



A CRITICAL REVIEW ON PHANA MARMA

SWAPNA RANI MEHER^{1*} SUSHIL DWIVEDI²

ABSTRACT:

Marma Sharira is an ancient traumatological Anatomy presented by both *Maharshi Sushruta* and *Acharya Vagbhata*. *Phana Marma* is considered as *Vaikalyakara Marma*, injury to this *Marma* leads to loss of smell, which is located in the head region, and plays an important role in the clinical aspect during traumatic brain injuries. Here, in *Phana Marma* the underlying structures are olfactory nerve fibers and olfactory bulbs which help with olfaction. Anosmia is the inability or decreased ability to smell. It can be permanent or temporary depending on the cause and damage. According to traumatic brain injuries (TBI), the risk of olfactory dysfunction varies. Recent Research data shows that an olfactory dysfunction incidence rate of 9.5% for mild TBI, 20% for moderate TBI, and 43.5% for severe (olfactory dysfunction because of damage to olfactory nerve fibers). In Ayurveda also the head region is considered as *Uthamanga* as compared to other body parts. So, we need a detailed study of the anatomical structure which may be considered as *Phana Marma*.

Keywords: *Marma, Phana Marma, Vaikalyakara Marma, Olfaction, Anosmia*

^{1*}Second Year PG Scholar, ²Reader, Dept. of Rachana Sharira, Shri Narayan Prasad awasthi govt. Ayurveda college, Raipur, Chhattisgarh, INDIA

Corresponding Email id: swapna.srm555@gmail.com Access this article online: www.jahm.co.in

Published by Atreya Ayurveda Publications under the license CC-by-NC-SA 4.0

INTRODUCTION

Ayurveda, the ancient science deals with maintaining good health and treatment of diseases. The *Marma Sharira* deals with the vital parts of the body; the person should prevent these areas from injuries. In Ancient literature *Marma Sthana* was used for an attack on an opponent during the war; each person should know *Marma* to prevent vital parts from all types of injuries. *Maharshi Sushruta* and *Acharya Vagbhata* mentioned 107 *Marmas* all over the body. During different classifications of *Marma*, both *Maharshi Sushruta* and *Acharya Vagbhata* consider *Phana Marma* under *Vaikalyakara Marma* and *Sira Marma*. *Phana Marma* is located in *Sirah Pradesha*, injury to this area leads to *Gandha Agyana*(Anosmia).

MATERIAL AND METHODS

Samhitas of Ayurveda such as -*Sushruta Samhita*, *Astanga Hridaya*, *Astanga Samgraha*, Modern Anatomy books, Research papers from journals, and relevant internet sites were availed.

RESULTS

Phana Marma

According to Samhitas

❖ *Sushruta Samhita*^[1]

Maharshi Sushruta mentioned that *Phana Marma* is a *Sira Marma* included in *Vaikalyakara Marma*. Its *Pramana* is *Ardha Anguli*. These are two in number and present on the upper side of the nasal cavity. Injury to this *Marma* leads to *Gandha Agyana*(Anosmia).

❖ *Astanga Samgraha*^[2]

On each side of the nostrils, adjoining the opening of the ears, inside, is the two *Phana Marma*; injury to these causes loss of perception of a smell.

❖ *Astanga Hridaya*^[3]

On each side of the nostrils, adjoining along with part of the Eustachian tube (*Srotamarga*), inside the throat is the two *Phana Marma*. Injury at this *Marma* leads to loss of smell sensation.

Olfactory Receptors^[4]

The Olfactory Receptors are embedded in a specialized patch of yellow tinted mucous membrane in the roof of the nasal cavity. These receptors are sieve-like foramina covered with modified, non-motile cilia. Axons from the olfactory receptors enter small nerve bundles (collectively termed the 1st cranial nerve) which pass through the sieve-like structures (foramens) present in the cribriform plate of ethmoid bone and enter the olfactory bulb. These nerve bundles are injured by the bony fragments of cribriform plate as a result of the Skull fractures in this region, act as weapon and causes partial or complete anosmia.

Olfactory Bulbs

The olfactory bulbs lie on the ventral aspect of the Frontal lobes. Within the olfactory bulbs the olfactory nerves synapse on mitral cells whose axons project directly to the olfactory cortex.

Olfactory Tract

The Olfactory Tract connects the Olfactory bulbs with the cerebral hemispheres. Axons of mitral

cells pass directly back to the olfactory cortex in the ipsilateral side.

