

Case Report

The psychological impact of snakebite, a neglected aspect in WHO snakebite treatment guidelines for Africa: Lesson learnt from a historical case report from Zambia

Jules Tolboom

Consultant, International Child Health & Nutrition
Zaakorf 6, 6581WP Malden, The Netherlands
julestolboom@me.com

ABSTRACT

From a historical case of systemic envenoming and depression in Zambia details were kept. Presenting features fitted a viper bite, warranting polyvalent antivenom intravenously. Applying presently used 'WHO guidelines for prevention and clinical management of snakebite in Africa' (2010), indicate a puff adder (*Bitis arietans*) bite and similar treatment. Snakebite treatment guidelines need an update on psychological co-morbidity.

INTRODUCTION

Only in the last decade the heavy psychological impact of snakebite started to receive attention.¹ From Sri Lanka, difficult-to-treat depression and post-traumatic stress disorder are reported,² which cannot be prevented by a brief protocolled approach.³ For Africa, there is only one study, reporting 25% prevalence of depression at a snakebite ward in Nigeria.⁴

Presently used 'World Health Organization (WHO) guidelines on prevention and clinical management of snakebite in Africa' mention puff adder (*Bitis arietans*) as widespread and most important cause of serious bites in southern and central Africa.⁵ Lubwe Mission Hospital (Luapula Province, Zambia) annual hospital reports 1974-1983 & 1985-1997 (n = 23) show 903 admissions for snakebite with only 11

fatalities.⁶ This low number would be in agreement with findings from Zimbabwe where less than 5% of all puff adder bites were fatal.⁷ The snakebite guidelines followed in this case,⁸ are compared to current WHO guidelines on clinical management.⁵ Both do neglect psychological co-morbidity.

CASE REPORT

Around 4.30 on a Sunday afternoon in the mid-seventies, the duty nurse of the hospital phoned: a 40-year old man was just brought from a village nearby, shortly after being bitten inside the house by a dangerous snake, 'Mpini' in Chi-Bemba. I requested to give codeine, clean the bite wounds, elevate the affected leg, put up an intravenous (IV) drip with normal saline and start monitoring the patient. In the ward, some 15 minutes later, I saw an anxious, fully conscious and stable patient with a mild swelling and oozing puncture marks at the left lower leg. The Bemba-English dictionary translated 'Mpini' as 'kind of viper'.⁹ Treatment guidelines were consulted in 'Tropical Doctor'.⁸ In the fridge, the South African Institute for Medical Research (SAIMR) manufactured vials of polyvalent antivenom had not expired. After re-examining the patient, I left. At 9.00 pm. the night nurse phoned: 'please, come quickly, the patient is bleeding from his eyes and vomits blood'. In the ward, illuminated

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by paraffin lanterns, the floor on the right side of the patient's bed showed a large splash of bloody vomitus, while blood-stained tears were streaming from his eyes. Blood pressure was low, pulse rapid and weak. Swelling of the leg had increased, now blistering was visible too. We started treatment with a test-dose of 0.2 ml of antivenom subcutaneously (s.c.), at that time advised by the guidelines.⁸ Adrenaline 0.1% for s.c., promethazine and hydrocortisone for IV use were kept at hand, in case of hypersensitivity reactions. During the first hour, up to 10 ampoules (100 ml) of antivenom in 500 ml normal saline IV were used. Thereafter, an extensive oedematous skin rash indicated adrenaline s.c., promethazine and hydrocortisone IV. Early in the morning, the patient was stable, with vital signs restored. That day he developed oliguria, lasting around 24-36 hours, which was followed by a polyuric phase of several days. Both complications were adequately treated.

On ward rounds, I kept noticing the patient's much depressed mood. The nurse confirmed that. Puzzled, I asked her what-caused that state of mind. 'You see, being bitten by a 'Mpini' at home is very frightening. The bleeding, and all that followed, makes it even more upsetting for him. We lost the patient for follow-up as he shortly after discharge moved to relatives in the Copperbelt.

DISCUSSION

Treatment. The presently used WHO guidelines for Africa advise, when a species is not identified, treatment guided by syndrome classification.⁵ In this case, signs and symptoms do point to Syndrome 2: 'Marked swelling with incoagulable blood and/or systemic bleeding'. In the east and southern African savannah region, which includes Zambia, this syndrome implies bites by puff adders (*Bitis arietans*), indicating use of polyvalent (polyspecific) antivenom IV.⁵ The main difference between our management and current WHO guidelines is that test-dosing with antivenom has been abandoned.

Psychological impact. Added to patient's anxiety caused by the bite, came the stress of systemic envenoming, i.e. bleeding and shock. Treatment must have added to that. In retrospect, we probably were dealing with depression in an early post-traumatic stress disorder (PTSD).

CONCLUSION

Snakebite envenoming can lead to psychological comorbidity, i.e. depression and PTSD. This needs to be addressed in updated WHO guidelines for Africa.

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