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ATYPICAL MYIASIS IN A FEMALE INFANT IN OSOGBO, SOUTH-WEST NIGERIA; A CASE REPORT

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ABSTRACT

Background: **Cutaneous Myiasis is uncommon in early infancy. Also, scalp involvement is unusual in sub-Saharan Africa, which is a site of predilection in the America continent where the vector is the Botfly. The Tumbu fly vector found in Africa has a predilection for the trunk and abdomen. We report the case of an infant with scalp Myiasis and highlight possible implications of the disease.**

Case presentation: **We present a case of a A 2-month-old girl who presented at the Paediatric Emergency Unit of University of Osun Teaching Hospital, Osogbo, Nigeria with boil-like skin lesions on the trunk and fever of two days duration. The skin lesions progressively increased in size and subsequently ruptured, releasing motile larvae. The infant, exclusively breastfed and with no known exposure to individuals with similar symptoms. She received multiple inappropriate medications at a rural primary health centre without improvement. On examination, she was febrile but otherwise stable, with multiple papular and ruptured lesions with visible larvae. A diagnosis of cutaneous myiasis was made. Application of Vaseline (petroleum jelly) to the intact lesions led to complete extrusion of the larvae within 48 hours.**

Conclusion: **This case draws attention to an unusual pattern of myiasis in an infant and raises questions about possible changes in vector behaviour or species distribution. It also highlights gaps in early diagnosis, the problem of inappropriate antibiotic use, and the influence of environmental and socioeconomic factors including unreliable electricity on preventable parasitic infections.**

Keywords: Infancy, Ectoparasite, Myiasis

INTRODUCTION

Myiasis is cosmopolitan, ectoparasitic skin infestation.[1,2,3] In Sub-Saharan Africa it is caused by *Cordylobia anthropophaga* (tumbu fly) and *Dermatobia hominis* (botfly) in the Americas.[3,4] The female tumbu fly lays her eggs on the laundry or clothes or the soil. Eggs thereafter hatch and penetrate the accessed skin following which, the parasite completes its life cycle. The developing larvae usually presents as firm boil-like lesions, projecting from skin surface, usually on the trunk thighs and buttocks.[3] The botfly usually attaches her eggs to the abdomen of a blood sucking athropod, usually, mosquito. The eggs laid on athropods such as mosquito hatch into larvae after been transferred to the exposed parts of the host like, the scalp, face, forearms and legs during a blood meal.[3] The larvae thereafter burrow and develop and occasionally the larvae may project totally out of the skin with the lesions being pruritic and the projected larvae having a similar resemblance to maggots. The larvae usually partly project above the skin surface for the purposes of respiration. Application of petroleum jelly over the projecting part eventually leads to progressive migration of larva to the surface in a bid to escape suffocation.

Cutaneous Myiasis can be treated medically by, Ivermectin administration and by surgical extraction of larvea from the skin[1,5]. The larvae usually partly project above the skin surface for the purposes of respiration. Application of petroleum jelly over the projecting part eventually leads to progressive migration of larva to the surface in a bid to escape suffocation. Prevention of cutaneous myiasis is by blocking access of the eggs to clothes. Ironing the clothes can also destroy the eggs.

A 2-month-old female infant presented at our health facility with boil like pruritic lesions of the trunk, abdomen and scalp. The dilemma associated with case diagnosis is discussed with a view of improving the diagnostic acumen and case management of future similar cases. Additionally we intend to proffer recommendations to help in the prevention of diseases in potential locations. Hopefully, this report is expected

to stir up the interest of anthropologists to look out for possible ecological changes and introduction of the botfly specie in Nigeria, West Africa considering the scalp lesions in our case study. [3]

Case presentation

A 2-month-old female infant presented at the Children's Emergency Unit of the UNIOSUN Teaching Hospital, Osogbo in the company of her mother, who gave the complaints of skin rash and fever of two days duration.The infant was apparently in a good state of health till two days prior to presentation when pinpoint rashes were noticed on the trunk and scalp. The rashes increased in size progressively to the size of a small boil. A day later the boil-like structures were noticed to break up with whitish maggot-like creatures projecting and migrating from the broken-down boil like lesion. Also, the patient was noticed to have developed a fever described as intermittent peaking of body temperature at night.

Figure 1: Scalp cutaneous myiasis with larvae almost extruded completely from scalp.

The infant was still, being exclusively breastfed and there was no history of contact, with anybody with a similar disease. There was no known history of drug allergies and the infant was not on any routine or new medications. Ketoconazole cream, Ampiclox syrup, Paracetamol syrup and Vitamin C syrup were the medications prescribed on consulting a nurse stationed at, a rural primary health centre about 10km from, Osogbo the state capital. There was however, no improvement despite these drugs thus, necessitating their presentation at UNIOSUN Teaching hospital, Osogbo

The mother was a 21-year-old hairdresser, while father is a 25-year-old seller of phone gadgets.

