AN AYURVEDIC APPROACH IN THE MANAGEMENT OF LUMBAR INTERVERTEBRAL DISC PROLAPSE WITH SPECIAL REFERENCE TO GRIDHRASI-A SINGLE CASE STUDY

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ABSTRACT

Low back pain is a clinical symptom with 60-80% of world’s population experiencing pain at some time in their lives. Work absence due to lowback pain has increased significantly in last 30 years. A common cause of back pain with radiculopathy is a herniated disc with nerve root impingement, resulting in back pain with radiation down the leg. Based on the cardinal presentation this condition can be correlated to Gridhrasi, here the Shoola starts from Sphik Pradesha radiates down to Prushtabhaga (posterior aspect) of Uru (thigh), Janu (knee joint), Janga (calf region) and Pada (foot) respectively. The treatment protocol of Gridrasi include Snehana, Swedana, Basti, Siravyadhha and Agnikarma. This is a case Vatakaphaja Gridradi treated in lines of Gridrasi for Vata dosha which is associated with the Kapha. Improvements were noticed both interms of subjectively the symptoms and objectively the intervertebral disc space.

KEYWORDS: Lumbar intervertebral disc prolapse, Gridrasi.

INTRODUCTION

Low back pain is the most common medical cause of inability to work. In the great majority of patients it is due to abnormalities of joints and ligaments in the lumbar spine rather than herniation of an intervertebral disc. Pain in the distribution of the lumbar or sacral roots is often due to disc protrusion, but can be a feature of other rare but important disorders.
including spinal tumour, malignant disease in the pelvis and tuberculosis of the vertebral bodies, etc., Acute lumbar disc herniation is often precipitated by trauma, usually by lifting heavy weights while the spine is flexed. The nucleus pulposus may bulge or rupture on nerve endings in the spinal ligaments, changes in the vertebral joints or pressure on nerve roots. Radicular back pain is typically sharp radiates from the low back to a leg within the territory of a nerve root as the cause of sciatica. Coughing, sneezing, or voluntary contraction of abdominal muscles may elicit the radiating pain. The pain may increase in postures that stretch the nerves and nerve roots.[1]

A 32 year old male patient with Lumbar intervertebral disc prolapse presented with low back ache radiating to both lower limbs and associated with numbness. Gridhrasi is a Nanaatmaja Vatavyadhi characterized by pain primarily in the Sphik Pradesha which radiates to the leg through the Prishtabhaga(posterior aspect) of Uru, Janu, Jangha and Pada. Sthamba, Ruk, Toda and Spandana are additional Lakshanas of Vataja Gridrasi. Whereas Aruchi, Tandra and Gaurava Lakshanas are seen in Vatakaphaja Gridrasi. On the presentation of cardinal symptom this condition can be correlated to Sciatica .The radiating pain restricts the person lifting his leg. The line of treatment include Senhana, Swedana, Basti, Siravyadha and Agnikarma.[2]

As the pain used to aggravate at Kaphakala i.e.morning hours with mild heaviness, this is diagnosed as Vatakaphaja Gridrasi and treated in those lines.

CASE REPORT

A 32 year old male patient, presented to the OPD of Panchakarma Department with low back pain radiating to both lower limbs, pain more on left side associated with heaviness and numbness since 6 months. Pain was gradual in onset, radiating to both lower limbs on posterior side, progressive and increasing severity in nature. Pain, heaviness and numbness increase in the early morning hours and after period of inactivity. There was no motor weakness. Due to severe pain patient was unable to walk even 2-3 steps and had disturbed sleep.

Past history

No history of trauma, fever, weight loss and any other systemic illness.
No history of any specific medication and not a smoker/alcoholic.
Treatment history
Patient had taken modern medication, but did not find much relief in symptoms.

Occupational history
Patient is businessmen, he used to lift weight and bike riding for long duration.

Personal History
Patient is of mixed diet with good appetite with regular bowel habits and no addiction and he has disturbed sleep due to severe pain.

Ashtavidha Pariksha

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<td>1</td>
<td>Nadi</td>
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<td>Sparsha</td>
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<td>7</td>
<td>Druk</td>
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<td>8</td>
<td>Akruti</td>
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EXAMINATION
Systemic examination:
Respiratory system – Normal Vesicular Breath Sounds heard.
Cardiovascular system- Heart Sounds Normal.
Per Abdomen – No Organomegaly
Nervous system and Musculoskeletal system:

Lumbar spine Examination
On Inspection: No swelling, or any deformity in the lumbar curvature is seen.
On Palpation: Tenderness at L2, L3,L4, L5,S1 spinal process.

