
Scienxt Journal of Recent Trends in Toxicology

Volume-2 || Issue-1 || Jan-June || Year-2024 || pp. 1-9

Why the snakes bite: a conceptual study

***¹Prof. (Dr.) Dilip Kr. Goswami**

B.A.M.S, MD (Ayurveda), Ph. D. Dept. of Agadatantra
(Toxicology, Forensic Medicine and Medical Jurisprudence)
Sri Sri College of Ayurvedic Science and Research Hospital
Sri Sri University, Cuttack, Odisha, India

**Corresponding Author: Prof. (Dr.) Dilip Kr. Goswami*

Abstract:

Snakebite is not uncommon experience of the physicians. A physician of any field, specially working in the rural areas, experience snakebite frequently which in most of the times difficult to deal with. Though the number of poisonous snakes is said to be of very low percentage in comparison to the total number of snakes identified then also the number of death due to snakebite is not negligible. In almost all the cases of snakebite there is a common tendency to give the responsibility to the snake. In most of the times the actual cause behind the bite is not analysed. But when the classical concepts on the causes of snakebite (sarpadangsa hetu) is studied it becomes clear that, a number of causes are identified, elaborated and discussed by the Ayurvedic scholars in this concern.

Here an effort is given to explore and explain the concepts of the great scholars, Charaka, Susruta and Bagbhata on the specific point related to critical question “WHY SNAKES BITE?” as an effort to eliminate the common tendency to make the snakes responsible for bite always and also to expose the depth of study and research of the Ayurvedic scholars on the topic for appraisal of the modern scientists.

Keywords:

Snakebite, rural areas, causes of snakebite, to make the snakes responsible for bite

1. Introduction:

Snakes can be considered as the unavoidable creatures around us. Since creation snakes have been residing with us and in most concerns they are considered as respectable creatures with a number of friendly contributions to the human society and sometimes as the enemies. They are identified as the source of potent fatal poison in a number of situations. In the religious concerns they are honoured with mantra, offerings etc., in the environment conservation they are considered to be studied with special reference to their habit and behaviour. Even in the Ayurvedic classics they are described as the strongest creatures having the capacity to hold and destroy the creation with potent poison with them to cause harm like fire (immediately fatal).

There are a number of examples of unexpected death of some eminent personalities in ancient time and hence the snakes are always considered as the creatures dangerous and harmful by their nature. When any discussion is made on snakebite a number of facts come to mind among which the cause of snakebite is also important. As a common trust in the situations of snakebite the snakes are considered as responsible. In such cases nobody keeps the mentality to find out the cause why the bite occurred. But if an in depth search, study and observation is made it becomes clear that, there is interesting discussion on the causes of snakebite in the Ayurvedic classics which needs further study, discussion and justification. Hope this study will reveal the important facts on the topic and will inspire the scholars and researchers to work in the field for the benefit of the society.

2. Aims and objectives:

The literary study is aimed to the following aims and objectives –

1. To study the Ayurvedic classics to search about the concept of causes of bite by the snakes
2. To find out information on the same point from the modern sources , especially from the internet source
3. To try to discuss and justify the Ayurvedic concepts on the topic in modern light
4. To develop one summary and conclusion basing upon the observations of the study and give the form to the entire study of a scientific article
5. At the end to add references and send the article to a renowned peer reviewed popular journal expecting publication for wide circulation, appraisal and research on the Ayurvedic concepts on the topic

3. Materials and methods:

The study was conducted by using the below mentioned materials and following the method stated below –

1. Charaka Samhita, Susruta Samhita, Ashtanga Sangraha and Ashtanga Hridaya were studied in the Central Library of Sri Sri College of Ayurvedic Science and Research Hospital, Sri Sri University, Cuttack, Odisha, India
2. The statements available in the 4 classics on the causes of snakebite were noted
3. An effort was made to collect information on the topic from the internet sources
4. The informations available in the internet sources were noted
5. A comparative study of the Ayurvedic and modern concepts was made which was followed by a discussion to justify the Ayurvedic concepts
6. A summary and conclusion were added with the aim to provide message to the readers
7. Ultimately, adding references the article was sent to a popular, wide circulated peer reviewed journal for publication

4. Observation and result:

The study revealed the following observations and results -

4.1. Charaka samhita:

The great scholar of Ayurveda, father of Indian Medicine, Charaka discuss elaborately in the famous book Charaka Samhita about different aspects of snake, snake venom etc. which are very interesting and informative. But the study did not reveal discussion on the causes of snakebite.

