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# LANCE-HEADED VIPER (*Bothrops moojeni*) BITE WOUNDING THE EYE.

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## SUMMARY

A 5-year-old girl was bitten in her left eye by a lance-headed viper identified as *Bothrops moojeni*, measuring 115 cm of length. There was severe facial swelling and left exophthalmus, and enucleation of the eye was necessary. The patient apparently had mild systemic envenoming, but local inflammatory signs and histological evidence of necrosis suggest that both the mechanical trauma and the local action of the venom had a role in the genesis of the eye lesion. It is arguable if the loss of the eye could be prevented even if the antivenom was administered earlier.

*KEY WORDS*: *Bothrops moojeni*; Eye enucleation; Eye injuries; Snake bites.

## INTRODUCTION

Lance-headed vipers (species of the genus *Bothrops*) cause most of the cases of snakes bite in Brazil. The venom of snakes of this group has proteolytic, haemorrhagic and coagulant effects, the latter caused by its thrombin-like action and, in some species, also by the activation of factor X and prothrombin [3,8]. People bitten by these snakes may present local swelling, ecchymosis and blisters, and have as complications local abscesses and necrosis. Another common feature of *Bothrops* envenoming is bleeding of the gums, but other haemorrhagic manifestations have been described. In about 40% of the cases the blood is incoagulable[2].

We herein describe a very uncommon case of bite in the eye, with exophthalmus, in which enucleation was required.

## CASE REPORT

A 5-year-old girl living in a farm in the municipality of Campina Verde, in southwestern Minas Gerais state, southeastern Brazil, had a direct injury in her left eye by a snake bite while she was asleep in her bed during the night. The snake was captured and identified as *Bothrops moojeni*; it measured 115 cm of length. At least 3 hours after the bite, the child was given antivenom in a dose to neutralize 60 mg of *Bothrops* venom in a local hospital and then referred to the teaching hospital of the Universidade Federal de Uberlândia, where she arrived about 12 hours after the bite. She did not complain of pain, but at physical examination presented gross facial swelling, bilateral periorbital ecchymoses, and exophthalmus of the left eye with local bleeding (Figure). Fang marks were noted on her left upper eyelid.

Blood tests displayed haemoglobin of 13.8, haemotocrit of 41%, 26 300 leucocytes per mm3 (22% band forms, 56% neutrophils, 21% lymphocytes, 1% monocytes), and 300 000 platelets per mm3. The clotting time was 10 minutes.

The patient was given *Bothrops* antivenom to neutralize 125 mg of venom about one hour after being admitted. Intravenous penicillin and, lately, ampicillin, were administered empirically. Enucleation of the left eye was performed under general anesthesia about nine hours after the patient's admission to the hospital. Recovery was uneventful and a ocular prosthesis was placed lately.

Histological examination of fragments of choroid, smooth muscle, sclera, cornea and adipose tissue showed areas of necrosis, haemorrhage and infiltrate of lymphocytes, plasma cells and neutrophils.

## DISCUSSION

*Bothrops moojeni* is the most common venomous snake in parts of central and southeastern

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Figure — Aspect of the patient about 12 hours after the bite.

Brazil, and severe cases have been ascribed to such species. Severe cases of *Bothrops* bite have been related to the size of the snake[4], to prolonged clotting time[7], to bites in fingers or toes, and to use of a tourniquet[8].

The eye may be involved directly or indirectly in snake bite. Eye involvement is a relatively common finding in envenoming by spitting cobras in Africa and Asia[9]. In the Americas, ophthalmoplegia is a well known finding of the neurotoxic envenoming by coral snakes (genus *Micrurus*), and by South American rattlesnakes (*Crotalus durissus terrificus* and other subspecies)[8]. There is a single report in the literature of bilateral neuroretinitis following South American rattlesnake bite[5]. We know of only one case of *Bothrops* bite wounding the eye[10], in which enucleation of the eye was also necessary.

Our patient was only given a dose of specific antivenom that was about the one recommended for "moderate" cases[1], but two thirds of it were administered only 13 hours after the bite. She was bitten by a large snake, and one would expect that she had a severe envenoming. Nevertheless, at that time the clotting time was normal, suggesting that the amount of antivenom given initially was enough at least to neutralize the coagulant effect of the venom.

The local inflamatory signs and histological evidence of necrosis suggest that both mechanical trauma and local action of the venom had a role in the genesis of the eye lesion. It is arguable if the loss of the eye could be prevented even whether the recommended dose of antivenom was given immediately after the bite. There is evidence that local proteolytic effects of snake venoms are probably not prevented unless antivenom is given before two hours of the bite[9].

Fortunately, this case was not complicated by local infection, a feature that occurs in up to 18% of **Bothrops** bites[7]. The main bacteria isolated from abscesses following **Bothrops** bites are Enterobacteriacea, and both the antibiotics used in this case (penicillin and ampicillin) have been shown to have poor **in vitro** activity against them[6].

## RESUMO

**Acidente botrópico (Bothrops moojeni) com ferimento ocular.**

Uma menina de 5 anos de idade foi picada no olho esquerdo por uma serpente da espécie **Bothrops moojeni**, que media 115 cm de comprimento. Houve intenso edema facial e exoftalmia; enucleação do olho foi necessária. A paciente aparentemente apresentou um envenenamento sistêmico leve, mas os sinais inflamatórios locais e a evidência histológica de necrose sugerem que tanto o traumatismo mecânico como a ação local do veneno tiveram um papel na gênese da lesão ocular. É questionável se o prognóstico da lesão ocular teria sido diferente se o antiveneno tivesse sido administrado em dose adequada mais precocemente.

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