

Unilateral Vision Loss in A Patient of Snake Bite with Acute Renal Failure

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ABSTRACT

Patients with snake bite are frequently admitted to medicine wards. They generally present with neurologic or hematologic complications of snake bite. The ophthalmologic complications of snake bite are rare. Here we present the case of snake bite with unilateral vision loss.

Introduction :

Patients with snake bite are frequently admitted to medicine wards. They generally present with neurologic or hematologic complications of snake bite. The ophthalmologic complications of snake bite are rare. Here we present the case of snake bite with unilateral vision loss.

Case report

A 22 year female a case of Snake bite left lower limb 5 days old was referred from periphery to our institution for management of Acute Renal failure. She received ASV and other supportive treatment already. On physical examination she was drowsy, febrile with body Temperature 100°F, Pulse 100/min & normal respiration. She had edema feet, & puffiness of face. Except for left lower limb cellulitis no other significant abnormalities were observed. Her systemic examination was normal. She was further evaluated for acute renal failure.

On Investigations Hb was 8.4 gm%. TLC was 13,200 / cumm. Differential count showed mild polymorpholeukocytosis with Platelet count of 24000. Whole blood clotting time (WBCT) was normal (< 20mins,) INR was 1.56. Her renal function tests revealed blood urea 116 mg/dl & serum creatinine 2.7 mg/dl, Urine output - 400 ml/24 hr.

She received 4 units of Platelets, Diuretics & 24 cycles of peritoneal dialysis. She showed improvement. Her urine output increased & renal parameters started declining over a period of 3-4 days. Post dialysis on day 5 she started complaining of headache. There was no focal neuro deficit. For her persistent headache possibility of intracranial bleed was entertained. Next day she complained painful right eye & loss of vision. Local examination of Right eye was normal but there was total loss of vision of right eye. Left eye was normal. Fundus examination of right eye revealed clear media but hyperemic disc & blurred disc margins suggestive of papillitis. Left eye fundus examination was normal. B scan of both the eyes was normal. MRI brain was normal. Ophthalmologist confirmed the diagnosis of papillitis. Patient was put on Inj. Methylprednisolone 1 gm iv od for 3 days followed by tapering doses of steroids for short duration. Her vision improved over a period of 4-5 days. It was 6/6 on day 7.

Her kidney function also improved. Blood urea came down to 30 mg/dl & serum creatinine - 0.9 mg/dl. Patient was discharged on day 15 with a diagnosis of Vasculotoxic Snake bite left lower limb with acute renal failure with right eye papillitis. Patient was followed up for 3 months & showed normal vision & Kidney functions.

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Figure 1 : showing fundus examination of patient showing optic disc edema, hyperemia, ill defined optic disc margins.



Discussion :

India is estimated to have the highest snakebite mortality in the world. World Health Organization (WHO) estimates place the number of bites to be 83,000 per annum with 11,000 deaths.¹ In Indian subcontinent with a mortality rate is very high, almost upto 25%.^{1,2} However, ophthalmic complications in snake bite are rare. In one of the study from tertiary care institute conducted by Praveen Kumar et al, incidence of ophthalmic complication reported is 7.05% out of total 170 snake bite cases admitted.³ Of those with ocular involvement bilateral angle closure glaucoma was the most common ocular manifestation followed by anterior uveitis and external ophthalmoplegia.³ The optic neuritis is very rare. Only few case reports are available in literature.

The common ophthalmic disorders described after snakebites are neurological disturbance in the form of ophthalmoplegia and ptosis. Other ocular disturbances observed as effects of snakebites range from keratomalacia to vitreous hemorrhage, subconjunctival hemorrhage, hyphema, retinal hemorrhage, uveitis, glaucoma, central retinal artery occlusion, macular infarction, optic neuritis, penetrating eye injury, globe necrosis and visual loss

due to cortical infarction.

The possible causes of optic neuritis following snake bite have been postulated to be Snake venom or allergy to snake venom. Snake venom can injure the visual system by damaging the retinal cells, extensive haemorrhages, capillary damage. Also the ophthalmologic involvement can occur secondary to delayed reaction to ASV. It can occur in the form of optic neuritis, retinal and optic nerve edema, uveitis, optic atrophy and cortical blindness.^{3,4} The optic nerve may be affected by inflammation in any part of its course. The clinical term optic neuritis implies involvement of any part of the optic nerve by an inflammatory disease process. Papillitis is the term for a specific type of optic neuritis. If ocular inflammation is restricted to the optic nerve head the condition is called papillitis (or intraocular optic neuritis), and if it is located in the orbital portion of the nerve it is called retrobulbar optic neuritis (or orbital optic neuritis). The various case reports have attributed to either of theory.^{5,6} Mathur reported a case of non-poisonous snake bite which developed optic neuritis following administration of ASV. He attributed it to ASV.⁵ Rao reported immediate development of blindness following a cobra bite and attributed it to the toxic influence of the venom itself.⁵ Kweon reported a case that developed vision loss due to bilateral retinal and subretinal hemorrhage following viper bite. V Menon reported a case of development of bilateral retrobulbar neuritis following a bite by the Indian black cobra. They attributed the immediate fall in vision to the effect of the snake venom, and the subsequent decrease on the 6th day to allergic reaction developing after ASV administration.⁷ In our case, the vision loss occurred on 6th day, hence may be attributed to allergic reaction to ASV or may be related to snakebite itself.

Steroids have been used to treat optic neuritis following snake bite in all majority of reported cases.^{2,3,6} The vision was reported to improve in all but took longer in the cases which were not given any steroids. Pulse steroid therapy with intravenous methylprednisolone proved to be effective in such cases of optic neuritis.^{3,6,7}

This case highlights that optic neuritis following snake bite is a rare but distinct entity. Visual prognosis is fairly good and steroids have a definite role in hastening recovery.

Conflicts of interest : none reported by authors

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