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A CASE STUDY ON AYURVEDIC MANAGEMENT OF LUMBAR DISC HERNIATION

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ABSTRACT

Lumbar disc herniation (LDH) is the most common diagnosis among the degenerative abnormalities of the lumbar spine (affecting 2 to 3% of the population), and is the principal cause of spinal surgery among the adult population. The nucleus pulposus may bulge or rupture through the annulus fibrosis, giving rise to pressure on nerve endings in the spinal ligaments, changes in the vertebral joints or pressure on nerve roots cause pain in low back only or referred to a leg, buttock, or hip. Here an excellent result was seen in 26 year old male diagnosed with sciatica due to lumbar disc herniation (adviced surgical intervention) using multiple Ayurvedic treatment modalities with *shodhan* and *shaman chikitsa* for 38 days. The response to the treatment was recorded and found excellent result on VAS and on MRI changes before and after treatment. This study shows the cases of LDH may be successfully managed with Ayurvedic treatment.

KEYWORDS: Low back pain, lumbar disc herniation, *Ayurvedic* treatment, VAS.

INTRODUCTION

Lumbar disc herniation consists of displacement of the content of the inter-vertebral disc (pulposus nucleus) through its external membrane (fibrous ring), generally in its posterio-lateral region. Depending on the volume of herniated material, there may be compression and irritation of the lumbar nerve roots and the dural sac represented clinically by the pain known as sciatica.[1] Sciatica is a symptom defined as unilateral, well-localised leg pain with a sharp,

shooting or burning quality that approximates to the dermatomal distribution of the sciatic nerve down the posterior lateral aspect of the leg, and normally radiates to the foot or ankle. It is often associated with numbness or paraesthesia in the same distribution.[2]

Approximately 95% of disc herniations in the lumbar area occur at L4-L5 or L5-S1.[3] Lumbar disc herniation is relatively common, with 5 to 20 cases per 1000 adults annually. This is most prevalent in the third to the fifth decade of life, with a male: female (2:1).[4] The primary signs and symptoms of lumbar disc herniation are radicular pain, sensory abnormalities, and weakness in the distribution of one or more lumbosacral nerve roots.[5] The intervertebral disc consists of an inner nucleus pulposus and an outer annulus fibrosus. The central nucleus pulposus is a site of collagen secretion and contains numerous proteoglycans, which facilitate water retention, creating hydrostatic pressure to resist axial compression of the spine.[6] In contrast, the annulus fibrosus functions to maintain the nucleus pulposus within the centre of the disc with low amount of proteoglycans.[7] In 2014, The LDH with Radiculopathy Work Group of the North American Spine Society's (NASS) Evidence-Based Guideline Development Committee recommended manual muscle testing, sensory testing, and supine SLR test as the gold standard for clinical diagnosis of LDH.[8] Magnetic resonance imaging (MRI) is the gold standard for imaging to confirm suspected LDH with a diagnostic accuracy of 97%.[9] MRI findings of increased T2-weighted signal from the posterior 10% of the disc diameter are highly suggestive of disc herniation.[10] The NASS Evidence-Based Guideline Development Committee recommends CT myelography as an appropriate diagnostic tool for confirming suspected LDH as an alternative to MRI.[11]

Potential complications of unresolved sciatic nerve compression include[12]

- Increased pain over time
- Paresthesia in the affected leg
- Loss of muscular strength in the affected leg
- Loss of bowel and bladder function
- Permanent nerve damage

Lumbar discectomy is indicated in cases of unremitting radicular symptoms that correspond to radiographic evidence of nerve root compression by a herniated disc in patients that have failed conservative treatment methods.

