



Original communication

Incidence of fatal snake bite in Loni, Maharashtra: An autopsy based retrospective study (2004–2014)



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ABSTRACT

Snake bite is a major public health problem specially in a rural region where agricultural work is the major source of employment. A retrospective study was undertaken of all cases of deaths due to snake bite autopsied at the Mortuary of Pravara Rural Hospital, Loni a rural area in Western Maharashtra over a period of 10 years from January 2004 to December 2014. Data of the study was gathered from autopsy reports and hospital records. The cases represented approximately 2.13% (54) of the total 2539 medico legal autopsies conducted during the study period. Most of the deaths (42.60%) occurred in the age group of 11–30 years and both males and females were affected in almost equal proportions. There was a marked increase in the number of cases in monsoon season (59.26%). The lower extremity was the most frequently involved site of bite (62.96%). Snakes were identified in 43 cases (79.63%) and among the identified cases the most common culprit was Viper amounting to 29.63% of cases followed by Krait causing 24.07% of the deaths. The findings in our study reflects the necessity of educating the rural community regarding the hazards of snake bite, importance of early medical attention and to avoid wasting vital time being engaged by traditional healers.

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1. Introduction

India is one of the countries where snakes have been worshipped since ancient times. Since the dawn of civilization, snakes have appeared in various myths and mythologies, either as demon or as a god. It was way back in 326 BC, Alexander the Great was highly impressed by the skills of Indian physicians especially in the treatment of snakebite.¹ The first data mentioning burden of snake bite from India was published by Joseph Frayer in 1864.²

In rural India, farming is a major source of employment and snakebite is a very common occupational hazard.³ In majority of Indian states there is free supply of polyvalent antsnake venom. India is not a country where a large number of venomous snakes are found but it has constituted the largest number of deaths in the world as a result of snakebite i.e. 50,000/year.⁴

The fatalities due to snake bite reflected in data represent only the tip of the iceberg. It is because of various beliefs and taboos very few victims were brought in the hospitals for treatment.³ Among these few victims majority were brought lately after being treated by traditional healers.

The aim of this study was to review characteristics of the victims of fatal snakebite, which were autopsied in a tertiary care hospital of Rural Medical College, Loni, a rural region of Western Maharashtra, India. Western Maharashtra includes districts of Pune, Solapur, Satara, Sangli, Kolhapur and Ahmednagar. This belt has fertile land with good irrigation and is famous for its sugar factories. Loni is a small village of Ahmednagar District (Taluka – Rahata) situated

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26 km from Shirdi (Holy place of Saibaba) and around 250 km from Mumbai, the financial and commercial capital of India.

2. Materials and methods

The retrospective descriptive study was carried out at Department of Forensic Medicine, Rural Medical College of Pravara Institute of Medical Sciences, Loni over a period of 10 years from January 2004 to December 2014. Pravara Rural Hospital is a tertiary care hospital and the teaching hospital of Rural Medical College. The hospital provides health care services especially to the rural population. Approval for study was obtained from Institutional Ethics Committee.

The records of snake bite victims were obtained from the hospital records and medico legal postmortem reports. All other bites other than snake bite were excluded from the study. Data was obtained in relation to type of snake, site of bite, place and time of bite; activity during the bite and socio-demographic profile of the victims (Graph 1).

3. Results

Out of the total 2539 medico legal autopsies conducted in the study period, 54 cases were due to fatal snake bite envenomation which constitutes around 2.13% of the total cases. Both males and females were affected almost in equal proportions and the male/female ratio was 0.9. Most of the deaths (42.60%) occurred in the age group of 11–30 years followed by the paediatric age group i.e. 0–10 years contributing 22.22% of the cases. Majority of the victims (37.04%) were farmer by occupation followed by housewife (22.22%) (Table 1). The peak incidence of fatal snake bite (59.26%) was seen in the monsoon season in the months of June to September and most of the bites (74.07%) were seen during day time. Most of the cases (33.33%) occurred in the farms while 24.07% cases occurred in the street and 20.38% cases took place at indoor environment (Table 2). Snakes were identified in 43 cases out of which only 14 snakes were brought to our hospital. Among the identified cases the most common culprit was Viper amounting to 29.63% of cases followed by Krait causing 24.07% of the deaths (Table 3). Most of the cases (33.33%) occurred in outdoor environment most commonly in the farms, 16.67% cases occurred while walking and 12.96% cases took place while working at home (Table 4). The most common site of bite were the lower extremities where 62.96% of bite marks were located followed by the upper extremities (29.63%) and head and neck (Table 5). 35 victims were admitted in our rural hospital while 19 cases were brought in dead to our institute.



Graph 1. Yearwise distribution of snake bite cases (2004–14).

Table 1
Demographic profile of victims of fatal snake bite.

	n	%
Total number of autopsies	2539	100
Total fatal snake bite	54	2.13
Sex		
Male	26	48.15
Female	28	51.85
Marital status		
Married	33	61.11
Unmarried	21	38.89
Age		
00–10	12	22.22
11–20	09	16.67
21–30	14	25.93
31–40	09	16.67
41–50	05	9.26
51–60	03	5.55
>60	02	3.70
Occupation		
Farmer	20	37.04
Housewife	12	22.22
Student	10	18.52
Not known	09	16.67
Snake-charmers	03	5.55
Identification of snake		
Snake seen & not brought	29	53.70
Snake seen & brought	14	25.93
Snake not seen	11	20.37

Table 2
Distribution in relation to season, time and place of occurrence.

	n	%
Season		
Oct–Jan (winter)	18	33.33
Feb–May (summer)	04	7.41
Jun–Sep (monsoon)	32	59.26
Time		
06am–12pm	19	35.19
12pm–06pm	21	38.89
06pm–12am	11	20.37
12am–06am	03	5.55
Place of occurrence		
Farms	18	33.33
Street	13	24.07
Indoor	11	20.38
Jungle	07	12.96
Not known	05	9.26

Table 3
Type of snake.

	n = 43	%
Viper	16	29.63
Krait	13	24.07
Cobra	08	14.81
Not known	06	11.11

Table 4
Activities during bite.

	n	%
Working at farm	18	33.33
Walking	09	16.67
Working at home	07	12.96
Playing	06	11.11
Lying	04	7.41
Not known	10	18.52

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