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An Observational case Study of Gridhrasi as Sciatica Evaluated by Magnetic Resonance Imaging of the Lumbar Spine

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Abstract

Background: *Gridhrasi* is a *Vataja* disorder derived from word 'Gridh' means vulture in Ayurveda, characterized by Ruka [1] (pain), Toda[1] (pricking sensation), *Spandhan*[1] (twitching),*Stambha*[1] (stiffness), and *Gati Sanga*(nighrah)[1][2][3][4] (difficulty in walking), with pain radiating from the *Sphik* (hip) to the Pada (foot) [1]. This clinical picture closely resembles sciatica, a common condition with a lifetime incidence of 10-40% [5]. A gap exists between the holistic diagnosis of Ayurveda's Nidana *Panchaka* and the structural findings of modern imaging like MRI.

Aim: To conduct an observational study of Gridhrasi by evaluating it as sciatica through MRI of the lumbar spine.

Methods: An observational study was conducted on patients presenting with classical symptoms of *Gridhrasi*. A detailed history, Nidana *Panchaka* evaluation, and clinical examination were performed. MRI scans of the lumbosacral spine were obtained to assess disc pathology and nerve compression.

Results: A significant correlation was observed. A representative case of a 38-year-old male with *Gridhrasi* symptoms showed MRI findings of disc prolapse and radiculopathy at L4-L5 and L5-S1 levels, directly corresponding to the clinical presentation of sciatica.

Conclusion: *Gridhrasi* is clinically comparable to sciatica. The integration of the Nidana Panchaka framework with modern MRI diagnostics provides a comprehensive, validated, and interdisciplinary approach to diagnosis, which can lead to more effective management strategies.

Keywords- *Ruka, Toda, Spandhan, Stambha, Gati Sangh, MRI Lumbar Spine.*

Introduction :

Gridhrasi is a classical disease entity in Ayurveda, primarily a *Vataja Nanatmaja* Vyadhi. Its defining symptoms include Ruka (radiating pain), Toda (pricking sensation), Stambha (stiffness), Spandana (twitching), and Gati Sanga (impaired movement), typically originating in the *Sphik* (buttocks/hip) and radiating down to the foot along the sciatic nerve pathway[1]. In Ayurvedic medicine, the illness Sciatica is comparable to *Gridhrasi*, which is classified as a *Nanatmaja Vataja* Vikara.[7]

In modern medicine, sciatica (lumbosacral radiculopathy) is a widespread condition causing significant pain and disability. Modern medicine offers objective, structural insights through tools like Magnetic Resonance Imaging (MRI) of Lumbar Spine[6]. Sciatica is a crippling ailment caused by sciatic nerve root pathology that makes it difficult to walk and leaves patients with pain and paresthesia in the sciatic nerve distribution. Because of its severity, it can occasionally interfere with a person's everyday activities and lower their quality of life. Typically, coughing, bending, or twisting makes the discomfort worse. Analgesics, muscle relaxants, painkillers, anticonvulsants, and NSAIDs to reduce inflammation are frequently used in modern treatment.[8]

Sciatica is a name given to pain in the area of distribution of the sciatic nerve (L4 to S3)[9]. While Ayurveda provides a holistic understanding through its Nidana *Panchaka* (five-fold diagnostic criteria). This study aims to bridge this diagnostic gap by correlating the subjective features of *Gridhrasi* with the objective evidence from MRI, thereby validating Ayurvedic principles and enhancing diagnostic clarity for improved patient care.

Clinical Magnetic Resonance Imaging (MRI) uses the magnetic properties of hydrogen and its interaction with both a large external magnetic field and *radiowaves* to produce highly detailed images of the human body.[10]

Aim :

To conduct an observational case study of *Gridhrasi* as sciatica by evaluating findings from MRI of the lumbar spine.

Objectives :

1. To study *Gridhrasi*, sciatica, and MRI of the spine in detail.
2. To correlate the clinical presentation of *Gridhrasi* with sciatica.
3. To enhance the diagnostic approach by integrating Ayurveda and modern medicine.

Materials and Methods:

Study Type: Observational Clinical Study.

Inclusion Criteria:

- Patients aged 20–60 years.
- Patients presenting with classical symptoms of *Gridhrasi* (radiating pain, stiffness, numbness along the sciatic nerve).
- Patients willing to undergo an MRI Lumbar Spine evaluation.

Exclusion Criteria:

- Patients with trauma, fractures, congenital spinal deformities, malignancies, or systemic illnesses like diabetes and spinal tuberculosis.
- Patients with a history of spinal surgery.

Assessment Tools:

- **Ayurvedic:** Comprehensive evaluation using the Nidana *Panchaka* framework.
- **Modern:** MRI Lumbar Spine scans, with emphasis on L4–L5 and L5–S1 segments[5].

- **Causative Factors (Nidana):** Excessive walking, standing, or sitting; heavy exertion; improper posture; trauma to the back/waist; suppression of natural urges.

