

## SCIATICA (GRIDHRASI) – AN AYURVEDA PERSPECTIVE

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### ABSTRACT

Sciatica is a neuralgic pain which begins from lumber region and radiates downwards to buttock, posterior aspect of thigh, calf and to outer border of foot. There are many causes for low back pain however true Sciatica is a symptom of inflammation or compression of sciatic nerve. Risk factor for sciatica is age, height, mental stress, cigarette smoking and exposure to vibration from vehicles. The prevalence of sciatica varies considerably ranging from 1.6% in the general population to 43% in a selected working population. In Ayurveda the symptoms, etiopathogenesis resembles with Gridhrasi. Gridhrasi is a shulpradhana nanatmaja vatavyadhi which affects the daily routine of patient. In these disease onset of Ruk (pain), Toda (numbing pain) and Stambha (stiffness) is initially in Kati (lumbosacral region) and radiates distal to pristha (lumber region) Janu (Knee) Jangha (calf region) till Paada (foot). According to Acharya Charaka Gridhrasi is two types Vataja and Vata-kaphaja. The management of Gridhrasi in Ayurveda is Dincharya, Ritucharya, Panchakarma, Katibasti, yoga therapies. Katibasti is found to be efficacious in the whole symptoms of Sciatica. This paper will discuss the preventive and promotive Ayurvedic management of Sciatica.

**KEYWORDS:** Sciatica, Gridhrasi, Preventive, Promotive management.

### INTRODUCTION

Sciatica is the name given when there is radiating pain in the back of lower limb.<sup>1</sup>In Sciatica pain affecting the back, hip & outer side of the leg, caused by compression of a spinal nerve root in the lower back, often owing to degeneration of an intervertebral disc. Other characteristics of sciatica include varying degrees of weakness in the leg muscles and numbness or tingling that radiates down the leg. These symptoms occur because of compression and irritation of sciatic nerve or nerveroots

which are forming the sciatic nerve. The areas in the buttock and leg affected by this compression are the areas that the sciatic nerve supplies with messages for normal function. There are many other names for sciatica including lumbosacral radicular syndrome, radiating low back pain, nerve root pain, and nerve root entrapment.

The sciatic nerve is formed in the pelvis from nerve roots that begin in the lower back vertebrae (lumbar 4[L4], lumbar 5 [L5]) and sacrum sacral 1[S1], sacral 2[S2], sacral 3 [S3]). It is the thickest nerve in the

body and is 2 cm wide at its origin. It enters the lower limb via the greater sciatic foramen.

The nerve passes along the back of the thigh, supplying the hamstrings (knee flexors) and all of the muscles below the knee. It also supplies the skin of entire lower extremity below the knee and foot with the exception of the inside of the calf and foot. The impingement or irritation of the sciatic nerve anywhere along its course would cause pain in the area the nerve supplies. The prevalence of sciatic symptoms reported in the literature varies considerably ranging from 2% in the general population to 40% in a selected working population. It is most common during people 40s and 50s.

The condition where back pain and radiating pain of the legs are found together it is called Sciatica syndrome.<sup>2</sup>

#### Ayurvedic review

In Ayurveda, diseases are named by different ways viz. according to Dosha – Dushya involvement, according to symptoms etc. Here the word Gridhrasi is suggestive of the typical character of pain & also the gait of the patient. The word 'Gridhrasi' is derived from the root word - 'Gridhra' which means the bird 'vulture'. It is observed that in this disease, the patient's gait is altered as his legs become tense and slightly curved due to pain. Ultimately, the patients walk similar to the walk of the vulture (gridhra) Hence the name Gridhrasi.<sup>3</sup> Gridhrasi (sciatica) is explained as one among 80 types of Nanatmaja Vatavyadhi.<sup>4</sup>

According to Acharya Charaka, Gridhrasi is one among the Nanatmaja vatavyadhi which is characterized by Stambha (stiffness),

Ruka (pain), toda (pricking pain) & spandana (frequent tingling).