Range of Motion:
Flexion:
Standing Position -30* Pain more on end of the flexion.
Lying position- 10* Pain more from the beginning of the movement.
Extension- 20*, Pain worsened at Sphinx position.
Lateral Flexion – 10*, Pain worsened on movement.
Straight Leg Raising Test –B/L + ve at 30*.
Lassegue’s Test – B/L- +ve at 30°.
Bragard’s Test - B/L- +ve.
Flip test – B/L - +ve

His biochemical and haematological parameters were normal. MRI Lumbosacral Spine initially done on 5/11/2016. AP spinal canal dimension at the Pedicular and IV disc levels.

<table>
<thead>
<tr>
<th>Sl. no</th>
<th>Treatment</th>
<th>1st setting</th>
<th>2nd setting</th>
<th>3rd setting</th>
<th>4th setting</th>
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<tbody>
<tr>
<td>1</td>
<td>Gandarvahasthadieranda Taila 20ml + Milk 20ml at night</td>
<td>First 3 days</td>
<td>First 3 days</td>
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<td>2</td>
<td>Sarvanga Choorna pinda Sweda with equal quantity of Kolkulathadi and Triphala Choorna</td>
<td>First 5 days</td>
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<tr>
<td>3</td>
<td>Sarvanga Jambeera Pinda Sweda with Karpooradi and Kottamchukkadi Taila</td>
<td>6th-12th day</td>
<td>6th-12th day</td>
<td>6th-12th day</td>
<td>6th-12th day</td>
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<tr>
<td>4</td>
<td>Kati Basti with Karpooradi and Kottam chakkadi Taila</td>
<td>12 days</td>
<td>10 days</td>
<td>10 days</td>
<td>10 days</td>
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<tr>
<td>5</td>
<td>Basti</td>
<td>Kala Basti</td>
<td>Kala Basti</td>
<td>Kala Basti</td>
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**Kala Basti**

Anuvasana Basti – Sahacharadi Taila- 70ml

Niruha Basti:
Honey -100ml

Saindava Lavana- 6gm

Guggulutikthaka Ghrita- 70ml

Ashwagandh bala lakshadi Taila- 70ml

Shatapushpa Kalka- 15gm

Dashamoola + Balamoola + Eranda moola + Amrita +Rasna Kashaya- 250ml

Gomutra – 100ml.

<table>
<thead>
<tr>
<th>Day</th>
<th>Morning</th>
<th>Afternoon</th>
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<tbody>
<tr>
<td>Day1</td>
<td>AB</td>
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<td>Day2</td>
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<td>Day5</td>
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<tr>
<td>Day6</td>
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<td>AB</td>
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<tr>
<td>Day7</td>
<td>AB</td>
<td>AB</td>
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<tr>
<td>Day8</td>
<td>NB</td>
<td>AB</td>
</tr>
<tr>
<td>Day9</td>
<td>AB</td>
<td>AB</td>
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</table>

12 days treatment was administered in 1st sitting, after each sitting 6 months gap was given and total 4 sitting of treatment was given.
Shamanoushadis which was given after therapy and its duration.

<table>
<thead>
<tr>
<th></th>
<th>Medicine</th>
<th>Dosage</th>
<th>Duration</th>
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<tbody>
<tr>
<td>1</td>
<td>T.Shallaki MR 1-0-1, after food.</td>
<td>1 month</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>T.Reosto 1-0-1, after food</td>
<td>6 months</td>
<td></td>
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<tr>
<td>3</td>
<td>Amruthadi Guggulu DS 1-0-1, after food.</td>
<td>3 months</td>
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<tr>
<td>4</td>
<td>Shamana Sneha with Ksheerabala Taila 20ml at 8.30am on empty stomach with hot water.</td>
<td>1 month</td>
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<tr>
<td>5</td>
<td>Gandharvahasthadi Kashaya 15ml-0-15ml with equal quantity of warm water, after food.</td>
<td>3 months</td>
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</table>

**OBSERVATION AND RESULTS**

By the end of 1st sitting of treatment severity of pain and numbness reduced significantly. Patient was able to walk upto 5 meters without much difficulty. After 1 month of Shamana Sneha and Shallaki MR and after 3 months of Shamanaoushadis patient was comfortable, when he started with on and off pain after 5 months he was admitted for the 2nd sitting of treatment. The same treatment were followed during 2nd sitting and after 2nd sitting of treatment and Shamanaoushadis patient was absolutely relieved from all signs and symptoms. He was advised to take 2 more course of same treatment after every 6 months. By end of 4th sitting patient was able to walk continuously without pain, and he was able to do his day to day activities without pain.

