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Case Report

Title of Article: Unlocking the Secrets of Phana Marma: A Fascinating Study on Cranium Injury

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Article Info:

Article History:

Received: 1 July 2023
Accepted: 31 July 2023
Published: 14 August 2023

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ISSN No.: 2583-5971

ABSTRACT

Many secrets are hidden at the core of Ayurveda science. *Marma Vigyan* is about those hidden traumatological points. It is fascinating to learn about the concept of *Marmas* in Ayurveda and the significance of *Phana marma* in particular. It is believed to have serious consequences if injured. *Phana Marma* is considered *Vaikalyakara Marma*, located in the Nasal region of the head, and plays an important role in the clinical aspect. Head injuries are considered serious due to the possibility of brain involvement, mostly occurring in road traffic accidents, the person dies or gets serious deformities. Here in *Phana Marma*, the underlying structures are the olfactory nerve and olfactory bulb which help in the sense of smell. If these get injured leads to *Gandha Agyanam* (Anosmia). Anosmia could be temporary or permanent depending on severity. In the present case report, A 25-year-old male patient had an accident resulting in head injury, swelling on the face, contused lacerated wound on the left eyebrow & eyelid with Nasal bleeding. On examination the patient was conscious, oriented, moving all 4 limbs, and had lost his sense of smell. Further examination revealed that he had a head injury, fractures in the nasal bone, nasal septum, and right maxilla. The patient underwent surgery and slowly recovered. However, he did not regain his sense of smell for nearly two weeks after the surgery. He gradually began to detect intense odors, and it took him almost three months to fully recover. In the present case report, the author is trying to evaluate the *Viddhalakshana* of *Phana Marma*.
Key words- Anosmia, Trauma, *Vaikalyakar Marma*

INTRODUCTION

The Science of Ayurveda included the understanding of *Marmas*. The concept of *Marma* has been a crucial aspect of Ayurveda, as it served as a common meeting point for various concepts related to prognostic values and healing practices. In ancient times, the practice of surgery was closely tied to warfare, as injuries sustained in battles necessitated medical attention and treatment. As a result, the field of ancient surgery and traumatology developed and evolved to address the injuries and wounds caused by combat.

In the absence of modern anatomical knowledge, ancient surgeons heavily relied on the principles and teachings of Ayurveda, which encompassed the understanding of *Marmas*. The convergence of *Mamsa* (muscle), *Sira* (blood vessels), *Snayu* (ligaments), *Asthi*, and *sandhi*, where *prana* rests, is the point known as *Marma*. *Marmas* were considered vital points in the body, and injuring them could lead to severe consequences ⁽¹⁾. This understanding of *Marmas* and their significance played an important role in surgical practices and medical interventions in ancient times.

Over time, as Medical knowledge advanced and anatomical studies developed, the field of surgery became more refined and sophisticated. The study of anatomy became a fundamental aspect of medical education, leading to greater proficiency in surgical procedures and medical interventions. While the significance of *Marmas* in Ayurveda remains valuable for holistic healthcare, modern medicine has integrated a broader understanding of anatomy and surgical techniques to provide effective treatments and surgical procedures for various conditions. Acharya Sushruta, the prominent ancient Ayurvedic scholar, has mentioned a total of 107 *Marmas* dispersed throughout the body ⁽²⁾. These *Marmas* are not only related to specific anatomical points but also correspond to important energy centers and channels in the body known as *nadis*. Manipulation of *Marmas* through various therapeutic techniques can positively influence the flow of energy (*prana*) in the body, promoting healing and well-being.

It is important for individuals to be aware of the location and vulnerability of these *Marmas* to prevent accidental injuries. In modern times, this knowledge can be valuable in various fields, including sports, physical activities, and healthcare practices. Overall, the concept of *Marma* in Ayurveda highlights the interconnection of the physical body and its energetic aspects. Respecting and protecting

these vital points can contribute to maintaining health and preventing unnecessary harm to oneself and others.

