

## MODERN MEDICINE AND SHAMANISTIC RITUAL: A CASE OF POSITIVE SYNERGISTIC RESPONSE IN THE TREATMENT OF A SNAKEBITE

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### Summary

There are few cases of ritualistic curing, observed under clinical conditions, described in the literature. This case study documents the shamanistic treatment of a snakebite, in combination with modern medical techniques. The positive response of the patient demonstrates the importance of the ethnopharmacological response, even with present-day medicine.

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Due to the nature of ritualistic curing, few records of treatment observed under strict clinical conditions exist in the literature. This paper documents a case of shamanistic "tobacco curing", in combination with modern medical methods for the treatment of snakebite, under the observation of a medical doctor and ethnobotanist, among the Guahibo of the Colombian Llanos (eastern plains).

Tobacco has long been a plant of esteem and importance among Indian tribes of South America. Two kinds are usually utilized: *Nicotiana tabacum* L., the common smoking tobacco; and *N. rustica* L., with its higher nicotine content, more often used as an hallucinogen in divine communication. Shamanistic practices involve a number of different tobacco preparations, ingested or applied in sundry ways. Such mixtures are used to cure ailments ranging from simple to life-threatening. Wilbert (1975) discussed Jivaro use of a decoction of tobacco in water for the treatment of snakebite: "...believed to fortify a person against evil spirits...the magical power of tobacco also radiates outward from the drinker and predisposes in his favor the elements of his entire environment."

The Guahibo, until recently a nomadic people, inhabit the savannah and gallery forests of the Orinoco drainage area of South America. In the

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past, their use of plants was extensive; today due to acculturation and a sedentary life-style much of their herbal uses and curatives have become secondary in importance to their dependence on modern drugs. Yet still today the shaman plays a significant role as a healer in the community. The following case study documents a snakebite treatment by both modern medical methods and that of a Guahibo shaman. The patient received medical treatment by one of us (M. Z.) while we both observed the procedure of the shaman.

The bite of venomous snakes is a common cause of illness and death in the Llanos of Colombia, and many cases involving this condition are seen and treated at the "Las Gaviotas" Medical Center. Several kinds of poisonous snakes inhabit this region, and accidents with various *Bothrops* species are routine. Bites occur most frequently in the early part of the rainy season (April-June).

On May 16, 1978, a Guahibo male, aged 24 years, was admitted to the Medical Center. He had been bitten by a *Bothrops* "Montoñosa" 24 hours before with no treatment having been applied prior to his arrival. The patient was pale, confused and incoherent. Blood pressure was a low 90/50, pulse 100, cardiac frequency 100, respiratory frequency 32, and temperature 36.2 °C. The bite was on the right leg (Fig. 1). There was severe edema and hyperthermia with compressed distal blood flow, causing cyanosis (a purplish discoloration). There were numerous blood-filled vesicles. Additionally, the liver was enlarged with edema of the abdominal wall present on the inferior and right side of the abdomen.

Petechiae (minute hemorrhagic spots) were found on the tongue and mouth. Anuria was present. A sample of 70 ml of urine was obtained by catheterization, which revealed marked hemoglobinuria and proteinuria (200 mg%). Thus, both the local and systemic effects of severe venom



Fig. 1. Right leg of patient some days after being bitten by snake. By this time, gaseous gangrene had developed.



poisoning were apparent; for example, hemorrhagic vesicles and impaired local circulation, hypotension (lowered blood pressure), coagulation defects, with hemoglobinuria and acute kidney failure.

Immediately upon arrival, anti-bothropic serum was administered both intravenously and intramuscularly to neutralize 200 mg of venom. Liquids were also given intravenously. Tetracycline and Dipyrone were administered. The patient clearly manifested a toxic delirium. It was necessary to immobilize him to maintain the intravenous feedings.

The prognosis of the patient was very poor and his condition serious. Transport to more complete medical facilities was out of the question. During the rainy season the roads are quite bad and, in fact, the nearest larger hospital was a minimum of three days away.

Thirty minutes later, as the condition of the patient worsened, a Guahibo shaman (also a patient at the center) requested permission to give a "smoke-blowing treatment". As Western medical theory is still somewhat new and alien to the Guahibo of this region, shamans are a very important part of their culture, and for many the only health service available. Thus permission was granted for this treatment.