These symptoms initially affect Sphika (buttock) as well as posterior aspects of Uru (thigh), Janu (knee), Janfha (calf) and pada (foot)<sup>5</sup>

#### Etiopathology

All etiological factors (Nidana) of Vata imbalance disorders are the exclusive reasons of sciatica too. Common causes for sciatica-

- Intake of Vata aggravating eatables like- Adhaki (pigeon pea), Chanaka (Bengal gram), Kalaya (peanut), Masura (red lentil), Nishpava (flat bean), Uddalaka etc
- Excess intake of dry, light and cold food
- Excess intake of pungent, bitter and astringent food
- Heavy weight lifting, long walk, improper lie or sitting positions
- Suppression of urine, feces etc
- Improper practice of enema, purgation etc
- Fall or injury etc.<sup>5</sup>

According to Acharya Sushruta, where two kandara i.e. ligament of heel and all the toes are affected by vitiated vata, so movement of the lower limb get restricted, it is known as Gridhrasi.<sup>6</sup>

#### Pathogenesis

Nidana Sevana



Vata or Vata Kapha Dosha Prakopa



Covering of Vata in Dhamani, Shira, Nadi and Seat of Doshas



Rasa, Rakta, Mamsa Dushti



Gridhrasi Roga<sup>7</sup>

The name sciatica refers to a set of symptoms caused by an underlying problem and is not the name of the problem itself.

- a) Disc herniation
- b) Spinal stenosis
- c) Degenerative disc disease
- d) Spondylolysis and spondylolisthesis
- e) Scoliosis
- f) Trauma
- g) Spinal tumours and infection

Extra-spinal sciatica: compression and / or irritation of the sciatic nerve outside of the spine

- a) Piriformis syndrome
- b) Gynaecological problems: fibroids and endometriosis
- c) Bone and soft tissue tumours
- d) Infection
- e) Trauma

In about 90% of cases, sciatica is caused by compression or irritation of one or more nerve roots in the lumbar spine, before the sciatic nerve enters the leg. These nerve roots can become compressed by a herniated disc, spinal canal stenosis (narrowing of spinal canal where the nerve roots are passing through) or neural foramina narrowing (narrowing of the holes where the nerve roots are exiting the spine). The relationship between compression of the nerve root and sciatica is not completely understood. Mechanical compression of the nerve root may produce neurologic deficits, such as numbness and tingling in the leg, but the pain associated with sciatica is only produced if the nerve root is also irritated or inflamed. There is no definite, known cause of the inflammation of the nerve associated with sciatica. However, it is thought that the inflammation could be caused by decreased

blood supply to the nerve or associated nerve roots and/or direct irritation of nerve roots by disc herniation.<sup>8</sup>

### **Clinical Features**

Pain starting from hip area and radiating to the thigh, back, sacral region, popliteal area, calf muscles and foot.

- Pricking sensation in those parts
- Altered gait
- Rarely stiffness or pulsations are found.<sup>8</sup>

### **Diagnosis**

Sciatica is diagnosed by physical examination, neurological testing and patient history. Generally if a patient reports the typical radiating pain in one leg as well as one or more neurological indications of nerve root tension or neurological deficit, sciatica can be diagnosed.

The most applied diagnostic test is the straight leg rising test, which is considered positive if pain in the sciatic nerve is reproduced with between 30 and 70 degrees passive flexion of the straight leg.

Diagnosis of sciatica through imaging can be achieved.

X-rays are rarely needed since they cannot detect a herniated disc. X-rays can show evidence of spondylolisthesis (misalignment of the vertebrae), narrowed disks, or evidence of erosion that may suggest tumor or affecting the spine. Other possible

### **diagnostic tests include:**

Magnetic resonance imaging (MRI), which produces images that allow visualization of the vertebral disks, ligaments, and muscles, as well as the presence of tumors.

Computed tomography (CT) myelography using contrast dye injected into the spine allows visualization of the spinal cord and nerves.<sup>8</sup>

## Types

Based on Dosha imbalance, gridhrasi is of two kinds-

1. Vataja Gridhrasi
2. Vata-kaphaja Gridhrasi

### Vataja Gridhrasi

Curved posture (altered gait) due to pain (pain during lateral bending), severe stiffness, pulsation in back, hip, thigh, knee and foreleg.

### Vata-kaphaja Gridhrasi

Along with the above features, indigestion, drowsiness, nausea, anorexia, heaviness of the leg and freezing sensation in the lower limbs are complained.<sup>9</sup>

## MANAGEMENT

Nidanaparivarjana should be the first line to advised<sup>10</sup>. Excess travel, Bharavahana, Vega Sandharana, Dhukha Shayyasana are to be strictly avoided which may worsen the condition or predispose the second episode. Specific Chikitsa Sootras are to be followed as explained in the Samhitas, if the diagnosis is Kati-Shoola / Graha, Trika-Shoola, Asthi-Majja-KshayaGata-Vata, Marma-abhighaata Gudagata Vata, Pakwashayagata Vata, Shakrutaavruta Vata. Asthi Bhagna, Sandhi Chyuti (Shramsas), Gridhrasi. Apart from this, the following Chikitsa is also advised when Katishula is the symptom.<sup>5</sup>

Ayurveda is specialized in treating Sciatica with highest treatment success rate. It offers excellent Panchakarma therapies along with internal medicines for treating Sciatica. Treatment in Ayurveda is aimed at restoring the equilibrium through correction of the underlying functional in-equilibrium. Ayurvedic treatments for Sciatica concentrate on bringing back the aggravated Vata or Vatakapha to the state of

equilibrium and thereby the state of health.