4.2. Susruta samhita:

The father of Surgery, Susruta, in Susruta Samhita has discussed almost all aspects of snake related matters including the cause of snakebite (Sarpadangsahetu). The below mentioned was the information –

A snake bites due to the following causes –

1. Being touched / injured by the feet (Padabhimrishta)
2. Due to wicked nature (Dushta)
3. Due to anger (Kruddha)

4. With the desire to eat (Grasarthi)

4.3. Ashtanga hridaya:

Ashtanga Hridaya, another authentic book of Ayurveda has also discussed a large area related with the snake and snakebite. On the topic “causes of snakebite” the author mentions the following points –

1. To use the prey as food (Ahararthang)
2. Due to fear (Bhayat)
3. Being touched or injured with foot (Padasparshat)
4. Being over saturated with poison (Ativishat)
5. Being angry (Krudhah)
6. Due to sinful act of the individual (Papavrittitya)
7. Due to enmity with the individual (Bairat)
8. Being inspired by the Gods, sages, yamaraja etc. (Debarishiyamachodanat)

The strength of the poison increases depending upon the cause of bite in descending order i.e. the most poisonous bite is if it is due to the inspiration of the Gods , Sages , Yamaraja etc. and very less if bite is with the aim to use as food .

4.4. Ashtanga angraha:

Ashtanga Sangraha also states the same causes of snakebite as Ashtanga Hridaya.

4.5. Informations from internet sources:

In the search more informations were not found. Some informations gathered are as follows -

1. Snakes are most likely to bite when they feel threatened, startled, provoked or cornered
2. Agriculture workers and children are more vulnerable for snakebite

5. Discussion:

The observations of the study can be discussed as follows –

5.1. Padabhimrista:

The term can be understood in English as “getting touched or injured by the feet”. A person when walks through a place where snake is there may put his foot on it which causes pain /injury and getting injured , as a process of physiological reaction it reacts and since biting is

the only protective reaction it can do bites the stranger . Here though the pada (foot) is mentioned sometimes one can hold snake with hands also (example – during cleaning of a jungle area. The garden workers, engaged in collection of grass for cattle etc. are more prone). The statement clearly indicates towards a situation of causing pain to the snake with foot or hand and in return getting snake bite. Even only touch by a stranger a snake can bite due to its feeling of presence of a stranger that maybe its enemy (fear). Astanga Hridaya and Ashtanga Sangraha mention the same condition as “Padasparshat” indicating the same situation.

5.2. Dusta (due to wicked nature):

As understood from the terminology it can be assumed that, some snakes bears a wicked character by their nature. These snakes sometimes bite an individual even not having any clear cause like being touched or getting pain from the stranger.

5.3. Kruddha:

The word literally means and indicates a situation when the snake becomes angry due to some other situations since sometimes before and an individual by chance coming to its area may be bitten. This situation can be compared easily with the harm caused by an angry person to an innocent individual. Astanga Hridaya and Sangraha support the same condition and mention it as “Kruddhah”.

5.4. Grasarthi:

The word indicates the desire of the snake to eat. The common foods of snake are – rodent, frog, small reptiles etc. All they are the living organisms. Hence when a snake becomes hungry it has to overpower the prey by biting which is followed by swallowing. This biting occurs at a state of hunger of the snake. Astanga Hridaya and Sangraha mention the same as “Ahararthang”which indicates the same meaning.

5.5. Bhayat:

The word literally means and indicates “a state of fear”. When any living organism suffers from fear it immediately may react in two ways – (1) escapes from the situation and (2) tries to protect itself from the stranger by using its strength. When a snake faces a human immediately it tries to escape. But sometimes it feels no way to escape and attacks the stranger with its only weapon mouth which contains the fangs that injects poison. A snake may become afraid of only by seeing a person suddenly, by being attacked intentionally, being touched by any part of an individual (commonly with the foot or hand).

5.6. Ativishat:

The term means and indicates a state of having excessive quantity of poison. As per the Ayurvedic concept snakes contain poison in the whole body and expel it out through fangs when it becomes angry. This point is difficult to explain but can be assumed the background of this concept to be a reflex activity of the physiology of the snake to expel out the excess poison from the body by biting.