In the modern medicine, the disease is managed by NSAIDs, analgesic drugs, physiotherapy, and corticosteroid, but these drugs have lots of side effects such as – long term use of of Gabapentine produces dizziness and unsteadiness and Amitriptyline produces epigastric distress, urinary retention, sedation, mental confusion, cardiac arrhythmias. Long term use of Methyl-prednisolone produces cushing's habitus, fragile skin, purple-striae, hyperglycaemia, muscular weakness, peptic ulceration, osteoporosis, growth retardation etc. are the usual side effect.[13] And operative management of LDH (microdiscectomy) in several large studies has been previously associated with improved short-term benefits[14] but later on nearly 54% have a relapse of either low back or radicular pain.[15] Therefore, there is a definite need to explore more efficacious and radical cure to this illness**.** In this case it has been correlated with *gradhasi* due to similarity of clinical manifestation and pathogenesis. In *gridhrasi* pain starts from *Sphik* (buttock) and then radiates to *Kati*, *Prushta* (back), *Uru* (thigh), *Janu* (knee), *Jangha* (calf), and *Pada* (foot) along with *Stambha* (stiffness), *Toda* (pricking pain), *Spandana* (twitching).[16]

In this disease, mainly *Apana Vayu* vitiation are observed, So for, treatment of *Gridhrasi*, drug of choice should have *Vatashamaka*, *Kaphashamaka*, *Vatanulomaka*, *Dipana-Pachana* and *Shulaprashamana* properties.

CASE REPORT

Age – 26 year

Sex – male

Religion – *hindu*

Socioeconomic status - Middle class

1. Chief complaints

Pain in right lower back radiated to right knee since january 2019

Pain radiated from low back to left knee since april 2019

2. History of present illness

A 26 year old male patient was asymptomatic before 2017, suddenly started low back pain on and off after lifting of rucksack of wheat, after 6-7 days pain subside itself and then in 2019 pain again progressively worsening in right lower back radiated to right knee and he was not able to bend forward. A few months later pain radiated from low back to left knee also, then he went to allopathic hospital, where he was advised for MRI of Dorso-Lumbar spine in

27/4/2019 and found with diffuse disc bulge at L5-S1 level with posterocentric and paracentric disc extrusion then he started taking allopathic medicine i.e. Tab gabapin ME 300mg, Tab tryptomer 10mg, Tab methyl prednisolone 40mg for 2 month but did not got relieved in pain so he stopped taking allopathic medicine and approached to Patanjali hospital Haridwar on 27/12/2019 with same complains and took *Ayurvedic* medicine for 1 month and he got mild relief. After that he came again in 2/2/2020 for further management and got admitted in IPD ward.

3. History of past illness

No history

4. Family History

No

5. Treatment History

Tab gabapin ME 300mg
Tab tryptomer 10mg } for 2 month (27/4/2019-1/7/2019)
Tab methyl prednisolone 40mg

6. Examination

Vitals are normal

CVS, RS, P/A examination had show no deformity

Local examination – Tenderness in the right iliac region

- SLR / Lasegue Test - Positive in right leg at 30 degree angle.

When performing the SLR test, lifts the patient's leg by the posterior ankle while keeping the knee in a fully extended position and continues to lift the patient's leg by flexing at the hip then he complains of pain at 30 degree angle in right leg or tightness in the back or back of the leg.

7. Investigation

27/4/2019 MRI of the lumbo-sacral spine - Diffuse disc bulge at L5-S1 level with posterocentric and paracentric disc extrusion.

8. Treatment protocol

Total duration – 38 days

1. 1st day- *Erand tail paan*- 30ml with milk at bed time single dose for mild pugation

2. 2nd day to 8th day –*Bahya* and *abhayantar* treatment administerd simultaneously.

Niruh basti, Anuvasan basti, Kati basti, Sthanic patra panda swedan, Kati upnaah.

Table of therapeutic intervention

Panchakarma

THERAPY	DRUG	DURATION	TIME
1. *ERANDA MULADI YAPANA BASTI* [17]	*Madhu* 70ml *Lavana* 8gm *YAMAK- Ksheerbala tail* 80 ml *Shatavari ghrit* 30ml *KALKA- Erandmool* 10 g *Ashwagandha* 10g *Rasna churna* 5g *Trikatu churna* 5g *KWATH-Bala +Erandmool* 400ML was given in empty stomach	3 days A N A N A N A A	
2. ANUVASAN BASTI	*Maha Narayana tail* 100ML was given after meal	5 days A N A N A N A A Total= 8 days (*Yog Basti*)	
3. KATI BASTI	*Prasarini tail*	8 days	For 30 min
4. STHANIK PATRA PIND SWEDAN	*Arka leaves, Nirgundi leaves, Erand leaves, Sendha namak, Haldi, Jambhiri nimb, Ajwoin*	8 days	For 30 min
5. KATI UPNAAH	*Rasna churna, Erand churna, Bala, Punarnava, Manjishtha, Panchkol, Ashwagandha, Mulethi, Ajwoin, Haldi, Sendha namak*	8 days	For 6 hours

