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Conceptual study of *Gridhrasi* with special reference to Sciatica

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ABSTRACT

It has been observed that *Katishoola* or Lower backache has become a common problem in middle and old age people. The causes of lower backache may be neurological, metabolic, degenerative, traumatic, bad posture, or restless lifestyle. *Gridhrasi* or Sciatica is one of the reasons for backache so a person cannot sit and walk properly. In this disease person walks like *Gridhra* and his legs become curved and tense. It is mentioned in *Vataj Nanatmaja Vyadhi* in various *Ayurvedic Samhitas* where the course of the Sciatic nerve corresponds to *Pratyatma Lakshana* of *Gridhrasi*.

Key words: *Gridhrasi*, Sciatica, Lumbar spondylosis, *Vataj Nanatmaja Vyadhi*, *Katishool*, *Marma*.

INTRODUCTION

The term *Gridhra* means Eagle, a bird and the term *Gridhrasi* means that the patient has the gait of *Gridhra* or Eagle. i.e., the eagle which walks with a limp, without lifting a leg. There is also another reason, where the *Gridhrasi Nadi* is curved similar to the nose of *Gridhra* i.e., eagle, since the disease involves the *Nadi*, it is also named *Gridhrasi*. *Ringhini* This term is used by *Vachaspati Misra* while commenting on *Gridhrasi* in *Madhava Nidana*. This term indicates the prolapse of the lumbar intervertebral disc material. *Radhina*, this term is used by *Kashiram* in his *Gudarthadhadeepika* commentary on *Sarangadhara*

Samhita. It indicates pressing, compressing or destroying; hence the use of these synonyms indicates the pathophysiology of *Gridhrasi*.

Gridhrasi is a *Vata Vyadhi* characterized by *Stambha* (stiffness), *Toda* (pricking pain), *Ruk* (pain) and *Spandana* (frequent tingling). These above-mentioned *Lakshana* initially affect *Sphik* (buttock) as well as the posterior aspect of *Kati* (waist) and then gradually radiate to posterior aspects of *Uru* (thigh), *Janu* (knee), *Jangha* (calf) and *Pada* (foot).

It has been observed that lower backache is more common in the second decade, and disc disease and disc herniation is more common in the third and fourth decade. According to the modern view. The usual history of lumbar disc herniation is of repetitive low back pain, radiating to the buttocks and decreased by rest. Radiculopathy refers to pain in the distribution of the Sciatic nerve and is caused due to disc herniation, called Sciatica.

Sciatica is one such disease that is gaining Prevalence in the present scenario. The Prevalence of Sciatica symptoms reported in the literature varies considerably ranging from 1.6% in the general population to 43% in selected working population. Lifetime Incidence of low back pain is 50-70% with

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Lifetime Incidence of Sciatica more than 40%. However, clinically significant Sciatica occurs in 4-6% of the population.

AIM AND OBJECTIVES

1. To collect various references from the Ayurvedic classical text on *Gridhrasi* and modern textbooks on Sciatica.
2. To compile the pathophysiology of *Gridhrasi* concerning Sciatica.

MATERIALS AND METHODS

Ayurvedic classical texts of *Brihatrayi*, *Laghutrayi* and modern textbooks are referred to and gathered about the pathophysiology of *Gridhrasi* concerning Sciatica.

REVIEW OF LITERATURE

Disease review on *Gridhrasi*

Charak Samhita

Charaka in *Chikitsa Sthanam*, mentioned *Gridhrasi* where initially pain arises from *Sphik* and radiates along with *Kati*, *Prista*, *Uru*, *Janu*, *Jangha*, and *Padam*. He mentioned two types of *Gridhrasi* -

- a. *Vataja Gridhrasi* is characterized by *Ruk*, *Toda*, *Stambha*, *Muhuspandanam*
- b. *Vata-Kaphaja*, characterized by *Tandra*, *Gaurava*, *Arochaka*

Acharya Sushruta

In *Gridhrasi* when the ligaments of heels and toes are afflicted with *Vata*, causes difficulty in lifting the leg.

Acharya Vagbhata

Vagbhata has mentioned that tendons in the heel and greater toe are afflicted with vitiated *Vata*, thereby making it difficult to lift the leg is known as *Gridhrasi*.

Vridhdha Vagbhata also opines the same as above.

Bhavaprakasha

Bhavamishra has explained *Gridhrasi* as, the pain initially starts in *Sphik* and gradually radiates to *Kati*, *Uru*, *Prishta*, *Janu*, *Jangha* and *Padam*. He also mentioned rigidity or stiffness of the lower limb,

throbbing pain, dragging pain and repeated twitches are the symptoms of *Gridhrasi*. The two types mentioned by him are *Vataja* and *Vata-Kaphaja*.

Yogaratanakara

Yogaratanakara explained that initially, it affects the *Sphik* and then radiates to *Kati*, *Prista*, *Janu*, *Jangha* and *Padam* causing stiffness, pricking pain and repeated twitching in the affected parts in *Vatavyadhi Addhyaya* 5.