Treatment comprises of three approaches:

- a) Elimination (Shodhana) of the accumulated toxic products of digestion, metabolism and the disease process.
- b) Pacification (Shamana) and correction of the entities responsible for altered functioning.
- c) Rejuvenation (Rasayana) of the bodily tissue to regain and maintain natural strength and vitality.

The Therapies like:-

1. Abyanga and sweda
2. Patrapotali sweda
3. Sarvangadhara
4. Katibasti
5. Basti

These therapies are directed towards relieving the inflammatory changes and underlying causes of Sciatica, releasing the spasms and nerve compressions in the affected area, strengthening and nourishing entire spine & supporting tissues. Usually the treatment period is 4- 5 weeks according to the severity of the disease. Along with these therapies, Ayurveda has also described Sira-vedhana (Venesection) and Agni-karma (Heat therapy) for treating Sciatica. In four to six weeks, the majority of patients find their symptoms are relieved with treatment. Ayurveda stands as a better alternative to surgery in Sciatica.<sup>11</sup>

**Line of treatment<sup>5</sup>** - As it is one among Vata disorders; all Vata pacifying measures should be undertaken.

- Snehana (oleation) - application, sprinkling or pouring of oil over affected area may carry out.
- Swedana (sudation)- tub bath, Pizichil, sudation with oil added medicated herbal

pastes (Patrapinda Sweda) for 21 days, application of poultice (Upanaha sweda) etc. are beneficial.

Swedana Chikitsa is best advised for Vata and Kapha Shamana. The Snigdha and Ruksha type of Sweda is decided based on the Dosha involved. In the presence of KevalaVata, Dhatukshayaja Vata, Snigdha Sweda is advised in the form of Kati Basti, Naadi Sweda. The Taila and Kashaya Dravya used should have Vata Shamana, Shoolahara, Brumhana Guna. In the presence of Kapha and Aama, Ruksha Sweda is given in the form of Valukasweda. Likewise Nadi Sweda is also indicated without Abhyanga. Once the Aama or Samsrusta Kapha Avasta is cleared, then Vata Chikitsa is advised. Sankara Sweda is advised using suitable drugs. Avagaha Sweda is beneficial to some extent.

•Mridu samshodhana - Mild purgation is preferred.

Vamana- After snehana & Swedana, shodhana is indicated in Gridhrasi. Without Shodhana of body, Basti chikitsa will not give desired effect in patients of Gridhrasi. Vamana is specially advised in patients suffering Vatakaphaja Gridhrasi.<sup>12</sup>

•Vaata anulomana - Kati Pradesha is specifically Apana Vata Sthana. Eranda taila can be advised in the patient for Vatanulomana and Vata Shamana. In Shakrutaavruta Vata, Gridhrasi the treatment advised is administration of Eranda taila.

•Basti (medicated enema) - Mixture of Madhu, Saindhava Lavana, Sneha, Kalka, Kashaya Dravyas indicated in Shoola of Jangha, Uru, Paada and Pristha region and it is indicated in Kapha-avruta conditions also. This treatment has got a major role in the

treatment of different pathogenesis of Gridhrasi and Katishula.

In Kevala Vataja condition Vataghna Basti is planned like Dashamoola, Erandamoola, Balaamoola Niruha Basti. The Kalka Dravya should have Vatahara, Rasayana Guna like Ashwagandha, Shatapushpa. Avapadravya like Maamsa Rasa can be added as an optional.

In Kapha Pradhana or Saama & Aavarana conditions should plan Teekshna Basti like Ksharabasti, Vaitaranabasti.

•Shiravyadha/Rakta-mokshana (venesection or bloodletting) - It is advised to perform 4 Angula (3inch) above or below the knee joint.

•Agni karma (cautery) - It is carried in the severe painful area using a metallic rod.

•Shamana therapy- It generally employed to restore Agni and pacify the excited Dosha. When we consider Samprapti of Gridhrasi due to Apatarpana or Abhighata where VataPrakopa takes place due to Rikitata of Srotas or damage of vital points. Here along with Deepana Pachana properties, drugs having Rasayana and Balya property, that replace the damage nerve tissue and Vata Shamaka property were used i.e. Triyodasanga Guggulu, Ashwagandha Churna, Ekangaveera Rasa and Dashmoola Kwatha etc.

