Priapism as an Additional Clinical Presentation of Rhodesiense Human African Trypanosomiasis in Stage-1 of the Disease: A Case Report from Zambia

Victor Mwanakasale[1*], Balakrishnan Subramanian[2], Kartheek. R. Balapala[3], Mwaba H Mwila[4]

Copperbelt University, Michael Chilufya Sata School of Medicine, Ndola, Zambia
*Corresponding author

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Abstract— *Human African Trypanosomiasis (HAT) is a parasitic disease caused by a parasite called human trypanosomes. The disease is divided into two stages namely, stage-1 and stage-2. Priapism is an erectile dysfunction characterized by painful persistent erection of the penis for more than four hours and not related to sexual stimulation. We present a case of a patient in stage 1 of Rhodesiense HAT (rHAT) disease that presented with priapism. We conclude that priapism could be an additional clinical presentation of stage 1 of rHAT disease.*

Keywords— Priapism, Rhodesiense, Human, African, Trypanosomiasis.

I. INTRODUCTION

Human African Trypanosomiasis (HAT) is listed among diseases referred to as Neglected Tropical Diseases (NTD) by the World Health Organisation (WHO) [1]. This disease is caused by an invasive parasite, which a hemoflagellate, that belongs to the species *Trypanosoma brucei*. There are two subspecies of *Trypanosoma brucei* that are pathogenic to humans. These are *Trypanosoma brucei rhodesiense* (*Tbr*) that causes Rhodesiense Human African Trypanosomiasis (rHAT) or East African sleeping sickness and *Trypanosoma brucei gambiense* (*Tbg*) that causes Gambiense Human African Trypanosomiasis (gHAT) or West African sleeping sickness. The parasite is transmitted to humans mainly by the bite of an infected tsetse fly belonging to the genus *Glossina spp.* The two diseases caused by *Tbr* and *Tbg* are basically the same, the difference being in the duration of the illness [2]. The acute, rapidly progressive form of the disease is rHAT while gHAT is a chronic disease and progresses at a more indolent pace. The two diseases occur in two stages namely, Stage-1, also called the Hemo-lymphatic stage, and Stage-2, also called the Meningo-encephalitic stage. In Stage-1, the parasites are confined to the blood circulation and the lymphatics. For rHAT the patient presents usually with fever and headache [3, 4, 5]. Other presentations include thyroid dysfunction, adrenal insufficiency, hypogonadism, and liver involvement [6, 7]. In stage -2, the parasite has invaded the Central nervous System. Here the patient presents with signs and symptoms of progressive mental deterioration.

Priapism is an erectile dysfunction characterized by a persistent, usually painful, erection of the penis that lasts for more than four hours and is unrelated to sexual stimulation [8]. There are many causes of this condition, even though in many instances the cause is unknown. Priapism has not been reported in literature before to be a clinical presentation of rHAT. We report a case where a patient presented with priapism in addition to the typical clinical presentations of Stage-1 of rHAT.

II. THE CASE REPORT

A 27 years old male patient was admitted on 5th January 2019 to a hospital in a rHAT endemic area in eastern region of Zambia. The patient presented with a history of generalized body pains, sore throat, inability to walk, weakness of both lower

limbs, fever, and persistent erection of the penis. The erection of the penis was beyond four hours duration and was not related to sexual act or stimulation. There was no history of trauma to the penis or perineum. On physical examination, the patient was fully conscious and all the systems were normal apart from the evident priapism. On 7th January 2019, venous blood was collected from the patient and examined for malaria parasites using the Giemsa stained Thick smear light microscopy. A full blood count was also done. The blood smear revealed presence of human African trypanosomes and no malaria parasites. The full blood count revealed thrombocytopenia. A diagnosis of rHAT was therefore made. Lumbar puncture was not done to collect cerebral spinal fluid for examination to stage the disease as the guardians refused to give consent. An assumption was made that the patient was in Stage-1 of rHAT as there were no clinical signs of Stage-2. The patient was commenced on 1g once weekly of Suramin, given intra venous, for 5 weeks starting on 18th January 2019. The patient recovered from rHAT but the priapism persisted and ended in penile fibrosis.

III. DISCUSSION

Priapism is divided into three main categories namely, Ischemic, Non-ischemic priapism, and Stuttering. This categorization is based on the etiology and pathophysiology of the condition [9]. Ischemic priapism, also known as veno-occlusive or low flow priapism is characterized by a persistent erection marked by rigidity of the corpora cavernosa and little or no cavernous arterial inflow [9]. In majority cases of ischemic priapism the cause is unknown in healthy men. However, it may occur in men with sickle-cell disease, leukaemia, or malaria. A case of priapism has been reported in a patient with *Plasmodium vivax* malaria [10]. Non-ischemic priapism is also called arterial or high-flow priapism. This is caused by unregulated cavernous arterial inflow [9]. The cause here is trauma to the penis or perineum that leads to disruption in carvenous arterial anatomy. Finally, stuttering priapism is also called intermittent or recurrent priapism. This is characterized by recurrent episodes of ischemic priapism [11, 12].

In our patient, the most likely category of priapism was ischemic as there was no history of trauma to either the penis or perineum. This is the category where malaria, as a cause of priapism, is placed [10]. Since *P.vivax* and *Tbr* are both protozoan parasites their mechanisms of priapism should be similar. Therefore, *Tbr* was the most likely cause of priapism in our patient. This was an emergency as it led to the complication of penile fibrosis, which does not occur in Non-ischemic priapism. We, however, do not rule out the occurrence of priapism in our patient as a mere coincidence.

IV. CONCLUSION

Tbr is most probably a rare cause of Ischemic priapism. Priapism could be included on the list of clinical presentations of rHAT in stage-1.

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