Phana marma is one of the 107 *marmas* present in the *urdhwajatrugat* region, above both sides of the nasal cavity. The term "*Phana*" denotes a snake hood, and the appearance of *Phana Marma* resembles that of a snake hood. It is $\frac{1}{2}$ *angul* in measurement. The exact location of *Phana marma* is the cribriform plate of ethmoid bone where olfactory epithelium, olfactory nerve fibers, and olfactory bulb are present. It is considered a *sira* and *vaikalyakar* type of *marma*, which means that an injury to this particular *Marma* can lead to serious anomalies like *gandhgyan nasha* (Anosmia) ⁽³⁾.

Anosmia is a medical term used to describe the loss or absence of the sense of smell. It can be either partial (hyposmia) or complete and may be temporary or permanent, depending on the cause and severity of the injury. Some common reasons for anosmia include:

- Respiratory infections: Viral infections like the common cold can lead to temporary anosmia due to inflammation and swelling in the nasal passages.
- Nasal blockage: Any obstruction in the nasal passages, such as a deviated septum or nasal polyps, can interfere with the ability to smell.
- Head injuries: Trauma to the head, particularly to the areas around the nose and olfactory nerves, can cause anosmia.
- Sinusitis: Inflammation of the sinuses can lead to a loss of smell.
- Neurological conditions: Certain neurological disorders, such as Alzheimer's disease, Parkinson's disease, or multiple sclerosis, may be associated with anosmia.
- Age-related changes: As people age, their sense of smell may diminish, leading to anosmia in some cases.
- Exposure to certain chemicals or toxins: Prolonged exposure to certain chemicals or toxins can damage the olfactory nerves and cause anosmia.
- Certain medications: Some medications, particularly those used in the treatment of nasal conditions, may have anosmia as a side effect ⁽⁴⁾.
- Sports injuries and road accidents carry the risk of injury to the head region, including the nasal cavity where *Phana Marma* is located.

Loss of smell, even if not considered a symptom of a serious condition in most cases, can have various implications on a person's life. Partial or complete loss of smell can lead to a decreased interest in eating, which may result in weight loss and malnutrition, or even contribute to accidental food poisoning and feelings of

depression. Anosmia can have significant impacts on an individual's quality of life. It can affect their ability to taste food properly, diminish their sense of danger (e.g., by not smelling gas leaks or spoiled food), and impact their social life since smell plays a role in our emotional experiences and memories.

As with any *Marma*, the understanding and awareness of *Phana Marma's* location and significance are crucial for preventing accidental injuries and promoting overall well-being. Proper care and caution should be exercised, especially in sports and activities that carry a risk of head injuries, to protect these vital areas and maintain good health.

Case report:

A 25-year-old male patient came with A/H/O RTA. He was coming from a workplace and had a skid on two-wheeler near MIDC Chowk.

Diagnostic test

Symptoms

Head injury, Swelling all over the face, chronic lacerated wound on the left eyebrow & eyelid, Nasal bleeding.

Past history - Not significant

O/E:- Afebrile, Pulse-74/min, BP-114/74 mmHg, RR-16/min, SPO2-96% on room air, BSL:144 mg/dl S/E: RS-AEBE clear, CVS-S1 & S2 normal, P/A -Soft, non tender. CNS- Conscious, oriented, moving all 4 limbs and (an odor identification testing ⁽⁶⁾) - Anosmia positive.

Date	7/03/2023	8/03/2023	10/03/2023
HAEMATOLOGY			
HB/PCV	13.8	13.3	13.0
TLC	18,300	9800	7400
PLATELETS	2.98	2.63	2.92
PT/APTT	20/15/1.33 32/32 sec		
BLOOD SUGAR LEVELS (F/PP/R)	R=120		
BUN	13.7		
SR. CREATININE	0.89		
SR. NA/K/CL	136/3.8/96	138/4.5/97	
SR.BILIRUBIN-TOTAL	0.7		
DIRECT	0.3		
S.G.O.T./S.G.P.T.	70/46		
SR. ALK PHOS.	69		
SR.PROTEINS-TOTAL	7.7		
ALBUMIN	4.6		
HIV	Non Reactive		
HBsAg	Negative		
Anti HCV	Negative		

