

**CONCEPTUAL STUDY OF PLIHA (SPLEEN) IN VIEW OF RAKTAVAHA
SROTOMULA AND HEMATOLOGICAL ASPECTS****¹Dr. Pradnya Ravindra Deshpande and ²Dr. Prasad Prabhakar Pande**¹Assistant Professor, Department of Rachana Sharir, Govt. Ayurved College, Nanded.²Associate Professor, Department of Rachana Sharir, PMT's Ayurved College, Shevgaon, Ahmednagar.***Corresponding Author: Dr. Pradnya Ravindra Deshpande**

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ABSTRACT

Ayurveda is the ancient science of health and medicine based on maintenance of homeostasis via five basic elements (earth, fire, air, water and space). These five elements in turn give rise to three different forms of physiological units- *Tridosha*, *Saptadhatu* and *Trimala*. Synthesis, transformation, conduction and excretion of these derivatives occur in and through channel like structures along with basic organ forming particular organ system. Ayurveda mentioned *Sharir* (body) as the constitution of various organ systems nomenclated as '*Srotasa*'. As per modern science, system performing hemodynamic and blood circulation is closed type circulatory system involving heart and vessels. In Ayurveda *Rakta* (blood) belongs to *Dhatu* (entity of body) and derived from previous *Rasadhatu*. The phenomenon occurs in *Raktavaha srotas* where there is no involvement of heart. Instead, *Pliha* (spleen) is considered as one of the chief organ. *Pliha* also act as storehouse of blood. Though vascularity is important aspect of each organ, there are special features mentioned in Ayurveda in *Pliha* related to hematology. In this review article, efforts are made to describe Ayurvedic anatomico-physiological aspects of spleen related to blood.

KEYWORDS: Ayurveda, Pleeha, Rktawaha srotas, Spleen.**INTRODUCTION**

Ayurveda is holistic traditional system of medicine providing guidance to maintain homeostasis. Homeostasis is dependent on *Dosha* (hormony of body), *Dhatu* (entities of body) and *Mala* (excretory products). Together journey of *Sharir* (body), *Indriya* (sensory+motor organs), *Satwa* (mind) and *Aatma* (soul) is considered as *Ayu* (life).^[1] To know what is beneficial and harmful for individual's life, it is mandatory to gain entire knowledge of *Sharira* or body. For the purpose regional study is suggested in the form of '*Shadang-Sharir*'^[2] i.e. in the form of six major divisions. *Madhya-sharir* (trunk) contains the space with organs termed as *Koshtha*.^[3] *Aacharya Charaka* numerated *Koshthanga* (soft organs) as 15.^[4] Organs execute same function constitute typical organ system i.e. *srotasa* which are 13 in number. Physiology of body is determined by seven entities recognized as *Saptadhatu*. '*Jeevan*' is the prime function accomplished by *Raktadhatu*.^[5] Phenomenon of synthesis, transformation, modification in other products (*upadhatu*), conduction of *Raktadhatu* (blood) occurs in *Raktavaha srotas*. One of the chief organs *Pliha* (spleen) is remarkably accompanied with abovementioned functions.^[6] Blood is chief component of both i.e. *Raktavaha srotas* and circulatory system, still differ in organic constitution. Heart and vessels combine to form closed type of circulatory system supplying oxygen and

nutrients to body. *Aacharya* do not include heart as organ of *Raktavaha srotas*. Enormous importance is given to *Pliha* (spleen) on account of *Raktadhatu*. In *Sharirsthana*, This current study reveals with the modern anatomy and physiological aspects highlighting the concept of Ayurveda "*Pliha* is *Mulasthan* of *Raktavaha Srotas*".

Aim

To study the anatomico- physiological aspects of *plih*a in Ayurveda in view of modern hematology.

Objectives

1. To understand concept of *srotasa* w.s.r.t. *Raktavaha srotasa*.
2. To understand *Pliha* being important organ (*mulasthan*) of *Raktavaha srotas*.
3. To get knowledge of anatomy and physiology of spleen related to hematology.
4. To point out hematological aspects suggesting importance of spleen as chief organ as mentioned by *Aacharyas*.

