tory of neurological disability, the time of its development makes it reasonable to relate it to the electrical injury. The investigations would tend to exclude mechanical trauma to the cord, since repeated cervical radiographs were normal and there was no evidence of a block, xanthochromia, or red blood cells on lumbar puncture. While it is conceded that the whiplash type of injury can produce such a lesion with normal radiographic appearances, the neurological damage appears either at the moment of injury or at some later stage due to a subsequent slip of the vertebrae. Not only was the onset of his symptoms delayed but the lesion was progressive. Eventually it regressed spontaneously, with no evidence of injury to the cervical spine.

The history and clinical features are very similar to those of the cases described by Panse (1930), who emphasized the wasting in the upper limbs with spasticity in the lower limbs and minimal sensory involvement, mimicking motor neurone disease. A transient and immediate quadriplegia occurring after electrical injury has been described by Silversides (1964) and others. We have no evidence that this occurred in the present case, though the patient was unable to give a very clear account of his condition before arrival at hospital. What is clear is that his condition deteriorated after the eighth day and was at its worst by the 21st day, after which a fairly rapid improvement took place. The features are similar to the other myelopathies described, in that they followed an electrical injury in the order of 33,000 volts, there being some evidence that the current may have passed from one hand to the other across the body. Obviously, in this case the evidence rests on the clinical findings.

It is of interest that the patient also developed two other recognized complications of electrical injury—E.C.G. changes and bilateral cataracts.

We wish to thank Mr. D. O. Maisels, consultant plastic surgeon, for permission to publish this report, and Dr. R. A. Yorke, registrar in electromyography at Liverpool Royal Infirmary, for his expert help.

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Case of African Cobra Bite

British Medical Journal, 1970, 4, 660

Cobras are widely distributed throughout Asia and Africa. Cases of Asian cobra bite have been thoroughly documented (Reid, 1964), but African cobra bite does not appear to have been reported.

CASE REPORT

The patient, a 62-year-old European woman living on a ranch near Voi, Kenya, was bitten on the sole of her left foot on 26 March 1969 when a snake climbed under her mosquito-net. The

snake was shot on the spot by the patient's husband and later identified by the chief game warden, Coast Province, as *Naja nigricollis pallida*, the black-necked spitting cobra.

The patient complained of severe pain at the site of the bite. She was rushed to the nearest district hospital, where she was immediately given polyvalent antivenom (Behringwerke AG, Marburg, Germany)—10 ml. was injected into the region of the bite and 10 ml. into a vein in the left upper thigh. The injections produced an immediate serum reaction, with severe headache, central chest pain, and a generalized urticaria. This was 20 minutes after the envenoming, and a doctor arrived 10 minutes later. He gave intravenous antihistamine and subcutaneous adrenaline for the serum reaction and morphine for the pain.

Her general condition became satisfactory and next day she travelled the 100 miles (160 km.) to Mombasa. She still had severe pain in the foot and mild central chest pain. On examination she was alert and afebrile, the pulse rate was 74/min. and the blood pressure 140/80 mm. Hg, and her general condition was good. There was no ptosis and no muscular weakness. Her trunk and limbs were covered with giant urticaria. The left foot was very swollen from the ankle downwards, and two puncture wounds were visible on the sole of the foot. There was also diminished sensation to pin-prick on the plantar surfaces of the first three left toes.

She was admitted to hospital, the foot of the bed was raised, and she was given pethidine, promethazine hydrochloride, and oxytetracycline 250 mg. six-hourly. After 48 hours she had recovered completely from the serum reaction, but the foot remained swollen and painful. Four days after the bite the swelling had gone down but there appeared to be a collection of pus under the puncture wounds. This was incised and found to be sloughing adipose tissue. The slough was excised leaving a hole about 2 cm. across and 1 cm. deep. Seven days after the bite the patient was sent home with dry dressings and was given tetracycline for a further week. It took three months for the hole to finally heal and for normal sensation to return to her toes.

COMMENT

The principal features of this case were severe local pain, local swelling, and, after a few days, local necrosis. These three features have been noted in many recorded cases of Asian cobra bite (Reid, 1964). This case was complicated by a serum reaction from the use of antivenom as a first-aid measure.

Local Swelling.—This is an important diagnostic point in neurotoxic snakebite poisoning in Africa. The main African neurotoxic snakes are the cobra and the mamba. Cobra-bite poisoning causes local swelling, whereas in mamba-bite poisoning local swelling is absent. It is particularly important to note the difference, since the appropriate antivenoms are quite different.

Indications for use of Antivenom.—Reid (1964, 1968) has clearly established that antivenom is indicated only when generalized systemic poisoning is clinically evident. Under those circumstances the dosage should be at least 100 ml., and the intravenous route is mandatory. In this case there was no objective apathy, no ptosis or other muscular paresis, and therefore no generalized systemic poisoning. Antivenom was therefore not indicated. The antivenom merely caused a severe serum reaction and would have been an inadequate dose anyway had systemic poisoning occurred. In view of the frequency and dangers of serum reaction and the rarity of systemic snake-bite poisoning it is hard to see a place for the use of antivenom as a first-aid measure by the lay public.

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