



A DETAIL STUDY OF RUJAKAR MARMA WITH SPECIAL REFERENCE TO INJURIES IN FOOTBALL PLAYERS

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ABSTRACT

Marma is very important topic of *Ayurveda*, it is also related with trauma and its effect on body. As mentioned in *Sushrut Samhita*, excruciating pain is produced when there is any injury at the site of *Rujakar Marma*. In routine any type of pain affects daily activities which is mostly found in sports. Trauma is important aspect of sport medicine as it could hamper whole carrier of sport person. *Ayurveda* being a complete science of health care can contribute in this field also. Principles, treatment modalities, diet & drugs of *Ayurveda* can play very useful & important role in this field. In Football game, very rigorous activities are involved which causes direct effect on joints, ligaments, muscles of their extremities. Physical interaction between players can cause contusion, severe pain etc. which affect the player's game. So, it is necessary to study the *Marma sharir* through aspects of sports medicine. Also, there is need to protect the *Marma* sites from trauma to avoid future problems. In present study we are trying to establish relation between science of *Marma* especially the *Rujakar Marma* & sports medicine. For this we selected football game. In this game, chances of injury on *Rujakar Marma* are more prone. So, the detailed knowledge of *Rujakar Marma* is useful in prevention of injury in football players. Study shows the commonest site of injury to be ankle joint with inflammation followed by sprain due to kicking. Also, the highly affected *marma* is *Rujakar Marma* specially *Gulpha Marma* along with *vedana*, *shopha*, *stabhdapadata*.

Keywords: *Marma*, *Rujakar Marma*, football, *Gulpha Marma*, sprain

INTRODUCTION

The anatomical description of body is referred as *Rachana Sharir* in *Ayurveda*. *Marma* is one of the speciality of *Rachana Sharir*. *Marma* word is used in various Ayurvedic texts & Indian classics & literature. For the first time *Marma* word was used in *Atharveda*^[1]. *Acharya Sushruta* reveals the importance of *Marma*. He has stated that an injury on *Marma* definitely causes death^[2]. If one is saved after an injury to *Marma* due to an expert treatment by and wise surgeon, the patient is definitely prone to suffer from disability therefore the knowledge of *Marma* is said to be the half knowledge of *Shalya Shastra*^[3]

Marma are the vital points in the body which prove to be fatal when subjected to trauma^[4]. Detailed knowledge of *Marma* is important from surgical point of view; surgical procedures like *Agnikarma*, *Ksharakarma* & *Shastrakarma* are used as a part of the surgery. While conducting these surgical procedures, the knowledge of *Marma sthana* is required. With proper knowledge of *Marmasthana*^[5,6] we may perform the procedures without any complications. *Marma* is very important topic of *Ayurveda*, it is also related with trauma and its effect on body. As mentioned in *Sushrut Samhita*, excruciating pain is produced when there is any injury at the site of *Rujakar Marma*^[7,8]. This pain is due to composition of *Agni* and *Vayu mahabhuta* which are present in *Rujakar Marma*^[9,10]. In routine any type of pain affects daily activities which is mostly found in sports.

In today's world, sports and physical tracking has become very professional & competitive. In Modern days, sport medicine is very developed branch. Trauma is important aspect of sport medicine as it could hamper whole carrier of sport person. *Ayurveda* being a complete science of healthcare can contribute to this field also. Principles, treatment modalities, diet & drugs of *Ayurveda* can play very useful & important role in this field. In Football game, very rigorous activities are involved which causes direct effect on joints, ligaments, muscles of their extremities. Physical interaction between players can cause contusion, severe pain etc. which affect the player's game.

So, it is necessary to study the *Marma sharir* through aspects of sports medicine. Also, there is need to protect the *Marma* sites from trauma to avoid future problems.