- A – Anuvasana, N- Niruha

Then patient was discharged on ***SAMANA CHIKITSA*** (for 1 month) as follows:

1. *KWATH*	*Nirgundi kwath* 100mg *Paarijaat kwath* 100mg *Maharasnadi kwath* 100mg	Mix both and take 1 tea spoon medicine and boil it in 4 cups of water. Boil till it reduces to1cup. strain and take it twice a day an hour before meal for 30 days
2. *CHURNA*	*Giloy sat* 10 gm *Ekangveer ras* 10gm *Swarn makshik bhasm* 5gm *Praval pishti* 10 gm *Godanti bhasm* 10 gm *Mahavaat vidhvanshak ras* 10 gm *Ashwagandha churna* 100 gm	Mix all and then take 1 tsf twice a day with luke warm water before meal
3. *VATI*	*Triyodashang guggulu* 250mg *Shilajeet Rasayana* 250 mg	2 tab each twice a day with luke warm water after meal

9. Supportive medicine

Aasana (Yoga)

a.) *Bhujang asana*[18] (cobra pose) - It can help to remove backache and keep the spine healthy. By arching the spine, improving circulation in the back region and toning the nerves.

b.) *Shalabhasana*[19] (locust pose) - This asana strengthens the lower back and pelvic organs and tones the sciatic nerves, providing relief from backache.

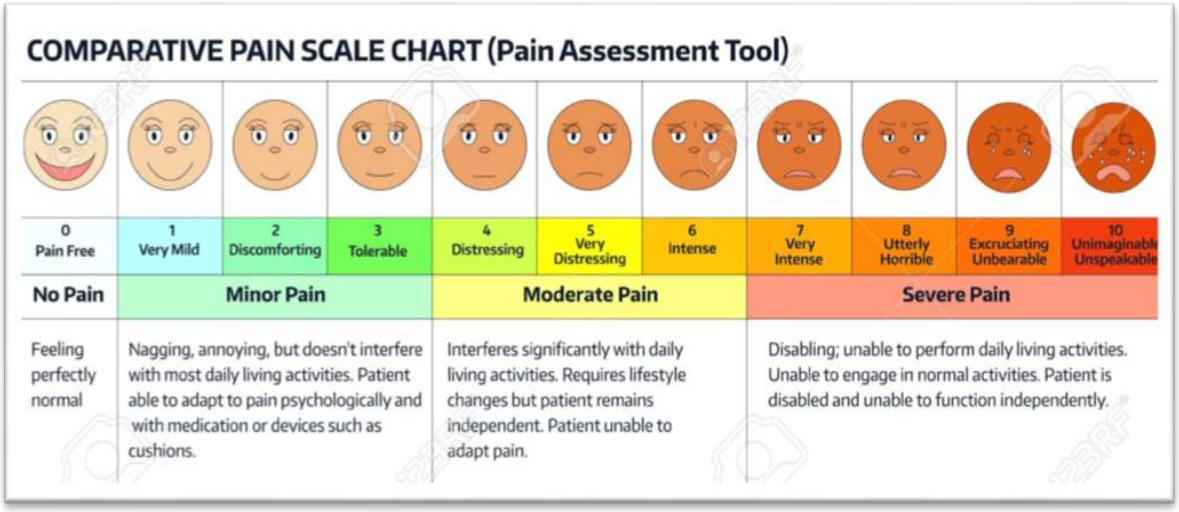
c.) *Makarasana*[20] (Crocodile pose) - It encourages the vertebral column to resume its normal shape and relieves compression of the spinal nerves.

