

HISTOPATHOLOGIC REVIEW OF HIV/AIDS ASSOCIATED MOLLUSCUM CONTAGIOSUM IN JOS NORTH CENTRAL NIGERIA

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Abstract: Molluscum contagiosum (MC) is a mucocutaneous disorder of the poxviridae family with a wide range of atypical presentation in patients with impaired cellular immunity. **Objectives:** To determine the prevalence of Molluscum contagiosum amongst HIV/AIDS patients who were seen at the Aids Preventive Initiative in Nigeria (APIN) clinic in Jos University Teaching Hospital (JUTH) Jos, Plateau State, Nigeria. **Materials and methods:** A one year retrospective review of histopathological cases of molluscum contagiosum amongst HIV patients diagnosed at the department of pathology Jos University Teaching Hospital(JUTH), Jos. Archival records and paraffin embedded tissue blocks were retrieved, resectioned and stained. Results are presented as Tables and charts. **Results:** Overall, fifteen (15) cases of molluscum contagiosum were histologically diagnose within the review period. This account for 10% of all skin manifestation related to HIV diagnose in the department. Of the 15 cases 6 (40%) were males and 9 (60%) were females given a male to female ratio of 0.7:1. The age range of patients were from 21-50 years, commonest anatomical site was the face followed by the trunk. (60%) of the cases presented with CD4 lymphocyte count below 200 cell/ml while 6(40%) presented with a CD4+lymphocyte count between 200 to 500 cells/ml. Similarly, more than half of the cases are seen in patients with viral load of over 100,000 copies/ml, while the rest have viral load of 10,000-100,000 copies/ml. All patients were on various stages of highly active antiretroviral therapy (HAART). **Conclusion:** The study demonstrated that molluscum contagiosum is an atypical presentation in patients with HIV/AIDS with inverse relationship with CD4+lymphocytes counts and viral load.

Keywords: HIV/AIDS, Molluscum contagiosum, Jos, North Central Nigeria.

1. INTRODUCTION

Molluscum contagiosum is a mucocutaneous disorder caused by a double stranded DNA virus of the poxviridae family characterised by discrete, single or multiple, dome-shaped lesions with central umbilication ^[1] It is a self limiting disorder in immune competent individuals but has an atypical presentation in immunocompromised individuals making the diagnosis and treatment challenging.^[2]

MC was first described by Bateman in 1817. Four serotypes were known to cause disease, MCV-1 to MCV4. In small children virtually all infections are caused by MCV1 whereas in patients infected with HIV/AIDS MCV-2 causes over 60% of cases.^[3,4]

MC has a worldwide incidence of between 10-20% of HIV/AIDS patients.^[5] MC in HIV patients mostly involve the face, neck and trunk and genital locations are usually for HIV negative individual.^[6]The association between HIV and MC was

first reported in 1983 in an autopsy study that two of ten with HIV/AIDS had lesions of MCV. Since then the incidence appear to increase with reduced immune function ie CD4 cell count of less than 200/mm.^{3[7]} In a study of 456 patients with HIV/AIDS associated disorders, majority of patients with MC had notable immune suppression and the diagnosis of MC in HIV-positive patients is dependent on the biopsy specimens which maintain the same histopathology features regardless of immune status.^[8]

Outside HIV/AIDS, MC also erupts from the use of steroids, chemotherapy agents and biologic drugs used in the treatment of other diseases like psoriasis. In these conditions methotrexate which acts as an immunosuppressive agent binds to dihydrofolate reductase which inhibits DNA synthesis in immunologically competent cells.^[9] it also block host defence against MC by suppressing the expression of serum inflammatory cytokines such as tumour necrosis factor- α (TNF- α) and interferon- γ (IFN- γ) thereby inducing apoptosis of virus infected cells. Cyclosporine used with methotrexate may act by inhibiting the production of INF- γ .^[10] Also biologics used in treatment of psoriasis act by blocking TNF- α and other inflammatory molecules, Other drugs associated with MC include prednesolone, azathioprine for treatment or pemphigus vulgaris.^[11,12]

Jos University Teaching Hospital is one of the tertiary health centres offering histopathology services in Plateau State with an estimated population of 5 million people. There is limited work on the relationship between HIV/AIDS amongst APIN clinic attendees. This study examines the frequency and pattern of HIV/AIDS associated MC in Jos, and compares them with those with other centres in Nigeria and other parts of the World.

2. MATERIAL AND METHOD

This was a one year retrospective study of histopathologically confirmed cases of molluscum contagiosum seen amongst HIV sero-positives at the Department of Pathology JUTH Jos between November,2014 to October, 2015. The specimen consisted of punch biopsies of patients from various anatomical sites, fresh tissue blocks were cut from paraffin embedded tissue blocks. Each reviewed and diagnosis was made based on morphologic features.

Ethical clearance was obtained from the Ethical Committee of the Jos University Teaching Hospital before the commencement of the study.

Results: Overall, 150 HIV/AIDS related skin diseases were reviewed. Of these 15(10%) were molluscum contagiosum. 6(40%) of them were males and 9(60%) were females with a male to female ratio of 0.7:1. The age range of the patients ranges from 21-50 years and the face, trunk was the commonest anatomical sites affected.

