

Original Research Article

Study of ocular manifestation of snake bite at tertiary care hospital, Valsad

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Abstract

Introduction: All over the world, cases of snake bite via poisonous snakes are common and as India is a tropical country great variety of snakes are present. Almost 60,000 people are bitten by snakes every year in India with a mortality rate of almost 25%. Various ocular manifestations like angle closure glaucoma, optic neuritis, external ophthalmoplegia and vitreous hemorrhage following snake bite may result in blindness. The present study was conducted with an aim to study various ocular manifestations of snake bite among cases came to tertiary care hospital, Valsad.

Materials and methods: Total 100 cases were included with history of snake bite with ocular manifestations over a period of 2 years from January 2015 to December 2017 from records at tertiary care hospital, Valsad. Detail history and complete ophthalmologic examination findings of every case were taken for study.

Results: Out of 100 cases, 78 were male and 22 were female. Maximum cases (26%) were in age group of 41-50 years while least cases (4%) were in age group of ≤ 10 years. Most common snake was viper (71%) unknown (17%) followed by cobra (12%). Most common ocular manifestation was subconjunctival hemorrhage (70%), followed by acute anterior unweitis (32%). Least common finding was external ophthalmoplegia (12%).

Conclusion: Subconjunctival hemorrhage is the most common finding in snake bite case with ocular manifestation. Male are more prone to snake bite and cases are common in age group of 41-50 years.

Key words

Ocular changes, Snake bite, Valsad.

Introduction

All over the world, cases of snake bite via poisonous snakes are common and as India is a tropical country great variety of snakes are present. In Gujarat, particularly in Valsad district viper is most common along with other species and cobra. Almost 60,000 people are bitten by snakes every year in India with a mortality rate of almost 25% [1]. Due to composition of snake venom, many times ophthalmic complications may occur [1, 2]. Various ocular manifestations like angle closure glaucoma, optic neuritis, external ophthalmoplegia and vitreous hemorrhage following snake bite may result in blindness. The present study was conducted with an aim to study various ocular manifestations of snake bite among cases came to tertiary care hospital, Valsad.

Materials and methods

It was a retrospective, observational study done after obtaining Institutional ethical committee approval. Total 100 cases were included with history of snake bite with ocular manifestations over a period of 2 years from January 2015 to December 2017 from records at tertiary care hospital, Valsad. Detail history and complete ophthalmologic examination findings of every case were taken for study. The types of snake and ocular complications as per case records were analyzed.

Results

Total 100 cases were analyzed as per the records available from January 2015 to December 2017 for period of 2 years. Out of 100 cases, 78 were male and 22 were female. Maximum cases (26%) were in age group of 41-50 years while least cases (4%) were in age group of ≤ 10 years. Most common snake was viper (71%) unknown (17%) followed by cobra (12%) as per **Table - 1**.

Most common ocular manifestation was subconjunctival hemorrhage (70%), followed by acute anterior unveitis (32%). Least common finding was external ophthalmoplegia (12%) as per **Table - 2**.

Table – 1: Demographic details of the cases.

Demographic data	Cases	%
Age (Years)		
≤ 10	4	4
11-20	6	6
21-30	14	14
31-40	20	20
41-50	26	26
51-60	19	19
>60	11	11
Gender		
Male	78	78
Female	22	22
Type of snake		
Viper	71	71
Cobra	12	12
Unknown	17	17

Table – 2: Ocular manifestations of snake bite.

Ocular manifestation	Cases	%
Subconjunctival hemorrhage	70	70
Acute angle closure glaucoma	17	17
Acute anterior uveitis	32	32
External ophthalmoplegia	12	12
Exudative retinal detachment	17	17
Optic neuritis	22	22

Discussion

Snake bite may cause multi organ involvement with inclusion of ocular symptoms sometimes. In our study, males were more commonly involved which is in accordance with studies from India as reported by Halesha, et al. [3] and Jarwani, et al. [4]. Males are the most common victims of snake bite probably due to their outdoor occupation.

In our study, viperine snake bite was more common as Valsad district is more habitant for vipers compared to cobra while in other studies cobra was more common compare to viper [4, 5]. In our study, subconjunctival hemorrhage was more common ocular manifestation. Various ocular findings were described in the literature are bilateral angle closure glaucoma, chemical injury to the eye from spitting of highly irritant snake venom [6, 7].

The mechanism of acute angle closure glaucoma following snake bite is not known. One study revealed that it occur as a result of the capillary damage due to snake venom, producing ciliary body edema and forward movement with pupillary block and subsequent angle closure [8]. Idiosyncratic reaction to anti-snake venom (ASV) may result in the development of ciliary body edema resulting in subsequent angle closure can explain the mechanism in such cases. The present article described as a rare presentation of optic neuritis with concomitant anterior uveitis following a snake bite. Exudative retinal detachment following a snake bite is also reported in our study. The cause of exudative retinal detachment is not known. One study revealed that toxins present in venom of a hemotoxic snake bite leads to capillary damage resulting in widespread choroidopathy, causing massive exudation of fluid into the subretinal space resulting in exudative retinal detachment [9].

Conclusion

Subconjunctival hemorrhage is the most common finding in snake bite case with ocular manifestation. Male are more prone to snake bite and cases are common in age group of 41-50 years.

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