The shaman is known as *suerbe-yopo* or *yopo* sucker among the tribe. This is in reference to his use of *yopo*, a leguminous snuff powder made from *Anadenanthera peregrina* (L.) Speg., which is a major part of the Gua-

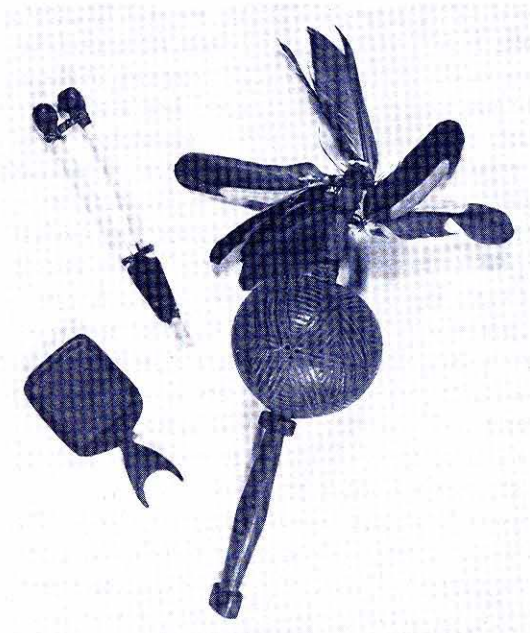


Fig. 2. Tools of the Guahibo shaman: a feather-topped rattle (right) to summon or contest the spirits; a bird-bone snuffing tube (upper left) to inhale *yopo* powder, topped with seeds of *Maximiliana maripa* (Correa de Serra) Drude to ensure a tight fit against the nostrils; and a carved wooden plate (lower left) to hold the *Anadenanthera* snuff.

hibo curing ritual. Figure 2 illustrates his tools: a feather-topped rattle to summon or contest the spirits, a bird-bone snuffing tube to inhale the *yopo* powder and a carved wooden plate to hold the snuff. These paraphernalia were not available to the shaman in this particular case, and it is unknown to us whether the shaman would have used such implements at all for a case of snakebite. Instead, he asked for three cigarettes (*Nicotiana tabacum*). Upon lighting the first, he began a monotonous chant similar to the song of a nocturnal bird, as follows:

“...Uculí, Uculí, Uculí  
Urubá, Urubá, Urubá  
Choguë, Choguë, Choguë...”

He began by chanting this song towards the head of the patient and, upon finishing, inhaled the smoke deeply to expel it towards the patient's head. This procedure was repeated with the arms and legs. Subsequently, the shaman requested a cup of water, in which he extinguished the cigarette and left it to soak. While continuing the same chant, he sprinkled this “tobacco water” on the patient's head and extremities.

The entire procedure lasted a half hour. During the first few minutes of the ritual, it became very clear that the patient was becoming calmer. This might be explained by the improved hydration and/or previously administered analgesics. However, resultant effects such as these are not usually observed so quickly or so drastically in the many similar cases of snakebite treated with conventional medicine at the “Las Gaviotas” hospital. We are, therefore, led to conclude that the smoke-blowing treatment had a strong psychological effect on the patient. Within minutes after completion the patient relaxed and his vital signs returned to normal despite that objectively he was in a toxic state. Subsequently, the patient's general condition improved and within four days the problem was confined to the leg. Unfortunately, gaseous gangrene developed with no response to treatment, and it became necessary to amputate the right leg on the sixteenth day of hospitalization. Decubitus ulcers developed and were treated with local application of “panella”, a raw extract from cane sugar (*Saccharum officinarum* L.). After this, the recovery rate of the patient was satisfactory. He was discharged two months later, in good health and with normal liver and kidney functions. A plastic prosthesis is now worn by the patient, who has been able to resume his normal traditional life-style as a hunter-gatherer.

Several conclusions can be drawn from the preceding case history. The spiritual beliefs and needs of the Guahibo play a significant role in the consideration of any major medical treatment. Their introduction to modern medicine is not often accompanied by total acceptance or trust. Great importance still is attached to the shaman's therapy in his fight against the evil spirits that otherwise would attack and claim the body of the victim. The unusually quick calming response and return to normal of the patient's vital signs can very likely be attributed, in large part, to the tobacco curing cere-



mony. His ultimate survival, in our opinion, reflects the patient's strong belief and trust in traditional shamanistic medicine. Tobacco is clearly an important part of the Guahibo ethnopharmacopoeia. It is not known whether *Nicotiana tabacum* or *N. rustica* is used by the shaman under more normal circumstances in his own environment.

A case such as this demonstrates the importance of the ethnopharmacological response, even in the presence of modern medicine. These people, not familiar with twentieth century medicine, have a demonstrated psychological need to identify with their own culture during medical treatment. In addition, the importance of treating the spirit, as well as the outward symptoms, in traumatic cases is implicit, and goes beyond cultural and technological boundaries. Doubtlessly there are many valuable lessons to be learned from first-hand ethnopharmacological observations by qualified observers. Research such as this appears a virgin but fertile field of scientific investigation in a poorly understood area. This small example serves to underline the importance of biomedical field research among indigenous peoples and, it is hoped, will stimulate future observations by other workers.

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