#### **Herbs & Formulations useful in Sciatica:**

•Herbs- Nirgundi, Bala, Punarnava, Eranda, Shigru, Rasna, Jambira, Masha etc.

•Formulations: Yogaraja Guggulu, Triyodasanga guggulu, Gokshuradi Guggulu, Kaishora Guggulu, Vishamushti Vati, Prasarinyadi Kashaya, Dasmoola Kwatha, Sahacharadi Kashaya, Rasna-erandadi Kashaya, Punarnavashtaka

Kashaya, Rasnasaptaka Kashaya, Ekangaveera Rasa, Ashwagandha Churna.

### Self-care at home:

Self care measures can help to relieve the symptoms of sciatica and also prevent recurrence.

- Cold and hot packs. Use alternate cold and hot packs to reduce swelling and relieve discomfort.
- Practice good posture. Stand up straight with your ears aligned with your shoulders, your shoulders aligned with your hips and your buttocks tucked in. Your knees should be bent slightly.
- Regular exercise: Improves flexibility and helps to prevent age-related degenerative changes in your back.
- Lift objects safely. Always lift from a squatting position, using your hips and legs to do the heavy work. Never bend over and lift with a straight back.
- Avoid sitting or standing for extended periods. If you sit at work, take regular breaks to stand and walk around. If you must be on your feet, prop one foot on a small block or footrest, and then switch feet through-out the day.
- Use proper sleeping posture. Take pressure off your back by sleeping on your side or on your back with a pillow under your knees.
- Avoid wearing high heels. Shoes with heels that are more than 1½ inches high shift your weight forward, throwing the body out of alignment.
- Walk / swim - Walking and swimming can help to strengthen your lower back.<sup>13</sup>

### Pathya-apathya<sup>14</sup>

#### Pathya (Wholesome)

Diet - Black Gram, Horse Gram, Wheat, Raktashali (Red Rice), Amlaphala,

Dadima, Draksha, Shigru, Patola, Milk, Ghee, Mamsarasa (Meat Soup), Dhanyamla (Sour Gruel), Eranda Taila (Castor Oil), Tila Taila (Sesame Oil) etc.

Habits - Avagaha (tub bath), Abhyanga (oil massage), Ushnodaka, sweda (warm water bath).

#### Apathya (Unwholesome)

Diet – Kalaya (peanut; *Lathyrus sativus* Linn.), Chanaka- Bengal gram (*Cicer arietinum* Linn), Rajamasha (Rajmaa) etc.

Habits - Vegadharana (suppression of urges), Vyavaya (sexual indulgence), Vyayama (heavy exercise), Diva swapna (day sleep), Prajagarana (sleepless nights), Yana (riding vehicles).

### DISCUSSION

Gridhrasi is a Shoolapradhana Nanatmaja Vata-vyadhi, intervening with the functional ability of low back & lower limbs. In this disease onset of Ruk (pain), Toda (numbing pain) and Stambha (stiffness) is initially in Kati (lumbosacral region) and radiates distal to Pristha, Janu, Jangha till Paada. Arundutta in his commentary defined clearly that due to Vata in Kandara (tendon) the pain is produced at the time of raising leg straight and it restricts the movement of thigh. This is an important clinical test for the diagnosis of sciatica known as SLR.

A similar condition in modern parlance is sciatica. It is the distribution of pain along the course of the sciatic nerve or its component nerve roots is characteristic. Radiating deep seated cramping pain in buttocks followed with numbness and paraesthesia in lower extremities favours the diagnosis. Restricted SLR test consolidates the diagnosis clinically and even the illness can be confirmed by imaging techniques.

Prolapse of intervertebral disc, external mechanical pressure and degenerative changes of the lumbar spine are the commonest cause for sciatica.

### **CONCLUSION**

Sciatica is a fairly common health problem with a lifetime incidence (the number of individuals that have experienced sciatica at some point in their lives) varying from 2% to 40%. The most common cause of sciatica is a herniated disc. The precise mechanism of sciatica is unclear. In addition to mechanical compression, inflammation may play a role. Gridhrasi is a Shoola-pradhana Nanatmaja Vata-vyadhi, intervening with the functional ability of low back & lower limbs. In this disease onset of Ruk (pain), Toda (numbing pain) and Stambha (stiffness) is initially in Kati (lumbosacral region) and radiates distal to Pristha, Janu, Jangha till Paada. Basti is the most important procedure in Ayurveda for curing Sciatica permanently. Gridhrasi is a painful condition and mainly Vatavyadhi Chikitsa has been advocated. Gridhrasi can be equated with sciatica in modern parlance.

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