10. Diet plan

- Have sweet and sour taste of food.
- Drink luke warm water, coconut water, cow milk
- Eat *lauki, torai, tinda, parval*, drum stick, green vegitables, garlic, *munakka*
- Eat mango, *amla*, pomegranate, *ber.*

Avoid food- *Baingan, karela, jamun, udaga, chana, moong, matar, rajma* Avoid running, climbing stairs, swimming, fasting

OBSERVATION: 1. Assessment of Pain



Patient visit	Before treatment 27/12/19	After treatment 28/1/20	Medication	Duration of treatment
1) 27/12/19	Pain in low back- 6 Pain in right thigh-6 Pain in left thigh-5 Pain in right knee-6	Pain in low back- 3 Pain in right thigh-3 Pain in left thigh-2 Pain in right knee -3	*Shaman Chikitsa*	1 month
	2/02/20	10/2/20		

2) After 1 month of *shaman chikitsa* he came on 2/2/20	Pain in low back- 3 Pain in right thigh-3 Pain in left thigh-2 Pain in right knee – 3	Pain in low back- 0 Pain in right thigh-0 Pain in left thigh-0 Pain in right knee– 0	*Shodhan Chikitsa*	8 days

2. Assessment of tenderness

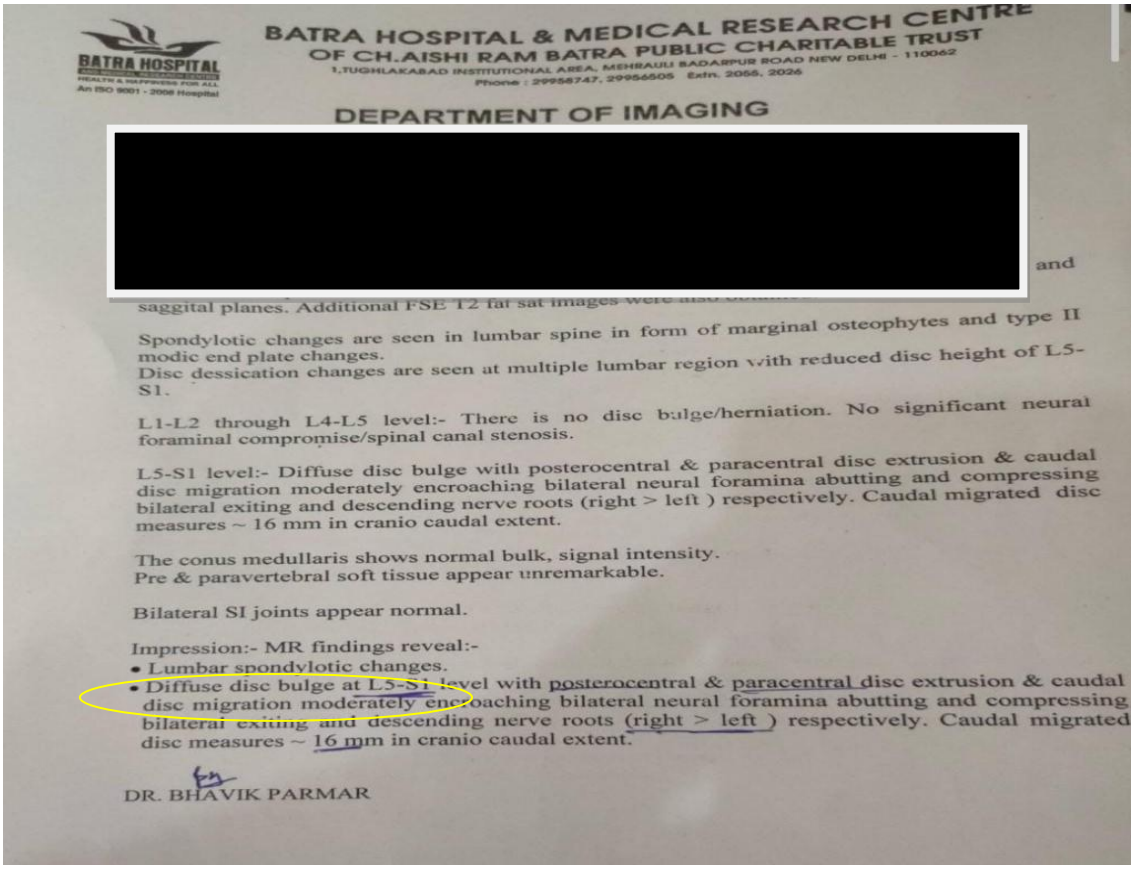
Tenderness	Before treatment(2.02.20)	After treatment(10.2.20)
Right iliac region	Present	Not present