5.7. Papavrittitaya:

The term means and indicates that a person who involves himself in unsocial and unethical activities are bitten by snake. This is a situation very difficult to explain. But mythologically it is trusted that , papakarma (unsocial acts) makes the Gods angry and as a result they curse the person involved in such acts and as a result the person may die due to snakebite which is considered to be very pathetic and painful to tolerate . Mythology mentions a huge number of activities under the heading “PAPA”. The bite of Takshaka to the famous king Parikshita is also considered as the result of his sinful act of dishonouring a sage in deep meditation by garlanding him with a dead snake.

(8)The word “**THREATENED**” indicates the situations like feeling that something bad might happen or that someone might do something bad , “**STARTLED**” indicates surprised or frightened , “**PROVOKED**” indicates to stimulate or arousing, deliberately make annoyed or angry and “**CORNERED**” indicates forced into an awkward , embarrassing or inescapable position .

(9)The studies indicate that the persons mostly prone to snakebite are – children, cultivators, labour class people, field workers and persons who lives in rural areas in thatched, kuccha houses and sleep on floor without bed. Observation reflects that, there is every chance of holding a snake by a child due to its inability to differentiate the dangerous substance. The cultivators , labours , field workers have more chance to face the snake suddenly and even to cause pain to them with hand , foot , spade or other weapons commonly used by them during their normal works. Thatched houses with kuccha floor are preferred selter of rodents that are the most preferred food of the snakes. Hence the snakes, with a desire to take rodents etc. enters into the house and during its wait, by chance, if comes to contact or vision of man bites either due to fear or with the aim of self-protection.

(10)In the Indian mythological stories some incidences of snakebite are found. The story of conflict between the merchant Chand and the Goddess Manasa who is respected as the mother

of the snakes which was resulted in killing of Lakhindar who was the only alive son of the merchant was bitten by the most poisonous snake Takshaka by the order of the Goddess was also said to remain away from biting till lakhindar touched the body of Takshaka with his feet. This story is one of the best examples of devata – guru abhishapa and padabhimrista.

(11)The story of the king Parikshita killed by the bite of Takshaka, the most poisonous snake as a result of abhishapa (curse) of a sage due to misbehaviour shown towards his father is another example of sarpadangsa due to abhishapa.

6. Summary:

The summary of the present study can be made as follows –

1. The Ayurvedic classics viz. Susruta Samhita, Ashtanga Hridaya and Ashtanga Sangraha, in addition to detail discussion on snakes also give an interesting explanation on the causes of snakebite.
2. Susruta mentions 4 causes of snakebite which can be considered the explanation of all factors related to the topic
3. Bagbhata, in his famous books Ashtangahridaya and Ashtangasangraha, discuss 8 causes of snakebite which are seemed to be, to some extent, an extended form of the susruta's concept. He added some more points on the topic which are interesting.
4. It is observed that, the 2 scholars made extensive, systematic study and research on the topic and observed that, in most of the cases of snakebite human activity is responsible. Only in few number of cases snakebite occurs due to the harmful nature of the snake.
5. The causes of snakebite mentioned by the Ayurvedic scholars are seemed to be well justified and self-explanatory with scientific background.

7. Conclusion:

As conclusion of the present study it can be said that, the Ayurvedic scholars, before thousands of years, had scientific mind being inspired with which they conducted extensive, detail study on the topics. Study and discussion on the causes of snakebite (SARPADANGSA) can be considered as one of such scientific and scholarly attitude.

8. References:

- (1) Thakral Keval Krishna, Maharshina Susrutena birachita Susruta Samhita, Part -2 Edition – Reprint, 2019, Kalpasthana, Chapter 4, Sloka 13, 14
- (2) Tripathy Brahmananda, Astangahridayam of Srimadvagbhata, Edition – Reprint, 2022, Uttarasthanam, Chapter 36, Sloka 8, 9
- (3) Rao Srinivas P. Vagbhata's Astanga Samgraha , Volume -III , Edition – 2nd , 2019 , Uttarasthana , Chapter 41 , Sloka 30
- (4) Source – Internet, accessed on 22nd July, 2024, 10.00 P.M
- (5) Source – Internet, accessed on 22nd July, 2024, 10.30 P.M