RADIOLOGICAL IMAGING TEST

USG ABDOMEN- PORTABLE (7/3/2023)	No abnormality detected.
X-RAY PNS WATER'S	No abnormality detected.
X-RAY NASAL BONE	No abnormality detected.
X-RAY CHEST	No abnormality detected.
CT SCAN BRAIN PLAIN (7/3/2023)	Diffuse cerebral edema. Fracture of the nasal bone and nasal septum. Fracture of the anterior and posterolateral wall of the right maxillary sinus. Soft tissue swelling. Hemosinuses.
CT SCAN OF FACE-PLAIN + 3D RECON (7/3/2023)	Comminuted fracture of the bilateral nasal bone. Comminuted fracture of the nasal septum. Fracture of the roof of left orbit with its bony fragment in the left frontal sinus. Fracture of walls of the right maxillary sinus. Hemosinuses.

Diagnosis: A/H/O RTA with Head injury/fracture Nasal bone/fracture septum + DNS/fracture Right Maxilla
SURGICAL INTERVENTION - Endoscopic Septoplasty with reduction of fracture Nasal bone

CONDITION ON DISCHARGE:

The patient responded well to the treatment and is discharged after clinical improvement. The patient is hemodynamically stable. No CSF rhinorrhoea, swelling on face decreased.

O/E:- Afebrile, Pulse-76/ min, BP-120/80 mmHg, RR-18/min,

S/E: RS-AEBE clear, CVS- S1 & S2 normal, P/A- Soft, non-tender,

CNS-Conscious, oriented and no sense of smell is present.

Follow up

After 1 month on 15/04/2023

After 3 months on 15/07/2023

DISCUSSION

As *Marma* is the science with much-hidden knowledge *Phana Marma* is considered to be both a *Vaikalyakara Marma* (related to deformities) and a *Sira Marma* (related to blood vessels). It is situated deep inside the nasal passages, on both sides and is associated with the olfactory nerve and olfactory bulb.

Injury to *Phana Marma* can lead to a disability referred to as "*gandha agyan*" (Anosmia), which is the loss of the sense of smell. Anatomically, *Phana Marma* is related to the cribriform plate, olfactory nerve, and olfactory bulb. The olfactory nerve originates from the mucous membrane of the nasal cavity, passes through small openings in the cribriform plate, and ends in the olfactory bulb. Damage to the Nasal area is directly or indirectly detrimental to the cribriform plate and can affect the olfactory bulb or the olfactory nerve fibers, resulting in anosmia.

In the above case, this person met a road traffic accident. He got severely injured, he had a head injury, contused lacerated wound on his left eyebrow & eyelid with nasal bleeding. On examination his vitals were normal. He was conscious, oriented, and moving all 4 limbs. The swelling was present on his face and on testing no sense of smell was present. After doing further examination he was

diagnosed with Head injury with fracture of Nasal bone, fracture of nasal septum, deviated Nasal septum, and fracture in right Maxilla. Endoscopic septoplasty with reduction of fracture nasal bone was advised and performed. The patient's sense of smell didn't recover for nearly two weeks after the surgery. He gradually began to detect intense odors, and it took him almost three months to fully recover. On an odor identification test no abnormality was present.

CONCLUSION

The Patient had an accident in which he had a head injury with a fracture of the Nasal bone, fracture of the septum, deviated nasal septum, and fracture in the right Maxilla. So endoscopic septoplasty with reduction of fracture nasal bone was performed. Before surgery, he had a symptom of anosmia, but after surgery and 3 months of recovery, no complaint was found. Hence it is observed that any injury at the site of *Phana Marma* can cause temporary or permanent loss of smell depending upon the severity of the damage. If treated with precision it can be recovered. This case reflects the importance of *Phana marma* and its *viddhalakshana* from the traumatological point of view.

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