3. SLR Test

SLR test	Before treatment(2.02.20)	After treatment(10.02.20)
In right leg	Positive at 30 degree	Negative

4. The MRI of lumbar sacral region before and after treatment

BEFORE TERATMENT - Diffuse disc bulge at L5-S1



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DEPARTMENT OF IMAGING

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and

saggital planes. Additional FSE T2 fat sat images were also

Spondylotic changes are seen in lumbar spine in form of marginal osteophytes and type II modic end plate changes.
Disc dessication changes are seen at multiple lumbar region with reduced disc height of L5-S1.

L1-L2 through L4-L5 level:- There is no disc bulge/herniation. No significant neural foraminal compromise/spinal canal stenosis.

L5-S1 level:- Diffuse disc bulge with posterocentral & paracentral disc extrusion & caudal disc migration moderately encroaching bilateral neural foramina abutting and compressing bilateral exiting and descending nerve roots (right > left) respectively. Caudal migrated disc measures ~ 16 mm in cranio caudal extent.

The conus medullaris shows normal bulk, signal intensity.
Pre & paravertebral soft tissue appear unremarkable.

Bilateral SI joints appear normal.

Impression:- MR findings reveal:-
- Lumbar spondylotic changes.
- Diffuse disc bulge at L5-S1 level with posterocentral & paracentral disc extrusion & caudal disc migration moderately encroaching bilateral neural foramina abutting and compressing bilateral exiting and descending nerve roots (right > left) respectively. Caudal migrated disc measures ~ 16 mm in cranio caudal extent.