The mother sun-dried her freshly washed clothes by spreading them on a baby drying rack outside the house. She did not iron the clothes before use. She could not recall any contact between her child and insects other than mosquitoes.

General examination revealed a conscious and irritable well-fed female infant with a weight of 4.8kg, She was febrile at admission with a temperature 38.2^{O}C and was not pale or jaundiced and was well hydrated. Multiple raised firm papular lesions with some of the lesions that had broken down having a central puctum, with whitish substance within in some parts of the scalp, trunk, buttocks and armpits.Some of the pustular lesions that freshly broke down had maggot-like larvae emanating from them. Pictures of the lesion are shown in figure 1 and 2. Systemic examination was essentially normal

Figure 2: Cutaneous myiasis with maggot like projection from the boil like lesion on the lower part of the anterior abdomen

A diagnosis of Cutaneous Myiasis was made, with possible bacterial super-infection of the broken down lesions.

Treatment was by topical application of vaseline petroleum gel on all intact lesions and this resulted in extrusion of myiasis larvae in all intact skin papules within 48hours of admission. Cefuroxime syrup was

administered at a dose of 70mg twice daily for one week. Thereafter fever resolved by crisis within 24hours of antibiotic administration. All the medications prescribed at the initial health centre were discontinued . The mother of the patient was appropriately educated about the disease and counseled on how to manage her laundry in a way that the vector insects will not have access. Mother was supposed to bring the infant for follow-up in a week after discharge.

The mother defaulted clinic follow-up appointment. However follow-up calls by telephone with the parents revealed that the lesions had healed well without recurrence. Additionally, there were no similar case presentations in the siblings or other members of the community.

Discussion

Myasis is a neglected cosmopolitan disease. Most of the available information on this disease are from case reports. Some knowledge gaps still exist on the presentation and vector in different geographic settings.[6,7,8] To our knowledge this is the first case recorded in our paediatric unit at UNIOSUN Teaching Hospital, Osogbo. Thus, it is not surprising that the diagnosis of the disease was missed at the primary health centre where, the child initially presented with consequent management with irrational antibiotic prescription and usage. Irrational antibiotic prescription and usage has been associated with antimicrobial resistance.[9] It would have been more appropriate for the maternity to have referred the patient immediately to a general hospital for proper evaluation, as this unknown disease could be an emerging or re-emerging disease.

Cutaneous Myiasis involving the scalp in sub-Saharan Africa and occurring under the age of 2 years is atypical, considering the fact that the tumbu fly associated with cutaneous myiasis in Africa has a predilection for the trunks and upper limbs, while the botfly, which is not found in Africa is associated with scalp lesions.[1,3] This observation raises important questions: could botflies be present in Africa, or has the Tumbu fly adapted or evolved to inoculate previously uncommon body sites? Vector introduction to new settings is a valid concern that has been previously adduced to follow climate change and global transport.[6] The infant might also have been a candidate for inoculation since children under the age of 3 months are immobile and may therefore serve as a "sitting duck." Thus there is a need for anthropologists to study this community with a view to filling up a knowledge gap of the insect specie associated with this cutaneous myiasis and possible associated ecological changes. The occurrence of Cutaneous Myiasis in infancy is also rare as the disease tends to affect older children.[1,10]

It is also surprising that the cutaneous myasis only presented in this infant as parents did not observe similar disease in siblings or other individuals in the community. This raises another question, as it is expected that a fair share of the inhabitants of this community should be exposed to the causative insect and have similar disease. Thus, we need to ask if there is a possibility of developing of immunity to myasis in older members of the community by reason of age which might have facilitated previous contact?

Our outlook on prevention of myiasis, is that the governance in developing nations needs to look beyond provision of roads and portable water but should go further to ensure a constant and affordable electric power supply. Possible reasons for not ironing the clothes may be due to the erratic power supply as well as the rising costs of electricity. We also need to bear in mind the Myiasis is a neglected disease with information on it scant to the general public, especially the preventive ability of ironing the clothes. The role of addressing social and economic determinants of health in the comprehensive management of ectoparasitic disease has been previously stated.[10] Access to constant and affordable electricity could be the easiest accessible intervention that may change the narrative in this case. Constant electricity would have made it possible to iron the clothes and kill the eggs or larvae and break the chain of transmission to man.

Limitation

A limitation of this study is the inability to access an anthropologist to study the larvae extracted from the infant and insects in the community.This may help charactherize the insect and hopefully, supply answers to suspected changes in the vector.

CONCLUSION

It is concluded that the scalp can be affected in Myiasis in Africans. The vector agents and their larvae need to be studied by experts in order to characterize or detect changes in epidemiology as well as to proffer strategies to curtail the spread of disease.

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