release of crude oil or petrochemical products into the environment (Chalya et al., 2012). Toxic substances emitted include benzene,toluene, naphthalene, heavy metals, etc. (Egbe & Thompson, 2010; Forae & Olu-Eddo, 2013). The Niger Delta region faces a lot of oil spillage and is highly vulnerable to the effects of this spillage which includes health disorders like cancers (Egbe & Thompson, 2010, Overton, et al., 2016).

2. OBJECTIVES

The main objective of this study is to document the incidence and types of skin tumours (including skin cancers) over a 12 year period in the Dermatology Out-patient clinic of The Rivers State University Teaching Hospital, PortHarcourt, Nigeria.

3. METHODOLOGY

This 12 year retrospective study was performed in the Dermatology out-patient clinic (DOPC) of

Rivers State University Teaching Hospital, Port-Harcourt, Nigeria.

Medical records of patients with various types of skin tumours that attended the clinic between January 2012 and December 2023 were retrieved and relevant clinicopathologic data were collated, entered into Microsoft Excel spreadsheet and analysed. These records include biodata, clinical information and relevant histopathological diagnosis.

4. RESULTS

A total of 1,931 patients attended the clinic during the period studied. There was a steady increase in the number of patients seen over the years: From just 85 patients in 2012 to 325 patients in 2023. Out of this number, 102 (5.3%) presented with various skin tumours. There was an equal number of males and females with skin tumours 51 males and 51 females. (M:F = 1:1).

The age range of the patient with skin tumours is between 11 and 88 years. Majority of affected patients (65.7%) fall into the 20 – 44 years age group followed by those above 60 years of age that constituted 14.7%. The mean age of the patients is 35.2 ± 16.6 years.

Most of the patients with skin tumours were students (34.3%).

Total number of patients with skin tumours were 102, out of which 83 (81.4%) were benign, 1(0.98%) was premalignant and 18 were malignant (17.64%).

The most frequent benign tumour is keloid (28.91%) followed by viral warts (24.09%) and neurofibromatosis (9.64%) (see Table 2 above). Among the cases of warts, genital warts consisted of 60% (Nnadozie, et al., 2024) of the total warts, plantar warts were 15% (Yakubu & Mabogunje, 1993) and the rest 25% were common warts (verruca vulgaris). One of the verruca warts were disseminating occurring in multiple sites.

Out of the Neurofibromatosis cases, 2 of them (25%) were plexiform Neurofibromatosis.

The most frequent malignant tumour is Kaposi sarcoma followed by metastatic skin cancer as shown in Table 3. RVD and Post-transplant immunosuppression was associated with Kaposi sarcoma.

Table 1. Age Distribution of the patients

Age group	**0-9**	**10-19**	**20-44**	**45-59**	**≥60**	**Total**
Year	0-9	10-19	20-44	45-59	≥60	Total
2012	0	1	2	0	3	6
2013	0	0	1	0	1	2
2014	0	0	0	1	0	1
2015	0	0	4	1	0	5
2016	0	1	2	1	1	5
2017	0	0	2	0	1	3
2018	0	0	1	0	0	1
2019	0	0	0	0	1	1
2020	0	0	7	1	2	10
2021	0	4	9	5	3	21
2022	0	2	10	0	1	13
2023	0	2	29	1	2	34
Total	0	10	67	10	15	102
Frequency(%)	0	9.8	65.7	9.8	14.7	100

Table 2. Frequency Of Benign Tumours (Total N=83)

Tumour	**Frequency**	**Tumour**	**Frequency**
Acne Keloidalis Nuchae	6(7.22)	Lipoma	1(1.20)
Acrochordon (skin tags)	2(2.40)	Mulloscum Contagiosum	2(2.40)
Dermal Naevus	1(1.20)	Prurigo nodularis	1(1.20)
Dermatofibroma	1(1.20)	Pyogenic granuloma	1(1.20)
Dermatosis Papulosa nigra (DPN)	4(4.81)	Sarcoidosis	1(1.20)
Eccrine Hiddrocystoma	1(1.20)	Sebaceous Cyst	2(2.40)
Eruptive Xanthoma	1(1.20)	Seborhoeic Keratoses	1(1.20)
Haemangioma	1(1.20)	Steatocystoma Multiplex	1(1.20)
Keloids	24(28.91)	Syringoma	4(4.81)
Neurofibromatosis	8(9.64)	Warts	20(24.09)
Total	**83(100)**		

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Table 3. Frequency of Malignant Tumours (N=18)

Malignant Tumour	Frequency N(%)
Basal cell Carcinoma	1(5.6)
Kaposi Sarcoma	10(55.5)
Melanoma	1(5.6)
Metastatic skin cancer	3(16.7)
Rhabdomyosarcoma	1(5.6)
Squamous cell carcinoma	2(11.0)
Total	**100**

5. DISCUSSION

Skin tumours constituted 5.3% of cases seen in the DOPC of RSUTH. This is in contrast to a study done in Lagos where skin tumours constituted 19.8% of all dermatological consultations and in South Africa 23.73 of all dermatological consultations (IARC, 2024; Hurtig & San Sebastián, 2002).