DR. BHAVIK PARMAR

Figure 1

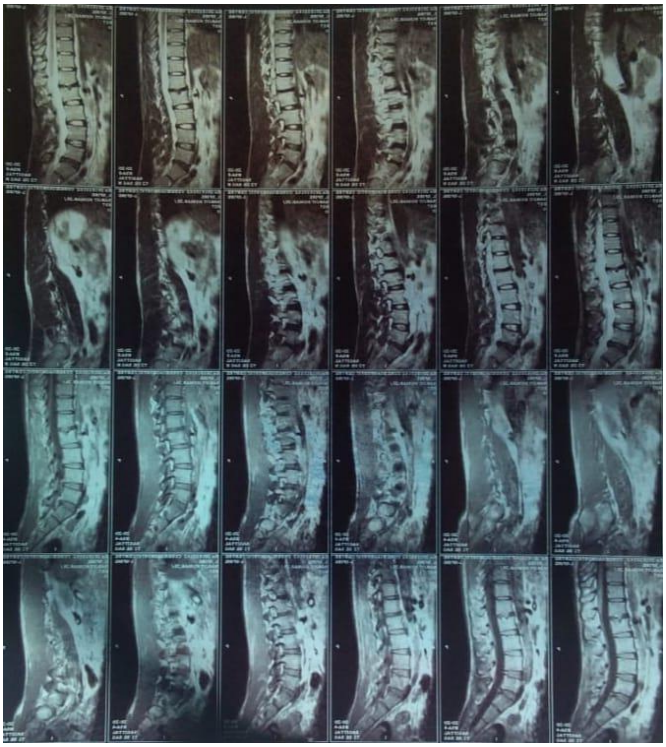
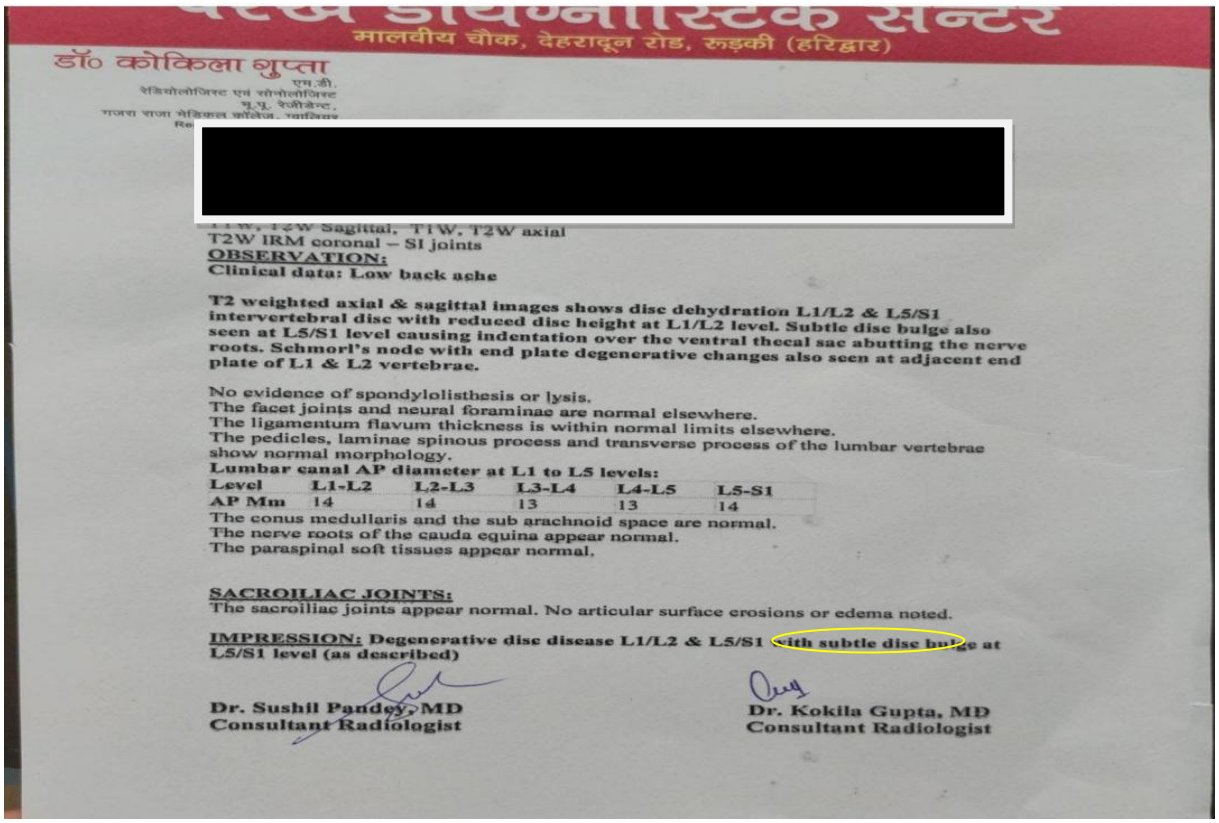


Figure 2

AFTER TREATMENT: Subtle disc bulge at L5-S1 level



मालवीय चौक, देहरादून रोड, रुड़की (हरिद्वार)

डॉ० कोकिला गुप्ता

एम.डी.
रेडियोलोजिस्ट एवं सोनोलोजिस्ट
पू.पू. रेडीओलोजिस्ट,

[redacted]

T2W IRM coronal – SI joints

OBSERVATION:

Clinical data: Low back ache

T2 weighted axial & sagittal images shows disc dehydration L1/L2 & L5/S1 intervertebral disc with reduced disc height at L1/L2 level. Subtle disc bulge also seen at L5/S1 level causing indentation over the ventral thecal sac abutting the nerve roots. Schmorl's node with end plate degenerative changes also seen at adjacent end plate of L1 & L2 vertebrae.

No evidence of spondylolisthesis or lysis.
The facet joints and neural foraminae are normal elsewhere.
The ligamentum flavum thickness is within normal limits elsewhere.
The pedicles, laminae spinous process and transverse process of the lumbar vertebrae show normal morphology.