Though he had no continuous pain, he used to get pain on and off with exertion. He was treated with two more course of treatment followed by only Shamana Sneha with Ksheerabala Taila for 1 month and Tablet Reosto totally for almost 2 years.

Antero–posterior diameter of the physiological spinal canal at the disc levels

<table>
<thead>
<tr>
<th>Disc level</th>
<th>In 2016 (in mm) BT</th>
<th>In 2019 (in mm) – AT</th>
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<tr>
<td>L1 – L2</td>
<td>7</td>
<td>9.2</td>
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<tr>
<td>L2 – L3</td>
<td>4.3</td>
<td>5.9</td>
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<td>L3 – L4</td>
<td>5.3</td>
<td>6.9</td>
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<tr>
<td>L4 – L5</td>
<td>5.5</td>
<td>6.9</td>
</tr>
<tr>
<td>L5 – S1</td>
<td>5.7</td>
<td>6.2</td>
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The presence of neural foramen compression is more important in determining the clinical signs and symptoms while the type of disc herniation correlates poorly with clinical signs and symptoms.\[^3\]

There was reduction in the size of the protrusion leading to the increase in the A-P diameter of the physiological spinal canal. The increase in the space was relieved compression of the nerves and has lead to the improvement in the symptoms. This has occurred at all the level in
the lumbar region. So there is significant improvement in the symptoms. We believe that the treatment has lead to the reduction in the size of the protruded disc.

He was advised to avoid forward bending, lifting heavy object from ground, riding bike, excess travelling and exposure to cold wind. In food he was advised to take chapatti, rice, curry prepared of horsegram, mutton or chicken, vegetables like snakegaurd, drumstick, brinjal and garlic. He was advised to avoid pulses like green gram, cow pea, bengal gram and dried fish.\[4\]

Totally patient was treated for 2 years with 4 course Panchakarma therapies, Shamana Sneha totally for 4 months, 1 month after each course, T. Reosto for almost 2 years and remaining Shamanoushadis for initial 3 months.

**DISCUSSION**

Low back pain is one of the common aliment which affects the population. Due to various cause its presentation varies. Non mechanical back pain is constant and has little variation in intensity or with activity. Anorexia, dyspepsia, change in bowel habit, prostatism or abnormal per vagina bleeding may indicate gastric, pancreatic, colonic, prostatic or uterine/ovarian malignancies respectively. If there is evidence of a spinal cord or cauda equine lesion, this needs neurosurgical assessment.

Mechanical pain accounts for more than 90% of back pain episodes, usually affecting patients aged 20-55 years. Onset is often acute, associated with lifting or bending .Mechanical pain is related to activity and is generally relieved by rest. It is usually confined to the lumbosacral region, buttock to thigh, is asymmetrical, and does not radiate beyond the knee.

Radicular pain has severe, sharp, lancinating quality, radiates down the back of the leg beyond the knee and is aggravated by coughing, sneezing and straining at stool more than back movement.

Inflammatory pain due to spondylitis has a more gradual onset and often occurs before the age of 30.It is usually axial and symmetrical and spread over many segments which may include the thoracic region. Pain from sacroilitis is maximal in the buttock, with radiation down the posterior thigh. Inflammatory pain associates with marked morning inactivity stiffness and improves rather than worsens with activity.\[5\]
A common cause of lowback pain with radiculopathy is a herniated disc with nerve root impingement, resulting in back pain radiation down the leg.\(^6\)

The nucleus pulposus may bulge or rupture through the annulus fibrous, giving rise to pressure on nerve endings in the spinal ligaments, changes in the vertebral joints or pressure on nerve roots.