It is of two types *Vata* and *Vata-Kapha*.

1. In the case of the *Vataja* type, there is pricking pain, bending of the body, severe twitching, and numbness of the knee, waist and thigh joints.
2. In the case of the *Vata-Kapha* type, there is a feeling of being covered with a wet cloth, depletion of digestive fire, drowsiness, excessive salivation and aversion to food.

Basavarajeeyam

The author *Basavaraju* had mentioned *Gridhravata Lakshana* as *Shopha*, *Karapada Vidaha*, *Sweda*, *Murcha*, *Bhrama*, *Trshna*. The author had specifically described an exclusive feature known as "*Skalanam*".

Nidana (etiology) of Gridhrasi

In the case of *Gridhrasi* specific *Nidana* has not been mentioned. So causative factors mentioned in producing *Vata Vyadhi's* are considered as *Nidana of Gridhrasi* also. Since *Gridhrasi* is considered a *Nanatmaja* type of *Vata Vyadhi*, the provocative factors of *Vata* can also be taken as the causes of *Gridhrasi*.

All the etiological factors of *Vata Vyadhi* as well as *Vata Prakopa* are taken as *Nidana of Gridhrasi* & the same is elaborated in the following subtitles

- A. *Aharaja Nidana*
- B. *Viharaja Nidana*
- C. *Manasika Nidana*
- D. *Anyu Hetuja*

Aharaja Nidana

Ruksha, Sheeta, Laghu Anna, Alpa Anna, Katu, Tikta, Kashaya Rasa, Langhana, Abhojana.

Viharaja Nidana

Ativyayama, Ativyavaya, Atiprajagara, Vishama Upachara, Plavana, Atiadhava, Diwaswapna, Vegadharana etc.

Manasika Nidana

Chinta, Shoka, Krodha & Bhaya

Anyana Nidana

Ati Asruk Sravana, Dhatukshaya, Varshartu, Marmabhighata, Margavarana, Rogatkarshana etc.

Purvarupa

In classics, the description of the *Purvarupa* of *Gridhrasi* is not available. Acharya's has mentioned that *Avyakta Lakhana* is the *Poorvarooopa* of *Vata Vyadhi*. *Chakrapanidatta* commenting on the word *Avyakta* mentions that few mild symptoms are to be taken as the *Poorvarooopa*. So, symptoms of *Gridhrasi* like *Ruk, Toda, Stambha & Spandhana* are seen in mild form.

Rupa

Ruk, Toda, Stambha and *Muhuspandana* are the cardinal symptoms. To be more precise about the track of pain, the pain starts at *Sphik Pradesh* and then radiates to *Kati, Pristha, Uru, Janu, Jangha and Pada* in order. In *Vata-Kaphaja Gridhrasi* there is *Tandra, Gaurava, and Arochaka*. '*Sakthikshepanigraha*' is also one of the predominant signs seen in *Gridhrasi* told by our *Acharya*.

In relation to Dosha

Gridhrasi is considered to be one of the 80 *Nanatmaja Vata Vyadhis*. Among all the *Tridosha Vata* possesses the quality of movement. *Sushruta* describes the word *Vata* as derived from 'VA' which signifies *Gati* (motion or movement). The word *Prasandana* i.e., movements of the body is governed by the function of *Vata*, here this function specifically implies the *Vyana Vata*. The *Vyana Vata* is responsible for *Prasarana* (extension) and *Akunchana* (flexion). *Sushruta* made

the fundamental observation that in the process of disease in *Kriya Kala* had observed that *Vata* plays a major role in the *Prasarana* stage of *Kriya Kala*. In the pathogenesis of *Gridhrasi*, there is derangement of *Vata* leading to difficulty in lifting the legs which are mentioned by *Sushruta* and *Vagbhata* as *Sakti Utshepa*.

In relation to Samprapti

The disease in view of *Shatkriyakala*, there are stages of *Vyadhi* which are *Sanchaya, Prapropa, Prasara, Sthanasamshraya, Vyakta* and *Bheda*. When we see *Gridhrasi* mentioned under *Vata Vyadhi* the predominant *Dosha* involved here is *Vata* and *Anubandha* is *Kapha*. There are two main reasons by which *Vata* gets vitiated which are *Dhatukshaya* and *Margavarodha*. In *Gridhrasi*. Depending on the *Nidana* whether it is *Dhatukshayajanya Nidana* like *Ativyavaya* (excess sexual activity), *Atiprajagara* (staying awake at night), *Ativyayama* (excessive exercise), *Ativicheshta* (working excessively), *Dukkha Shayya* or *Asana* (uncomfortable posture while sleeping) would lead to *Dhatukshaya* and *Margavarodhajanya Vikara* like *Vishamashana* (untimely diet), *Adhyashana* (overeating), *Viruddhabhojana* (incompatible food), *Bhuktam-jeerna* (eating immediately after meals) would lead to obstruction of movement of *Vata* by *Kapha* producing symptoms of *Vata Kapha Gridhrasi* as *Tandra, Aruchi* and *Gaurava*.

