Basic Concepts of Spine and Spinal Disorders

1Yogita S Lungare, 2Sanjay Lungare

ABSTRACT

When we think about spine or spinal disorders, we must concentrate on basic concepts of Ayurveda. Spine is made up of Mamsa Dhatu, Asthi Dhatu, Majja Dhatu, Medo Dhatu, Rakta Dhatu as well as Vata, Pitta, and Kapha Dosha. Concepts of Agni, Purishdhara Kala, and Pittadharaka Kala play an important role in spinal disorders.

As a traditional health care supportive to a total quality of life, Ayurveda or its core concepts must be evaluated in a prospective approach through primary understanding of Ayurvedic physiology, i.e., what type of Dosha, Dhatu- UpDhatu shows their existence in this region? What types of humors play an important role during embryonic evolution of spine (process of Dhatu Nirmana)? What is the role of Agni or Kala in spinal disorders?

If we interpret these core concepts with prospective approach, we should better understand pathophysiology of spinal disorders, treatment and mechanism of drug action used in spinal disorders. This prospective approach will be discussed in full paper.

Keywords: Ayurvedic physiology, Dhatu Nirmana, Kala, Prospective approach, Spine.


Source of support: Nil

Conflict of interest: None

INTRODUCTION

Spinal disorders are very common in today’s lifestyle. The spine is designed to hold the body upright and serve as its primary support. The curvature of spine is made up of bones, muscles, nerves, ligaments, tendons, and intervertebral disks. When we think about spine or spinal disorders we must concentrate on Ayurvedic basic concepts related with spine. The prospective approach of Majja Dhatu, Asthi Dhatu, Mansa Dhatu, Medo Dhatu, Rakta Dhatu as well as Pittadharaka Kala, Purishdhara Kala, concept of Agni and Vata Dosha with reference to spine proves the value of Ayurveda as a traditional health care supportive to a total quality of life.

ROLE OF MAJJA DHATU

The root or root habitat of Majja Dhatu is bones, i.e., medullary cavity of larger bones and joints. The word joints include bone joints as well as skeletal-muscular junction and neuromuscular junction.

As per Acharya Charaka, larger bone spaces filled with very viscous substance are called as Majja Dhatu.

As per Acharya Sushruta, Majja Dhatu originated from Medo Dhatu. Medo Dhatu’s unctuous quality converted into Majja Dhatu.

Larger bones contain Majja Dhatu and smaller bones filled with Medo Dhatu associated with Rakta Dosha.

Majja Dhatu plays an important role in smooth functioning of Vata Dosha. All spinal movements are performed under the influence of Vata Dosha. Oily property of Majja Dhatu pacifies roughness of Vata Dosha and thus helps in smooth functioning of Vata Dosha. Vata Dosha vitiates due to Vata Prakopaka diet and routine which affects Majja Dhatu. This induces porosity in bones and symptoms like joints pain.

ROLE OF MAJJADHARA KALA (PITTADHARA KALA)

Pittadharaka Kala is situated at small intestine (Jathara Agni). Factors that affect this membrane of lining finally affects Majjahara Srotas. Small intestine, i.e., Pittadharaka Kala is the main site for digestion of long chain fatty acids or fats. Vitiates Pittadharaka Kala lacks proper digestion and assimilation of fats, and consequently develops vitiates Majja Dhatu. This Majja Dhatu functions improperly and affects spine (intervertebral disk).

ROLE OF AGNI

Panchabhautic Ahara requires Jathara Agni for its conversion into smaller molecules (संघात भेदन) Agni acts upon
ROLE OF ASTHI DHATU

According to different biotransformation process of diet in classical text, AsthiDhatu constituents by its own Agni gets converted into Sthula Asthi Dhatu, Majja Dhatu Poshaka constituent and excretory product like nails and hairs. According to Bhata Prakash Samhita, during bio-transformation of AsthiDhatu constituents, Majja Dhatu Poshaka constituent separated just like oozing of sweat and concentrated into a viscous form which is called as Majja Dhatu.

ROLE OF MADHYO DHATU

Majja Dhatu derived from unctuous quality of Medo Dhatu.

Bones are surrounded by Medo Dhatu. By association and dissociation action of Vata Dosha during remodeling or ossification of bone, spaces are created inside bone. These spaces are filled by Medo Dhatu. This intrinsic Dhatu inside larger bone is known as Majja Dhatu. Medo Dhatu’s unctuous quality not only generates Majja Dhatu but also affects the status of other Dhatus like Asthi, Majja, and Shukra.

Degradation in unctuous quality of Medo Dhatu affects formation of higher order Dhatu. This causes symptoms of deterioration of Dhatu (असन्तुष्टजन लक्षणे, दृढत्वं),1 Hence, if our diet is devoid of essential oils, higher order Dhatu lacks nourishment from Medodhatu.