Protrusion of the disc is most common in the most mobile positions of the spine, as these portions are subjected to greater stress and strain. In Lumbosacral region above and below L5 vertebra i.e., L4-L5 and L5-S1, 80% of disc prolapse occur at this region.\(^7\)

Protrusion of the intervertebral disc may be central, paramedian or lateral, of which the commonest is the lateral to the posterior longitudinal ligament. The lateral protrusion almost always presses on the nerve root. The nerve root that comes out from the corresponding intervertebral foramen is usually compressed. The root may be compressed backwards and medially or the protrusion may displace the root laterally and presents itself in the angle between the spinal cord and the nerve root.

Types of Intervertebral Disc Prolapse are\(^8\)

- Disc bulging or Protrusion- Eccentric accumulation of nucleus with slight deformity of the annulus.
- Prolapsed Disc is the one in which eccentric nucleus produces a definite deformity as it works through the fibres of the annulus.
- Extruded Disc – The disc comes out into the canal and impinges on the adjacent nerve root.
- Sequestrated Disc- The nuclear material has separated from the disc itself and potentially migrates.

The symptoms may vary depending upon the type of disc herniation and level of compression of nerve root. Patients may present with Radiculopathy i.e. low back ache with referred sciatic pain alone or Sensory neuropathy i.e. along with pain the sensory symptoms like paraesthesia, pins and needles, and Myelopathy i.e. weakness of the muscles in case of motor involvement. In acute cases onset of pain is sudden dull ache /stabbing/shooting type. In chronic cases pain is intermittent and progressive type.\(^9\)
Plain X-rays of the lumbar spine are of little value in the diagnosis of lumbar disc disease, CT/MRI provide helpful images of the disc protrusion and/or narrowing of the exit foramina.

Conservative treatment with analgesia and early mobilisation are first line of treatment. Back strengthening exercises are advised. Surgery can be considered if there is no response to conservative treatment and progressive motor symptoms.

This Lumbar intervertebral disc prolapse causing low back pain and referred sciatic pain with numbness can be paralleled with Gridrasi as per the explanation of Charaka. In the Samprapti of Vataja Gridrasi it is Shoola Pradhana with Sthamba, Toda Lakshanas. The pathology of herniation of disc can be compared to Srams which is one of the Roopas of Vikruta Vatadosha. Here the patient presented with Anubandha of Kaphadosha Lakshanas like Gourava and aggravation of Lakshanas at Kaphaja Kala i.e is early morning.

Gridrasi is Vataja Nanatmaja Vyadhi, treating in the line of Vata Vyadhi and treating Anubandha Dosha is also important. At first treatment started with Choorna Pinda Sweda, so as to treat the Kapha or Ama associated with Vata. The drug used are Kolakulathadi Choorna which is Kashaya Tikta Rasa, Ushna Veerya, Vatanubandha Kapha Shamana, Medohara and Triphala Choorna which is Kashaya Pradhana, Samasithoshna and Kapha Pitta Shamana. This combination works as Ushna, Vatakaphahara and helps in reducing the pain and numbness, stiffness, heaviness(early morning) of limbs.

Jambeera Pinda Sweda was done using Kottamchukkadi and Karpooradi Taila. Jambeera Pinda Sweda is Ushna, Teekshna, Vatakaphahara Chikitsa. As it is Snigdha Pinda Sweda it is more of Vatahara than Kaphahara. As Charaka says by Swedana, Srasta will placed in its Swa Sthana and Sthabda will be made Vinamana. Both Pinda swedas which are Teekshna Sweda helps in relieving stiffness in paraspinal muscles, reduces Sthamba, Toda and might have reduced the degree of herniation of disc and thus reducing symptoms significantly.

Kati Basti with Karpooradi and Kottamchukkadi Taila, acts as Sthanika Snigdha Sweda. Both Tailas are Ushna Snigdha used in Kaphaanubandha condition. The Sthanika Snigdha Sweda at Kati region relaxes the muscles and helps in reducing compression of nerve root which results in reduction of symptoms.

Drugs of the Gandarvahasthadi Eranda Taila are Eranda Taila, Shunti, Yava. In Chakradata in the context of Gridrasi Chikitsa it is mentioned that before administration of Basti there
should be Deeptagni\textsuperscript{[15]} Eranda which is Sramsana, Vatahara, Shunti which is Pachaka, Ushna, Kaphagna and Vatahara, Yava which is Kashaya Madhura, Lekhana and Agnivardhaka. This combination does Koshta Shodana, Vatanulomana and Deepana\textsuperscript{[16]} Which is essential before administration of Basti, here patient was given Gandarvahasthadi Eranda Taila orally for 3 days.