Nine(60%) cases of MC presented with CD4 lymphocyte count below 200 cell/ml while 6(40%) presented with a CD4+lymphocyte count between 200 to 500 cells/ml. Similarly, more than half of the cases of MC are seen in patients with viral load of over 100,000 copies/ml, while the rest have viral load of 10,000-100,000 copies/ml.

Table 1: Age and sex distribution of HIV/AIDS associated molluscum countagiosum

Age	Male	Female	Total
11-20	1(6.7)	0(0.0)	1(6.7)
21-30	0(0.0)	6(40.0)	6(40.0)
31-40	0(0.0)	3(20.0)	3(20.0)
41-50	5(33.3)	0(0.0)	5(33.3)
Total	6(40)	9(60)	15(100.0)

Table 2: Relationship between CD4+lymphocyte count, Viral load and Molluscum contagiosum(n=15)

Variables	Molluscum contagiosum
CD4+ Lymphocyte count	Frequency (%)
<200	9(60.0)
200-500	6(40.0)
Viral load count log RNA copies/ml	
10,000-100,000	7 (46.7)
>100,000	8(53.3)
Total	15(100.0)
CD4+/viral load	



Figure1: Clinical photograph of Molluscum contagiosum in a HIV/AIDS patient showing solitary umbilicated lesions on the face.

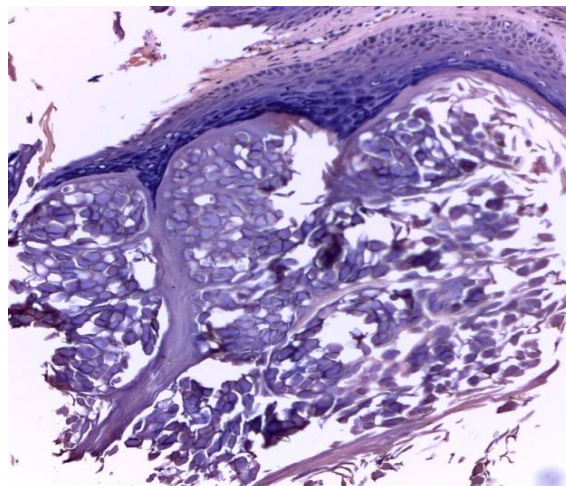


Figure 2: Section show stratified acanthotic squamous epithelium overlined a fibrocollagenous dermis within which are seen large eosinophilic intracytoplasmic inclusion bodies i.e Henderson Peterson bodies (H and E x20 magnification)

3. DISCUSSION

In our study, the prevalence of MC lesions was 10%. This is in agreement with the fact that 10-20% of MC is associated with HIV.^[5,13]

Studies done within and outside Nigeria has documented the association of MC with HIV/AIDS and its inverse relationship with CD4+lymphocytes counts and viral load. Studies in North America Indians, Holland documented annual incidence of MC to be 2.01 per 1000 for 5years, 25 per 1000 for 12 months,^[14] other studies documented the prevalence of MC in children in Israel, Romania, New Guinea, Mali, Japan and Turkey ranging from 0.27% to 34% per 1000 and this is consistent with the study done in Enugu, Nigeria.^[14,16,17] There is paucity of data on patterns of molluscum contagiosum in Nigeria. Very low prevalence of 0.024% was reported in studies in Ibadan by Fayemiwo with female preponderance and two times higher in patient with low CD4+lymphocyte count(meam-85cells/mm³),higher viral load(mean log-1.97).^[4] This is also in agreement with our study were 60% of our patients presented with a CD4 lymphocyte count of below 200cells/ul while 40% with a CD4 lymphocyte count of between 200-500cell/ul and more than half of the cases of MC have a viral load of over 100,000 logRNACopies/ml, and the rest have a viral load of 10,000-100,000 copies/ml.(Tables 1 and 2) Also in our study, the most common site of involvement is the face which confirms that widespread facial lesions with poor response to treatment and characteristic of late HIV-infection.^[6]

Atraide et al., in Port Harcourt also reported MC though as a rare disease is common in HIV- patients with low CD4+lymphocyte count and high viral load.^[18] This is also in agreement with Okechukwu et al., in Abuja whose study

showed that MC accounted for 5.4% of patterns of skin disorders and its relationship to CD4+lymphocyte count in HIV-infected children.^[19]

Morphologically, MC presents as a pearly solitary dome-shaped umbilicated papules measuring 1 to 5mm(Figure1). On microscopic section, there are variously sized eosinophilic intracytoplasmic Henderson-Patterson inclusion bodies(Figure2).^[20]

4. CONCLUSION AND RECOMMENDATION

Molluscum contagiosum associated infection is more common amongst HIV/AIDS patients, and low CD4 lymphocytes counts and high viral loads has been linked with its emergence especially facial Mollusca and is indeed classified as one of the cutaneous makers of HIV.

Many Authors across the globe has reported excellently on the prevalence of skin disorders among HIV/AIDS and in many reports the incidence of MC were either low or absent, this could be attributed to the fact that MC has the same morphological appearance with other skin lesions and could be missed. So we strongly recommend that all skin lesions should be biopsied so histology.

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Conflict of interest

The author declares that there is no conflict of interests regarding the publication of this paper.

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