Nowaday sports medicine is developed as a super-seniority branch of the medical science. Traumatological part is very vital for any sport, hence it is very necessary to study such aspects by outlook of *Ayurveda*. Thus, in present study we are trying to establish relation between science of *Marma* especially the *Rujakar Marma* & sports medicine. For this we selected football game. In this game, chances of injury on *Rujakar Marma* are more prone. So, the detailed knowledge of *Rujakar Marma* is useful in prevention of injury in football players. Also consider importance of knowledge of *Marma* in present era. Hence, this present research work "A detail study of *Rujakar Marma* with special reference to injuries in Football Players" was undertaken to establish the applicability of *Marma sharir* in sports medicine.

IMPORTANCE OF AYURVEDA IN SPORTS MEDICINE-

As we go through the *Ayurvedic* literature, there is no direct references regarding sports medicine. But when we observe with the open mind, we find enormous things. Sports medicine has always been difficult to define because it is not a single speciality, but an area that involves healthcare professional from a wide variety of disciplines. This function is not only curative & rehabilitative but also preventive which may actually be the most important and resembles with the aim of *Ayurveda*.

Through *Rasayana* therapy, *Panchakarma*, *Marmatherapy*, *Yoga*, *Abhyanga*, *Vyayama* etc. we treat the problems related with sports person. *Rasayana* helps in improving strength, vitality and even immunity. The modern medicines like anti-inflammatory, analgesics, antibiotics, barbiturates are gradually proving toxic and naturally affect the fitness of the sportsman. Hence, for that single *Rasayana* drug or formulation of various such drugs are the best alternatives. Along with this *yoga* therapy in daily practice in sports reduces stress. *Swasthavritta*, *Ahara vigyana*, *Sadavritta* are import

ant in prophylactic mode of treatment. *Acharya Sushruta* has described various types of *Pat-tabandhana* for protection according to various sites of body which may be useful during the game or to protect the injured site.

Sports Injuries^[11,12,13,14]

Sport injuries are commonly caused by overuse, direct impact or the application of force that is greater than the body part can structurally withstand. Sports and games are full of physical activities involving running, jumping, throwing, climbing, kicking, skipping etc. Any slight wrong execution of skills may cause injuries. These injuries may occur during competition or just practicing. Common Sport Injuries are sprain, dislocations, fractures. Other are tennis elbow, hamstring strain, sciatica, shin splints, groin pull, concussion, ACL tear or strain, tendonitis, bursitis, contusion, backache, tendosynovitis etc.

Aim-

Study of *Rujakar Marma* with special reference to injuries in football players.

Objectives-

Primary:

1. To collect the scattered references regarding *Rujakar Marma* & study them along with applied aspects.
2. To study relation between *Rujakar Marma* & injuries in football players.

Secondary: To establish the applicability of *MarmaSharir* in sports medicine.

Methodology

Study Design: An Observational descriptive study. Observational work was done at sports college and football clubs. Available literature from ayurvedic texts about *Rujakar Marma* was studied & its related literature from modern anatomical books. Alltheoretical & practical aspect of football game & trauma related factors was observed and studied through ground visits.

Observational study was assessed on 30 injured players of football for 18 months.

1. Inclusion criteria-

- I. Only healthy individuals playing professional, non-professional football game.
- II. Age group from 15 to 40 years.
- III. Irrespective of sex, playing carrier & socioeconomic condition

2. Exclusion criteria-

- < 15 & 40> year
- Patients with any systemic disorders.
- Individuals having history of injuries of *Rujakar Marma* are due to other causes will be excluded from the study.
- Individuals having congenital deformities of particular joints.

Sample size —In this study 30 patients were selected.