*Kala Basti* administered as patient was Madhyama Vaya and Balavan. Anuvasana Basti was given with Sahacharadi Taila, as it is choice of Taila in Adhonabhigata Vatavyadhi. It is Samashithoshna Veerya, Vatakaphashamana. Shatavari in this Taila is Snigdha, Balya which helped in reducing Vata, nourishing the Asthi dhatu. The Sneha Dravyas used in Niruha Basti were Guggulutiktaka Ghrita which nourishes Asthi Dhatu as Tiktha Rasa, Ruksha and pacifies Vata as it is Snigdha. Ashwagandhabalalakshadi Taila which is Anushna, Balya and Shothahara, this Taila and Ghrita combination act as Tridoshahara mainly Vatakaphahara, Balya specifically to Asthi Dhatu there by arrests degeneration of disc and nourishes the bones.\textsuperscript{[17]}

Among the drugs used to prepare the Kashaya Eranadamula, Dashamula are Vatahara, Shothahara, Balamula is Brihmana, Rasna is Vatahara, Shoolahara and Amrita corrects the Dhatwagni and nourishes the Asthidhatu as it is Rasayana having Tikta Rasa and Sukshma Guna.\textsuperscript{[18]}

Gomutra used as Avapa into Basti is, Tiktha Kashaya, Kaphavatahara, Katu, Kshara, Teekshna and Ushna. This acts as Kaphahara in the management of Kaphavataja Gridrasi. This combination of Niruha Basti being Teekshna Shodana and Vatakaphahara in nature resulted in reducing Sthamba, Shoola and Gourava.\textsuperscript{[19]}

Ksheerabala Taila which was given as Shamanasneha. Reference says that habit of taking Bala Taila cures Gridrasi. As it contains Bala, Ksheera and Tila Taila, it is Madhura, Sheeta, Vatapittashaman and Guru Snigdha Guna.\textsuperscript{[20]}

Reosto contains powedrs of Arjuna, Guggulu, Bala, Godanti Bhasma, Kukkutanda tvak Bhasma processed in Vamsha, Kumari and Dhanyak. This tablet appears to inhibit the bone reosrption and renormalizes bone formation through its anti oxidant, anti inflammatory adaptogenic and calcium supplementation properties which controls the bone degeneration and strengthen the disc and reduces compression caused by herniated disc.\textsuperscript{[21]}
Shallaki MR tablet contains Shallaki (Boswellia serrata extract) it is Teekshna, Ushna, Tikta Katuka, Shothahara and Langali (Gloriosa superba extract) is Kashaya Anurasa, Vatanuloma which act as muscle relaxant and helps in relieving nerve root compression caused by prolapsed disc.[22]

Amruthadi Guggulu contains Guduchi, Guggulu, Triphala, Danti, Trikatu, Trivruth. Guduchi acts as Rasayana and Dhatwagni Deepana, Guggulu acts as Shoolahara, Shotahara, Trikatu is Ushna Teekshana acts as Kaphahara, Agni Deepana, Triphala, Trivruth and Danti acts as Rechaka.[23] This combination Kaphahara, Vatanulomana and Shoolahara there by reducing the symptoms.

Gandharvahastadi Kashaya is Srushta vin Mutra, Deepana, Ruchya and Ushna help to maintain Deeptagni and Vatanulomana thereby reducing symptoms.[24]

These Panchakarma therapies and Shamanaoushadies have not only given the relief from the symptoms but also increased all the 5 Lumbar Intervertebral Disc Space and reduced the severity of disc herniation as evident by the MRI of Lumbosacral spine of before and after treatment.

CONCLUSION
Lumbar Intervertebral disc prolapse with radiculopathy can be paralleled with Gridrasi. The above discussed Panchakarma therapies and Shamanaoushadies have given maximum relief from the symptoms of this patient of Vatakaphaja Gridrasi.

All the 5 Lumbar Intervertebral disc space has increased after treatment along with the reduction in the severity of disc herniation as evident by the MRI of LS Spine of the patient before and after treatment. So this treatment can be effectively adopted in the management of Gridrasi depending upon the condition and presentation of the patient.

BIBLIOGRAPHY


