

Renal failure after traditional
medicine ingestion – cause or
coincidence?



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INTRODUCTION

African traditional healers provide health care services based on culture, religious background, knowledge, attitudes, and beliefs that are prevalent in their community. Illness is regarded as having both natural and supranatural causes (e.g., angered spirits or witchcraft) and must thus be treated by both physical and spiritual means, using divination (Fig. 1.), incantations, animal sacrifice, exorcism, and herbs (1).

In sub-Saharan Africa, traditional medicine is widely used. Herbal medicines undoubtedly can have beneficial effects, and there is a strong belief that natural products pose no risks. However, substantial toxicities have been described, both from the original ingredients as well as secondary metabolites (2).



Fig. 1

*African divination: the “bone thrower”
reading the bones to consult the ancestral spirits
(source: <https://commons.wikimedia.org>).*

CASE REPORT

This female term infant had been born at Andara Hospital in northern Namibia, nearly 200 km east of Rundu. Details of her prenatal history remained unclear. She was discharged home together with her mother after an apparently uneventful postnatal course on day of life (DOL) 3. Four days later, she was readmitted because of poor feeding and seizures. Antibiotics were started for a preliminary diagnosis of neonatal sepsis with meningitis, and she was transferred to Rundu State Hospital.

On admission to the Prem Unit, her weight was 2400 g, i.e. 20% below her birth weight of 3000 g. While no apparent seizures were noted, the baby was non-responsive with extreme opisthotonos positioning (Fig. 2).



Fig. 2

*Patient on admission (DOL 7):
unresponsive and with marked opisthotonos.*

Laboratory results were remarkable for a negative CRP (0.3 mg/l), a serum sodium of 190 mmol/l, a serum potassium of 6.9 mmol/l, a blood glucose level > 20 mmol/l, and a creatinine of 690 μ mol/l. A diagnosis of renal failure and severe hypernatremic dehydration was made.

Upon further questioning, the mother reported that the baby had received traditional medicine orally because of poor feeding and constipation. The exact nature of the herbal medicine concoction was unknown. The local health care professionals also noted ribbons that had been placed around the neck, the waist and the wrists, frequently used by traditional healers (Fig. 2, 3). Such interventions are aimed at keeping evil spirits away from the patient (1).

Initially, the patient was anuric. Within 24 hours, seizures reoccurred and were treated with phenytoin, the only antiepileptic drug available at the time. Slow correction of the serum sodium concentration was achieved, reaching a level of 175 mmol/l 36 hours later and 153 mmol/l 60 hours later (i.e., a drop in serum sodium of approximately 0.7 mmol/l per hour). Within the same time frame, her neurological status improved (Fig. 3).



Fig. 3

Improved neurological status after slow correction of severe hypernatremia; note the purple ribbons around her neck, waist and wrist, often placed by a traditional healer.

One week after admission, she began to breastfeed and finally could be discharged home on DOL 20. Unfortunately, no follow-up information is available.

DISCUSSION

Our patient presented with seizures, severe hypernatremic dehydration and renal failure. To what extent the use of traditional medicine had contributed to the patient's condition could not be clarified. Obviously, all the findings might be explained by prerenal failure due to severe dehydration. Nevertheless, the case serves to illustrate the fact that potentially toxic effects of traditional medicine should be considered in low- and middle-income countries when confronted with an extraordinary situation.

According to the World Health Organization (WHO), about 40–90% of people living in developing countries frequently use traditional medicine (3). Particularly in sub-Saharan Africa, traditional medicine is widely used. In one study from the Eastern Cape, South Africa, 57% of mothers and other caregivers reported that they had used traditional remedies in their children, and 83% said that they would use them again. Children of all ages were given traditional remedies (mostly by their mother or grandmother), usually for diarrhea, fever or constipation (4).

It has been argued that this is essentially due to the prohibitive costs of pharmaceutical-based medicine and the low income of a major part of the population (2). In addition, there is a strong belief that natural products pose no risk. However, the pharmacological actions of many medicinal plants are not well understood (5), and the use of medicinal plants can have

deleterious effects. Many contain toxic substances or, when ingested, lead to the production of toxic metabolites. The toxicity of a given plant depends on various factors, including the quantity consumed, the time of exposure, the parts of the plants consumed (roots, oil, leaves, stem bark or seeds) and the strength of secondary metabolites (2).

The organs most commonly affected by herbal medicine consumption are the kidneys and the liver. A variety of renal syndromes have been described following the use of medicinal plants, including acute tubular necrosis, acute interstitial nephritis, Fanconi's syndrome, hypokalemia or hyperkalemia, hypertension, papillary necrosis, chronic interstitial nephritis, nephrolithiasis, urinary retention, and cancer of the urinary tract (6).

Mortality rates associated with traditional medicine intoxications are likely to be substantial, particularly among the youngest patients. Tindimwebwa et al. analyzed 156 cases admitted to the Pediatric Department at Umtata General Hospital at the University of Transkei Faculty of Health Sciences in South Africa. The overall mortality rate was 44% with most of the deaths observed among the zero to six months age group (63% of all deaths) (7). In another study of 103 patients admitted to a hospital following the recent use of folk remedy, the overall mortality rate was 34%. Renal dysfunction was present in 76% of patients and

liver dysfunction in 48% (8). Acute renal failure has been reported to be one of the most severe, but under-recognized complications of folk remedy use (9).

CONCLUSIONS

According to Ozioma et al., there is an African way of understanding the visible world around us (Fig. 4) – the cattle, trees, people, and cities, as well as the unseen world, the supernatural world of spirits, powers and diseases (1). Working as European health care professionals in such an environment can be challenging, particularly when confronted with unknown medical practices, traditional beliefs or unusual situations (Fig. 5). It is important to keep an open inquisitive mind and to get advice from local colleagues who may be more experienced with such situations.



Fig. 4

The African way to perceive and explain the world around us may be different from ours: impressive clouds piling up high above the Kavango river after a hot day.



Fig. 5

This patient was admitted after an unattended home delivery: the origin of the traumatic neck lesions could never be clarified (the infant made an uneventful recovery).

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