Marma Viddha Lakshana:

1. **Manibandha-i)***Vedana* ii)*Stabdahastata* iii)*Kunthata*
2. **Gulpha- i)***Vedana* ii)*Stabdhapadata* iii)*Khanjata*
3. **Kurchashira-i)***Vedana* ii)*Shopha*

Table 1: Observation

According to Age	
15- 19	7 (23.33 %)
20- 24	17 (56.67 %)
25- 29	2 (6.67 %)
30- 34	2 (6.67 %)
35- 40	2 (6.67 %)
According to Gender	
Male	20 (66.67 %)
Female	10 (33.33 %)
According to site of injury	
Ankle	22 (73.33 %)

Wrist	8 (26.67 %)
According to nature of injury	
Inflammation	17 (56.67 %)
Sprain	13 (43.33 %)
According to act causing injury	
Kicking	8 (26.67 %)
Tackling	7 (23.33 %)
Fall during pass	7 (23.33 %)
According to Marma	
<i>Rujakar Marma (Gulpha)</i>	16 (53.33 %)
<i>Kurchashira Marma</i>	9 (30 %)
<i>Manibandha Marma</i>	5 (16.67 %)
According to Viddha lakshana	
<i>Vedana</i>	30 (100 %)
<i>Shopha</i>	25 (83.33 %)
<i>Stabhdapadata</i>	15 (50 %)
<i>Khanjata</i>	10 (33.33 %)
<i>Stabhdahastata</i>	7 (23.33 %)
<i>Kunthata</i>	2 (6.67 %)

Table 2: Marma wise distribution-

	<i>Vedana</i>	<i>Stabhdapadata</i>	<i>Shopha</i>	<i>Khanjata</i>	<i>Kunthata</i>
<i>Rujakar Marma</i>	16 (100 %)	13 (81.25 %)	11 (68.75%)	10 (33.33%)	-
<i>Kurchashira Marma</i>	9 (100 %)	9 (100 %)	2 (22.22 %)	-	-
<i>Manibandha Marma</i>	5 (100 %)	5 (100 %)	5 (100 %)	-	2 (40 %)

DISSECTION-

The dissection was carried out as per the Cunningham’s Manual of practical anatomy. The dissection procedure was performed layer by layer. Each layer was observed and studied thoroughly.

A. Dissection of wrist joint





B. Dissection of ankle joint-



Statistical Analysis-

Data was entered in M S Excel, coded and analysed in statistical software STATA, version 10.1.2011. In this descriptive study, descriptive statistics like frequency and percentage were used to summarise categorical (qualitative) variables.

DISCUSSION

In the ancient era, the basic knowledge of *Marma*

was given to the kings and warriors to achieve maximum fatal response against their enemies & also to prevent *Marmas* from traumatic injuries. The knowledge of *Marma* is important for protecting the sevital points from *Marmabhighat*. In present days, due to change of lifestyles, occupations, sports etc. causes *Marmabhighata* due to their constant stress and pressure on *Marmasthana*. The different causes of trauma are road traffic accidents, quarrels, sports,

occupations. Thus, by offering protection to different *Marmasthana* we can either prevent or minimize *Marmabhighata* & particular *Marma* damage which causes severe or permanent disability or death.

This study was carried out in total 30 football players having injury at *Rujakar Marma* region. Following major findings were assessed statistically and discussed as follows.

- **Site of Injury:** On the basis of site of injury, it is found that ankle is most injured site which is found in 22(73.33%) players as compare to wrist which is found in only 8(26.67%) players.
- **Nature of Injury:** On the basis of nature of injury, the commonest type of injury is inflammation found in 17(56.67%) players followed by sprain in 13(43.33%) players.
- **Cause (action) of injury:** Highest Injury is caused in 8 (26.67%) players during kicking. Each 7(23.33%) players are injured during tackling and fall during passing. 5(16.67%) players are injured during dribbling and remaining 3(10%) players are injured jumping wrong during warmup.
- **Affected Marma:** Out of total 30 players, highly affected *Rujakar Marma* is *Gulpha* in 16(53.33%) players. *Kurchashira Marma* injury is found in 9(30%) players out of which ankle region is more affected i.e. in 6 players as compare to wrist region i.e., in 3 players and *Manibandha Marma* injury is found in only 5(16.67%) players.
- **Marmaviddha Lakshana:** While observing *marma viddha lakshanas*, *vedana* is found in all 30 (100%) players followed by *shopha* in 25 (83.33%) and *stabdhapadata* in 15(50%) players. The other *lakshanas* are *khanjata* in 10 (33.33%), *sthabdhahastata* in 7(23.33%) and *kunthata* in 2(6.67%) players.
- **Gulpha Marma Viddha Lakshana:** Out of 16 players of *Gulpha Marma* injury, *vedana lakshana* is found in all 16(100%) players followed by *stabdhapadata* in 13(81.25%) players. *Shopha* is found in 11(68.75%) players followed by *khanjata* in 10(62.5%) players.