Lumbar canal AP diameter at L1 to L5 levels:

Level	L1-L2	L2-L3	L3-L4	L4-L5	L5-S1
AP Mm	14	14	13	13	14

The conus medullaris and the sub arachnoid space are normal.
The nerve roots of the cauda equina appear normal.
The paraspinal soft tissues appear normal.

SACROILIAC JOINTS:
The sacroiliac joints appear normal. No articular surface erosions or edema noted.

IMPRESSION: Degenerative disc disease L1/L2 & L5/S1 with subtle disc bulge at L5/S1 level (as described)

Dr. Sushil Pandey, MD
Consultant Radiologist

Dr. Kokila Gupta, MD
Consultant Radiologist

Figure 4

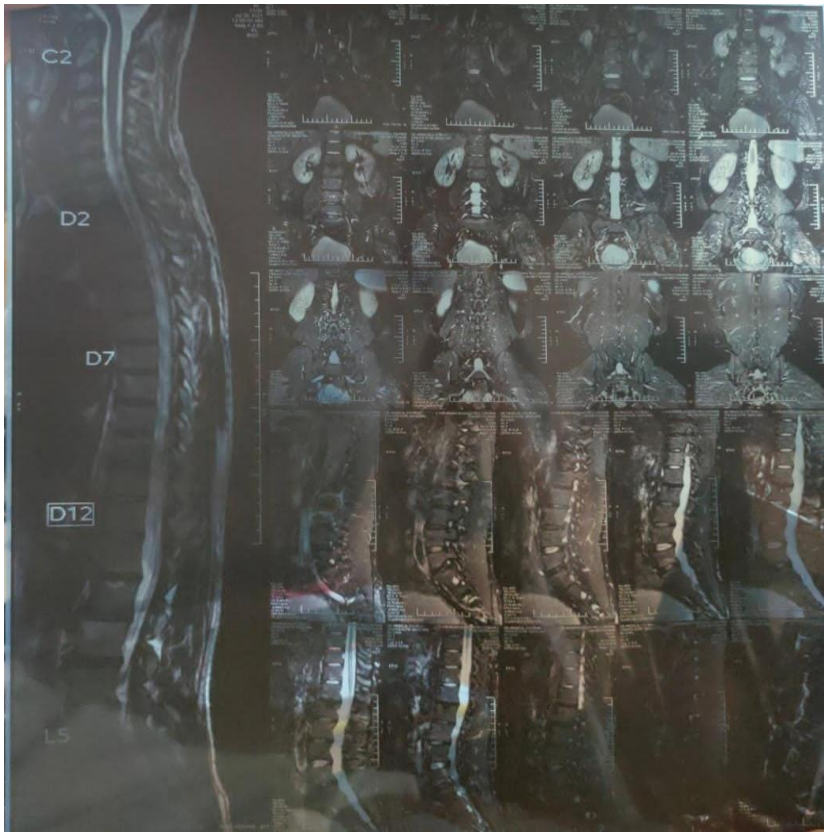


Figure 5

DISCUSSION

According to *Ayurveda*, pain occurs due to vitiation of *vata dosha* and *vata dosha* is vitiated by *srotas awarodata* (obstruction of channel) and *Dhatu kshaya* (depletion of tissue). In this disease, mainly *Apana vayu* vitiation are observed, So for, treatment of *Gridhrasi*, drug of choice should have *Vatashamaka*, *Vatanulomaka*, *Dipana-Pachana* and *Shula-prashamana* properties. Castor oil has *Mridu virechana* (mild purgation) property, thus employed before *Basti* procedure for proper evacuation of bowel and *vatanulomana.*[21] *Erandmooladi yapna basti* is a milder form of *Niruha basti*.[22]

Erandmooladi yapana basti mode of action

- Honey (madhu) has properties of Yogvahi (catalytic) which increase bioavalability.
- Rock salt (*saindhav*) has properties of:

Sukshama(subtle) ⟶ Increase absorption & reaches up to micro channel

Teekshana (penetration) ⟶ Breakdown morbid *mala & doshas* composition

Snigdha (unctuousness) ⟶ Liquefies *doshas*

Ksheerabala Taila is an important *Sneha Kalpana* (oil formulation) mentioned in Ayurveda texts prepared from *Go-Ksheera* (cow milk), *Bala* (Sida cordifolia) and *Tila Taila* (sesame oil). *Go-Ksheera* is *Madhura* in taste, *Snigdha*, *Guru Guna* property, *Sheeta Veerya* and *Madhura Vipaka*. It alleviates *Vata Dosha*.[23] Sida cordifolia contains alkaloids. The main portion of the alkaloid is identified to be ephedrine[24] by virtue of which it possesses psycho-stimulant properties on CNS.[25] *Bala* has the properties of *Vatapitta shamak, Vedanasthapana, Shotahara, Balya, Vatahara, Grahi.*[26] *Tila Taila* is *Madhura Rasa, Balya* and *Rasayana* in *Karma*; it nourishes and strengthens all *Dhatu*, checks *Dhatukshaya* and thus alleviates *Vata*.

Matra Basti given through *Guda* (rectal route) with *Mahanarayana tail* normalizes *Apana Vayu* leading to *Vatanulomana*.

The pharmaco-dynamic property of *Prasarani Taila* in *Kati basti*

It relieves the symptoms of *Sandhishula, Shotha*, by its analgesic *(Vedanaprashaman)* and anti-inflammatory *(Shothahara)* action.

Probable mechanism of action of therapy

Snehan- Local oleation procedure, the *Vitiated Doshas* which are adherent to the *srotasas* (channels) become soft and gets displaced from its places.

Swedan- *Swedana* is *Sandhichestakar* (improvises the movements of joints), *Srotoshud dhikar* (clears up the micro channels), *Agni Deepaka*, *Kaphavatanirodhan* (antagonist of *Kapha*). It decreases *Sthambhan* (stiffness). Heat administration by *Swedana* may produce hypno analgesic effect by diverted stimuli.

Basti - *Basti* is the best treatment for *Vata* as said by *Acharya Charaka* **"*Vastihi Vataharanam*".** *Basti* drug first reaches to the *Pakvashaya* (large intestine). *Pakvashaya* is the chief site of *Vatadosha*. Thus, by its action on the chief site, *Basti* gets control on *Vata* all over the body. *Pakvashaya* is the site of *Purishadharakala*. Commentator *Dalhana* has said *Purishadhara* and *Asthidhara kala* are one and same.[28] According to modern medical science, as per *Basti* concerned, in transrectal route, the rectum has a rich blood and lymph supply and drug can cross the rectal mucosa like other lipid membrane. Thus by entering in general circulation, *Basti* drugs acts on whole the body.

Internal Medicinal drugs

Maharasnadi kwath contains *bala, erandamool, devdaru, vacha, musta, ashwagandha* have *vatashamaka, shoolhara* properties, that are used for reduction of pain, reduction of inflammation.[29] *Ekangveer ras* contains *lauh bhasma, vanga bhasma, tamra bhasma, naag bhasma*, it relieves pain and stimulates inactive or underactive nerves or nervous system. *Triyodashanga Guggulu* is useful in *Snayugatavata, Asthigatavata, Majjagata vata*.[30] Rest has properties like *Vedanasthapana, shothahara, balya, rasayan, deepana, anulo mana* etc. Its pharmacological activities include anti inflammatory, analgesic, anti oxidant, immunostimulant etc. By these properties, this drug is beneficial for the *shaman*. These properties may easily reverse the pathogenesis of *Gridhrasi*. So it is conducted that this treatment regimen completely relieves the both sign and symptoms successfully with greater effectiveness. It is proposed that the therapy may be accepted as a treatment method of lumbar disc herniation

CONCLUSION

On the basis of this case study, it can be concluded that *Erand muladi yapana basti, Anuvasana basti, Kati basti, Sthanic patra pind swedan, Upnaah* along with *Sanshaman* therapy is significantly effective in the management of lumbar disc herniation.

DECLARATION OF PATIENTS CONSENT

It is certified that I have taken appropriate patient consent. In the form the patient has given his consent for clinical information to be reported in the journal. The patient understood that their name and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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