Table No-1(Measurement of the Olfactory (Phana) Region)^[5,6,7]

Olfactory mucosa	0.1cm
Olfactory cilia	0.0002 cm
Cribriform plate	0.960 cm ²
Olfactory bulb	0.003-0.01

Discussion

Maharshi Sushruta and *Acharya Vagbhata* considered *Phana Marma* under *Vaikalyakara Marma* and *Sira Marma*. *Maharshi Sushruta* stated that *Phana Marma* is situated at the upper side of the nasal cavity. By considering the *Sloka* of *Phana Marma* according to *Vrudha Vagbhata* and *vagbhata: Srotapatha* is meant the door of *Srutisuranga*(path of auditory tube-opening of auditory tube). From this description the location of *Phana Marma* is in the *Nasa* and up to the *Srotamarga*. This place is called *Nasaguha*. In the upper part of the walls of nasal cavity the olfactory receptors are presents, through which the smell is received. Injury at this *Marma* leads to the disability referred as *Gandha Agyana* (Anosmia). *Antargale sthithi* is not appropriate for the location of *Phana Marma*. The measurement of *Phana Marma* is *Ardha Anguli*; (1 anguli-1.763cm) the structures which are responsible for olfaction are within its limit.

All the previous scholars of Ayurveda accept that the cribriform plate is responsible for the *Phana Marma*, and Injury on it results Anosmia. But in the view of *Ayurvedic Acharyas* and previous research scholars and the discussion

above, we observe that the cribriform plate is not responsible for *Phana Marma* and their Traumatic result. Because cribriform plate is a bony tissue which is not responsible for olfaction. All of us it clearly known that the nervous tissue is responsible for olfaction.

According to our hypothesis/opinion cribriform plate only acts as a weapon which damaged by a trauma and then the edges of foramens of cribriform plate damage olfactory fibers which passes with in these foramens. Due to damage of these olfactory fibers they can leads to anosmia.

Olfactory Nerve fibers takes origin from the olfactory mucosa and they pass through the small foramens of the cribriform plate and end in the olfactory bulb. Any injury inflicted on the anatomy of cribriform plate may damage the olfactory bulb or the olfactory nerve fibers resulting into loss of smell or Anosmia (*Gandha Agyana*). The olfactory nerve fibers can be damaged through trauma e.g. TBI; Blunt trauma to the head can lead to laceration of the olfactory nerve fibers as it crosses the ethmoid bone; infections can cause damage to the olfactory nerve fibers. Lesion to the olfactory nerve fibers can lead to Anosmia or hyposmia.

CONCLUSION

In the view of above discussion it is clear that at the site of *Phana Marma* described by *Sushruta*, cribriform plate and olfactory fibers are present. Trauma on this region the olfactory fibers damage by the edges of the foramens of cribriform plate .so it is concluded that olfactory fibers are

responsible for anosmia. This is the traumatic result of *Phana Marma*.

REFERENCES

1. B.G Ghanekar, Sushruta samhita, Sharira sthana,chapter 6,sloka 37, page number -198, meharchand laxman das publication, New Delhi,2007
2. Bramhanand Tripathi, Astanga Hridaya, Sharira Sthana, chapter 4,sloka number-32,Page-303 chaukhamba sanskrit pratisthan, New Delhi,2011
3. K.R.Srikantha Murthy,Astanga samgraha, Sharira Sthana,Chapter-7,sloka number-9,page-92,chaukhamba orientalia ,fifth edition ,vol-2,2005
4. Susan standring editor, gray's anatomy,48th edition,2008, Churchill Livingstone, Elsevier publishers,
5. localization and distribution of human olfactory mucosa, pedro escada, acta Med port 2013 may-june;26(3):200-207
<https://actamedicaportuguesa.com>
6. olfactory cilia: linking sensory cilia function and human diseases, chem senses,2009 jun;34(5):451-464,doi 10.1093/chemse/bjp020
<http://pubmed.ncbi.nlm.nih.gov>
7. (How big is olfactory bulb?) F.zufall, A.C. puche The senses: A comprehensive reference 2008
<http://www.sciencedirect.com>

CITE THIS ARTICLE AS

Swapna rani Meher, Sushil Dwivedi. A critical review on *Phana Marma*. *J of Ayurveda and Hol Med (JAHM)*. 2023;11(3):179-182

Conflict of interest: None

Source of support: None