- **Kurchashira Marma Viddha Lakshana:** Out of 9 players of *Kurchashira Marma* injury, *vedana* and *shophalakshana* is found in all 9(100%) players. *Stabdahastata* and *stabdhapadata* found in each 2(22.22%) players.
- **Manibandha Marma Viddha Lakshana:** Out of 5 players of *Manibandha Marma* injury, *vedana*, *stabdahastata* and *shophalakshana* is found in all 5(100%) players followed by *kunthatal akshana* is found in 2(40%) players.

This *marma viddha lakshana* shows relation between *Rujakara Marma* and injuries in football players.

CONCLUSION

On the basis of observations and according to detailed discussion, the conclusion is as follows-*Marmas* are the certain vital anatomical points on the body surface having specific applied anatomy. *Agni* and *vayu* are the chief *mahabhutas* present in *Rujakara Marma* which causes severe pain or *ruja*.

Anatomical structures found in *Rujakar Marmas* are -

- *Kurchashira Marma*- In foot- Deltoid ligament, talocalcaneal and calcaneofibular ligaments. In wrist- Ulnar and radial collateral ligaments.
- *Gulpha Marma*- Ankle joint, distal tibio fibular joint, joint of tarsal bones.
- *Manibandha Marma*- Wrist joint, distal radio ulnar joint and radiocarpal joint.

These structures are observed through detailed dissection of ankle and wrist region.

After analysis of statistical data & detailed discussion it is concluded that,

- Ankle is mostly injured site found in 22 (73.33%) players as compare to wrist which is found in 8 (26.67%) players.
- Commonest type of nature of injury is inflammation found in 17(56.67%) players followed by sprain in 13 (43.33%) players.
- Highly affected *Rujakara Marma* is *Gulpha Marma* found in 16(53.33%) players. *Kurchashira Marma* injury is found in 9(30%) players.

ers which is more affected in ankle as compare to wrist. *Manibandha Marma* is less injured in 5 (16.67%) players.

- Pain i.e., *vedana* is the main symptom of *Rujakar Marma* which is found in all 30 players. Other *Marma Viddha lakshanas* i.e., *shopha* in 25(83.33%), *stabdhapadata* in 15(50%), *khanjata* in 10(33.33%), *stabdahastata* in 7(23.33%) and *kunthata* in 2(6.67%) players.
- In *Gulpha Marma* injury, *vedanalakshana* is found in all players followed by *stabdhapadata* in 13(81.25%) players. *Shopha* is found in 11(68.75%) players and *khanjata* in 10(62.5%) players.
- In *Kurchashira Marma* injury, *vedana* and *shophalakshana* is found in all players followed by *stabdahastata* and *stabdhapadata* found in each 2 (22.22%) players.
- In *Manibandha Marma* injury, *vedana*, *stabdhapadata* and *shophalakshana* is found in all players followed by *kunthatalakshana* is found in 2(40%) players.

Thus, from above observations it is concluded that injuries which are occurred in football players are related with *Rujakar Marma* as per occurrence of their *viddhalakshana*.

So, the present research work “**A detail study of Rujakar Marma with special reference to injuries in Football Players**” was undertaken to establish the applicability of *Marma sharir* in sports medicine.

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