As स्नेह गुण maintains integrity of cell membrane, in absence of स्नेह गुण cell wall lost its integrity (इत्रहे), this phenomenon causes degeneration of higher order Dhatu. Same phenomenon plays an important role in spinal disorders.

ROLE OF SNAHYU

Sneha is one sort of subset of Dhatu which is derived from Medo Dhatu. Two separate part put together in proper position is called as (सन्यु) in Ayurveda. देहक गुण of Meda Dhatu maintains the integrity of different types of वचन.

In human body Meda, Mansa, and Asthi are put together in proper alignment with the help of सन्यु. The curvature of spine is maintained by ligaments (सन्धी) with the help of Sneha from Meda Dhatu. Lack of Sneha declines the performance of ligaments that is why deterioration of Medo Dhatu causes symptoms like स्वर्ग, स्कृत, सन्धिप्रभुता.11

ROLE OF MAMSA DHATU

लेख क्रम of spine is done by Mamsa Dhatu. It keeps spine in upright position. Covering of the body parts is nothing but लेख क्रम. Mamsa Dhatu covers Sira, Snavu, Asthi, and Sandhi in the form of muscle tissue. All types of contraction and relaxation movements in the body is due to Mamsa Dhatu in the form of Snavu and Kandara.

Ligaments (नास्तु) play an important role in maintaining posture of body, contraction, and relaxation of muscle and gives support to muscle for attachment with bone. That is why they are called as root of Mamsavaha Shrotasa. Causative factors of Mamsavaha Shrotasa bring loss of muscle power and then cause faulty body posture.

“अतिरिक्तरूपी भोजन्याय भृत्याय व घुरिण्याय।
दासाग्नानि दृष्टिकृत्याय प्रक्षतः च वस्थानि रिता॥”\(^{23}\)

Extra workload of spinal muscle and faulty posture cause spinal disorders.

**ROLE OF RAKTA DHATU**

Raktadhara Kala embedded in muscles is another form of Mamsadhara Kala.\(^{24}\)

The network of Raktavaha Strotasa inside muscle nourishes all Dhatus with the help of blood vessels, which are the subset of Rakta Dhatu.

“पायाभमां मुखः। स्वमि। संचार रक्त कर्षनै।”\(^{25}\)

Process of nourishment to all Dhatus depends upon formation and integration of blood vessels. That is why in deterioration of Rakta Dhatu, blood vessels lost their tone which causes nourishment defect.

Even if solid entities like Kapha and Meda block lumen of blood vessels, they cause same nourishment defects. Finally, any defect in the blood vessels of spine causes spinal disorders.

“कृष्णेऽप्रिन्तुदार्थार्थात् एव शेष धाताभो तस्मादाप्तते।”\(^{26}\)

**ROLE OF PURISHDHARA KALA**

“पञ्चमी पूर्वोपार्जनानाः। यथां कोश्यं पद्मं अतिरिक्तरूपं पन्नाशयनदथीनाः।”\(^{27}\)

Purishdhara Kala is situated at अंतःक्रोष्, which sort out nourisher and nonnourisher part of the digestive process. The main spot of this sort-out process is पन्नाशय. According to Acharya Sushruta, this is mainly divided into two parts: Upper part and lower part.

“अंतःक्रोष्यनां तत्ततायांसि पुनर्विभिन्नावेयुक्त्यां तत्ततायां प्रमहात्त्वोषयित्वं।
सवाः पुनः दृश्याय निग्रां निग्रां तस्माद् च।”

In upper part, there is dominance of Agni, which sort out and separates Sara constituents, Mutra, and Purish Poshaka constituents. While in lower part there is predominance of Vata Dosha, which is responsible for real stool. Asthi Dhatu plays an important role in the formation of spine. Asthiposhaka constituents are mainly absorbed by Purishdhara Kala.

“वैव पूर्वोपार्जनः सौरः अतिरिक्तः।”\(^{5}\)

Hence तर्क कर्म or विचिन्त कर्म is very helpful in spinal disorders.

**ROLE OF VATA DOSHA**

Vata is the main area of dominance for Vata Dosha. Vata produces symptoms like विक, पुद, कदिप।\(^{29}\) Vata Dosha is mainly responsible for all association and disassociation movements at spinal joints. Hence, vitiation of पन्नाशय वात वात shows above symptoms. Regarding the treatment of पन्नाशय वात, Acharya Sushruta said that if the root of vitiation is in upper वातस्त्रात, then the patient should be advocated for स्वास्थ्यिकरण and if the root is in lower वातस्त्रात where Vata is in dominance, then the patient should be advocated for ऊपरयित्व।\(^{30}\)

Hence, while treating spinal disorders, we should use prospective approach regarding basic concepts that help to get better result in treatment.

**REFERENCES**