The pathogenesis of *Gridhrasi* can be summarized as follows:

Nidana (Causative factors like Ruksha, *Sheeta*, Ati *Vyayama*, *Vegadharana*)

⬇

Vata *Prakopa* (Mainly Vata, sometimes with Kapha association - Vata-*Kaphaja*)

⬇

Dushya *Dushti* (Affecting *Mamsa*, Meda, *Asthi*, *Majja*, Rakta)

⬇

***Srotodushti* (Sanga/*Margavarana* in *Raktavaha*, *Mamsavaha*, *Majjavaha* Srotas)**

⬇

***Sthana Samshraya* in *Katipradesha* (Lumbar region), *Sphik*, Uru, Janu, *Jangha*, Pada**

⬇

Vyadhi* Utpatti → *Gridhrasi

Pathogenesis (*Samprapti*)

Results :

A significant correlation was observed between the classical symptoms of *Gridhrasi* and MRI Lumbar spine findings. A representative case is presented below:

- **Case:** A 38-year-old male presented with clinical symptoms of *Gridhrasi*, including Ruja radiating pain in right leg, Spandhana, Stambha, Toda, and mild Gati Sanga in right leg for two months.

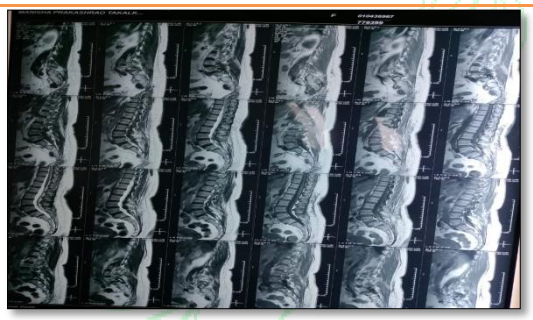
- ***Asthavidha* Pariksha**
  - BP: 130/80 mmHg
  - PR: 76/min
  - RR: 18/min
  - Temperature: 98.6°F
  - Wt: 80 kg
  - BMI: 27.5kg/m2
  - Nadi (pulse): Vata-*Kaphaja*
  - Mala (bowels) : *Asamyak* (Constipated)
  - Mutra (urine) : Samyak
  - *Jihwa* (tongue) : Sama (coated)
  - *Shabdha* (speech): *Prakruta*
  - Sparsha (skin) : *Anushnasita*
  - Druk (eyes): *Prakruta*
  - Akruti (posture): Madhyama

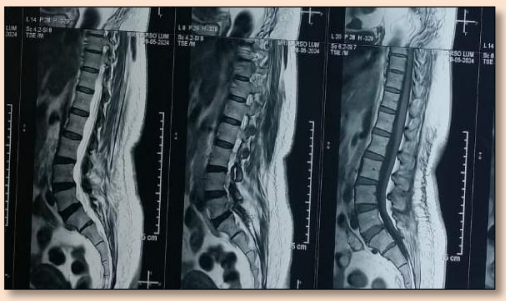
SLR test (active) :

- Positive at 30° on the right leg
- Negative on the left leg.

MRI Lumbar Spine Findings:

- Intervertebral disc prolapses and lumbar radiculopathy at **L4–L5** and **L5–S1** levels.
- Disc bulge with severe *facetal* arthropathy and minimal right *facetal* effusion at L4/5, indenting the bilateral exiting L4 nerve root.
- Diffuse disc bulge with moderate *facetal* joint arthropathy at L3/4 level, indenting bilateral exiting L4 nerve roots.
- The MRI findings of nerve root compression at these levels directly explained the patient's radiating pain (Ruka), consistent with both sciatica and the classical description of *Gridhrasi*.





Discussion :

This study highlights a strong correlation between *Gridhrasi* and Sciatica. The *Nidanas* (causative factors) described in Ayurveda, such as improper posture and excessive exertion, lead to Vata *Prakopa*. This vitiated Vata manifests as Ruka, Toda, and Stambha, which clinically present as sciatica-like pain.

The MRI findings provide an objective anatomical correlate to the Ayurvedic pathogenesis (*Samprapti*). For instance, a disc prolapse at L4-L5 compressing the L5 nerve root causes pain radiating to the foot, which perfectly corresponds to the Rupa of Ruka described in *Gridhrasi*. The concepts of Vata *Prakopa* and *Margavarana* (obstruction in the channels) can be directly correlated with modern concepts of nerve irritation and mechanical compression.

Conclusion :

1. Gridhrasi, as described in Ayurveda with Vata and Vata-Kapha predominance[1], is clinically comparable to sciatica.
2. The Nidana Panchaka framework offers a comprehensive diagnostic tool for understanding the etiology, pathogenesis, and clinical features of the disease.
3. MRI of the lumbar spine serves as a powerful confirmatory tool for identifying underlying anatomical pathologies like disc prolapse and nerve compression.
4. Correlating Ayurvedic diagnosis with modern imaging validates both diagnostic paradigms and strengthens interdisciplinary understanding.
5. An integrative diagnostic approach paves the way for a more holistic and effective management strategy for Gridhrasi/Sciatica, combining the strengths of both medical systems.

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Declaration :

Conflict of Interest : None

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