MATERIAL AND METHOD

Related literature was reviewed from classical Ayurvedic texts (*Samhitas*) and Modern texts available in GAC

Nanded. Internet searching of related articles was done to gather information.

Need for study

Knowledge of aspects related to metabolism of 'Raktadhatu' help in diagnosis and treatment of 'Raktaj Vyadhi'. As *pliha* is one of the organs involved in metabolism and storage, it is important to know detailed anatomico-physiological concepts in parallel with modern science.

DISCUSSION

Ayurveda, the ancient (about 5000 years old) health science, has accepted that the human body is made up of number of channels termed as 'srotasa'. Considering the importance of organ system, *Acharya Charaka* mentioned 'Srotomaya hi Shariram'.^[7] Specifically *dhatu* and *mala* follow their route via *srotasa*. Internal transport system represented by *srotasa*. Our bodily functions primarily governed by *tridosha* (humours of body) *vata*, *pitta*, *kapha*. *Aacharya Sushruta* enumerated *dosha* as four including *Rakta*.^[8] *Rakta* also nomenclated as *dhatu* performing 'jivan'(rejuvenation) function. It help individual to survive. According to *Acharya Charaka* 'no structure in body can develop or degenerate independent of *srotasa*'.^[9] 'Raktavaha *srotasa*' is one which is included in *antarmukh srotasa* subjected to transformation, synthesis and all phenomenon related to 'Raktadhatu'.

Raktadhatu is entity of physic similar to *pitta* (fire) possessing hot, light, dry, unstable, flowing etc. properties.^[10] Amongst the *doshas* (*vata-pitta-kapha-rakta*) only *rakta* is considered as *dosha* as well as *dhatu*. *Rakta* perform dual function. Being *dosha*, its vitiation (abnormality) lead to disease and being *dhatu* is responsible for growth and nourishment. Word *rakta* is derived from 'raja-ranjana' means to stain. In modern science, blood components such as haemoglobin, iron possess same property so we consider *raktadhatu* as blood. According to Ayurveda, not a single existed matter is maintained, vitiated or diminished without circulating channels i.e. *srotasa*.^[11] Here related *srotasa* is *raktavaha*. Though *srotasa* is made up of multiple structures, some are of great value regarding storage, conduction, diagnosis and clinical point of view. These chief structures considered as *Mulasthanas* of that specific *srotasa*.

Pliha (spleen) is *mulasthana* of *raktavaha srotasa*. It is site of origin of *rakta* and itself derived from *rakta*.^[12] *Pliha* implies various primal matter required for hemopoiesis i.e. *raktotpatti*. One entity of physic (*dhatu*) is been transformed into another with the effect of special fire *dhatwagni*. As *ranjak pitta* and *ranjakagni* are positioned in *pliha*,^[13] *rasadhatu* transformed into *raktadhatu*. As stated by Ayurveda, 'Kala' (membrane) is internal lining responsible for holding or retaining function. *Pliha* is lined with *Raktadhara kala* concern with blood storage function.^[13]

According to modern science, spleen is secondary organ of lymphatic system and organ of reticulo-endothelial system. Spleen performs numerous functions related to hemodynamics. During middle trimester of gestation reasonable number of RBC are produced by the spleen. Anatomically spleen has two separate areas for storing blood, venous sinuses and the pulp. In the splenic pulp where capillaries are so permeable, area is considered as red pulp. Red cells trapped in the trabeculae forming special reservoir area for RBC. Destruction of fragile RBC occurs in sinuses. Blood cleansing function is also carried out by spleen.^[14] Spleen recycles iron. Spleen retains ability to produce lymphocytes and such remain hemopoietic organ. Thus spleen is the organ takes part in hemopoiesis, storage and circulation function.

CONCLUSION

Spleen is integral part of *Raktavaha Srotas*. Constituents of spleen such as *raktadhara kala*, *ranjakagni*, *ranjakpitta* reveal the depth of relationship with hematological aspects. Existence of large amount of blood in sinusoids, formation of blood and blood cells, destruction of blood cells, transformation of degraded cell are the events highlighting blood related tasks performed by spleen. All the anatomico-physiological perspectives demonstrate the importance of spleen as a chief organ of *raktavaha srotas*. While dignosing and treating *raktaj vyadhi*, role of spleen is to be kept in mind.

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