The reason for this difference may be attributed to the higher number of dermatologists present in these centres compared to our study centre and hence a higher number of patients seeking specialist care. Cancer awareness and fear of cancer is another possible reason.

Male to female ratio of those with skin tumors is 1:1, this is comparable to a studies done in the South Western as well as the South Eastern part of the country (1:1.06) and (1:1.14) respectively (Ayanlowo, et al., 2013; Whiting, 1978).

The equal affectation of both sexes is not surprising because both sexes are equally exposed to UV radiation and other environmental factors. Both sexes have similar immune systems and also, genetic mutations that increase cancer risk affect both sexes.

Benign skin tumours accounted for 82.3% of the skin tumor cases seen in our study. This high figure is comparable to other studies done elsewnere in Burkina Fasso, 96.5%, and Lagos, Nigeria, 68.7% (Adedayo, et al., 2022, IARC, 2024). This high value is expected because benign skin tumours are generally more common than the malignant types due to genetic predisposition, environmental factors like viruses, cellular differentiation, growth regulation, immune surveillance and early clinical detection.

The commonest benign tumours in this study was keloids (28.91%), followed by viral warts (24.09%) and then neurofibromatosis (9.64%). A similar study in South Eastern Nigeria also listed soft tissue fibromas like keloids and dermatofibromas as the commonest benign skin tumours (Whiting, 1978). This is in contrast to another study in the subregion where the commonest benign lesions were found to be cutaneous papilloma (IARC, 2024). The reason for the high prevalence of keloids may be due to the relatively young age group of patients studied (mean age of patients with tumours was 35.2 years) since keloids are known to occur in younger persons. Other possible associated factors are race and genetic predisposition.

The only premalignant lesion in this study was actinic keratosis. Actinic keratosis may progress to squamous cell carcinoma if left untreated. This was found in a patient with albinism. This is not surprising because it is rare in blacks due to the protective effect of melanin. It is commoner in Caucasians and albinos. Squamous cell carcinoma was also found in another albino patient in this study which may have arisen from a previous Actinic keratosis.

17.6% of all skin tumours in this study was found to be malignant. This is comparable to a study done in Benin where 26.9% of skin biopsy samples were found to be malignant (Nnadozie, et al., 2024). Another study in Lagos Nigeria revealed a prevalence of 31.2% in (IARC, 2024). These low figures can be explained by the fact that blacks have a lower prevalence of skin cancers due to the protection by melanin (Xavier & Ocanha, 2018; LeBoit, et al., 2006; Bradford, 2012 and Chalya et al, 2013). This is not the case in Western, overseas countries where skin cancers are more prevalent and for this reason, one out of every 3 diag nosed cancer is a skin cancer (Urban, 2021; Ali, 2024). Skin cancers are the commonest diagnosed cancers in Caucasians with a rising prevalence (Leiter, 2014; Marks, 1995; Sober, 1998, Asoquo 2009, Rogers 2010). This may partly be attributed to the continuous depletion of the ozone layer (Kricker, 1994) Australia and New Zealand are

said to have the highest prevalence of skin cancers (Roky, 2024).

The commonest malignant skin tumor in this study is Kaposi sarcoma followed by metastatic skin cancer. This is comparable to another study done in the South –South region of Nigeria where Kaposi Sarcoma was also found to be the commonest skin malignancy (38.8%) (Asuquo, 2009). This is in contrast to other studies in the Southwestern part of the country where the commonest skin malignancy was Squamous cell carcinoma followed by Melanoma (Adedayo, et al 2022; Ayanlowo, et al., 2013). It is also in contrast to studies do in the US and other parts of the western world that revealed Basal cell carcinoma as the commonest skin malignancy (Ochicha, 2004, Asuquo, 2006; Rafindadi, 1998; Yakubu, 1995; Mandong, 2000). The high incidence of Kaposi Sarcoma in this study may be attributable to the increasing prevalence of HIV infection in the country and the fact that the south- south zone of the country has the highest prevalence of HIV nationwide-3.1 % (Nigeria HIV survey, 2019).

Another risk factor for Kaposi Sarcoma identified in the study is post renal transplant immunosuppression. This may be attributed to the increasing number of transplant patients in the country due to the establishment of renal transplant centres and increasing number of renal transplant recipients returning home after transplant carried out overseas.

6. CONCLUSION

There is a relative low prevalence of skin tumours among patients attending the skin clinic in RSUTH (5.3%). The Commonest benign tumor is Keloids while the commonest malignant tumour is Kaposi sarcoma.

CONSENT

As per international standards, parental written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

It is not applicable.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
The peer review history for this paper can be accessed here:
https://www.sdiarticle5.com/review-history/128795