In relation to Rogamarga

The *Vyadhi* occurs and progresses in a certain pathway which is called to be as *Rogamarga*. Depending upon the organ involved, based on anatomical and physiological aspects it is classified as *Bahya, Madyama* and *Abhyantara*. These signify the origin of the *Vyadhi*. The *Madyama Rogamarga* involves anatomical structures like *Marma, Asthi, Sandhi, Snayu*, and *Kandara* which are involved in the *Vyadhi* of *Gridhrasi*.

In relation to Marma

Sushruta mentions that trauma on the *Kukundara Marma* (lumbar area of the vertebral column) leads to sensory and motor loss of lower limbs and leads to

Vaikalyata (disability) which is observed as numbness and difficulty in lifting the leg.

Kukundara Marma is located on either side of *Prushta Vamsha* (lower back of the spine) positioned over the outer part of the *Jaghana Parshwa* (lateral part of ilium bone or gluteal muscle). *Kukundra Marma* is classified into one *Prushta Gata Marma* and second as *Sandhi Marma* which is predominantly made of *Sandhi* i.e., bony joints. *The Snayu, Sira, Ashti, and Mamsa* are also present but in lesser proportion. It is a *Vaikalyakara Marma*, therefore injury to this *Marma* leads to *Kaya Chesta Upaghata* (dysfunction in the movement of the body) and *Sparsha Ajanam* (loss of sensation) which is observed in the disease of *Gridhrasi*.

In Relation with Upadhathu

Asthi Samyogah Tatra Upanibaddha Ca Snayuh, due to the support of *Snayu* all the joints sustain the body weight. In *Gridhrasi* the *Kandaras* are vitiated by the *Doshas*. *Charaka* explains that *Kandaras* are *Updhatu of Raktha Dhathu*. *Chakrapani* mentions that *Kandara* may also be taken as *Sthula Snayu*. *Snayu* is *Mula Sthana of Mamsa and Updhatu of Meda*.

Pathogenesis of Sciatica

In the pathogenesis of *Sciatica* acute lumbar disc herniation is often precipitated by trauma, usually by lifting heavy weight or a fall. The nucleus pulposus may bulge or rupture the annulus fibrosa, giving rise to pressure on the nerve exiting from the lower vertebral column and in spinal ligaments. The altered mechanic of the lumbar spine results in loss of lumbar lordosis and spasm of the paraspinal musculatures. The root pressure on the nerve limits the flexion of the thigh on the affected side where the straight Leg raised test is positive which is mentioned as a feature of *Sakthi Utkshepa*.

Acharya Charaka mentions the *Pratyatmika Lakshana of Gridhrasi* where pain arises from *Sphik* and travels along with *Kati, Prista, Uru, Janu, Jangha, Padam* which is clinically noticed along the course of sciatic nerve where it takes its root from L4 to S3, leaving the pelvis and enters the gluteal region via greater sciatic foramen. It emerges inferiorly to the piriformis muscle

and descends in an inferolateral direction innervating the muscles of the posterior thigh, and hamstring portion and indirectly innervating its terminal branches to all muscles of the leg and foot. Thus, mentioned in classical texts.

Gridhrasi is mentioned under the *Vata Vyadhi* in *Brihatrayi* and *Laghutrayi*. It may be compared best with *sciatica* in modern terms. In *Ayurveda*, the pathophysiology of this disease involves *Vata as Pradhana Dosha*. The development of the spine starts from the third week of intrauterine life and continues till the third decade of life. The area between the Lumbar vertebral bodies and sacral vertebral bodies is a transitional zone at increased risk of injury due to the bio-mechanics that occur between these regions. Separating each vertebral body of the spine are pads of fibro cartilage-based structures that provide support, flexibility and minor load. A healthy intervertebral disc maintains a certain level of pressure which is called intra- discal pressure above this the nucleus pulposus prolapse and compresses the exiting nerves from the adjacent sides causing the features of *sciatica* which can be compared with *Pratyatmika Lakshana of Gridhrasi*.

CONCLUSION

All the Ayurvedic classics have mentioned describing the *Vyadhi Gridhrasi*. The description of this *Vyadhi* is missing in *Bhela Samhita* and *Kashyapa Samhita*. There has always been a struggle in comparing the pathophysiology in view of modern books and with Ayurvedic classical text. *Gridhrasi* being a *Nanatmaja Vikara of Vata Dosha* which is responsible for *Gati* is hampered. In *Sciatica*, the functional movement of the Lumbar is restricted and the clinical features and pathogenesis of *Gridhrasi* can be correlated with the modern view of *Sciatica*.

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