



## Case Study

### **AYURVEDIC MANAGEMENT OF LUMBAR SPONDYLOLISTHESIS (*KATI SHOOLA*) WITH SPECIAL REFERENCE TO *CHINCHA LAVANA SWEDA*- A CASE REPORT**

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#### **ABSTRACT**

Spondylolisthesis is described as a translation of a vertebra with respect to the vertebra below without any modification or notable lesion to the pars interarticularis. Lumbar spondylolisthesis can be considered as various conditions like *Kati shoola*, *Kati Graha*, *Trika Graha*, *Prushta Graha*, *Trika Shoola*, *Prushta Shoola*, *Grudrasi* in Ayurveda. The present article deals with a case of diagnosed Grade 1 lumbar spondylolisthesis of L4 over L5 and got advised for surgery. The Ayurvedic diagnosis of *Kati soola* was made. Management included *Abhyanga*, *Kativasti*, *Kshira vasti*, *Virechana*, *Vaitarana vasti* and *Chincha lavana sweda* along with internal medications. *Chincha lavana sweda* is a very simple and effective *Swedana* procedure to cure pain in low back, especially due to Spondylolisthesis. But it is not widely used. This case report also wants to introduce the technique to Ayurvedic practitioners who are unaware of it. Before treatment, total score on Oswestry low back pain disability questionnaire was 34 (68%) and at the time of discharge, the score was 8 (16%). On Roland-Morris low back pain and disability questionnaire, the before treatment score was 17 and at the time of discharge it was reduced to 4. That means the patient showed an improvement of 76% on Roland-Morris low back pain and disability questionnaire. The present case report substantiates effectiveness of classical Ayurvedic Management in spondylolisthesis.

**KEYWORDS:** Lumbar, Spondylolisthesis, *Kati soola*, Oswestry disability index, Roland-Morris disability questionnaire, Low back pain, *Chincha lavana sweda*.

#### **INTRODUCTION**

Spondylolisthesis is described as a translation of a vertebra with respect to the vertebra below without any modification or notable lesion to the pars interarticularis. [1] Abnormal weight distribution combined with soft tissue laxity and instability over a prolonged period allows for excessive joint play and buckling of the posterior annular fibers of the intervertebral disc (IVD). This includes one or more structural displacements of the spine and posture as rotation or translation away from normal spinal alignment in any of the three anatomical planes accompanied by pain or abnormal neurologic function.

The most common level for degenerative anterolisthesis is L4-L5.[2,3] Females are 5 times more likely to suffer from anterolisthesis than males.[4,5] Low back pain affects approximately 60-85% of adults during some point in their lives and LS is responsible for about 10% of all the back pain conditions.[6] Conventional medicine recommends

surgical techniques like spinal compression, which are not found that much effective in this condition.[7]

Lumbar spondylolisthesis can be considered as various conditions like *Kati Shoola*, *Kati Graha*, *Trika Graha*, *Prushta Graha*, *Trika Shoola*, *Prushta Shoola*, *Grudrasi* in Ayurveda.[6,7,8] The present article deals with a case of diagnosed Grade 1 lumbar spondylolisthesis of L4 over L5 and got advised for surgery. The Ayurvedic diagnosis of *kati soola* was made. Management included *Abhyanga*, *Kativasti*, *Kshira vasti*, *Virechana*, *Vaitarana vasti* and *Chincha lavana sweda* along with internal medications. *Chincha lavana sweda* is a very simple and effective *Swedana* procedure to cure pain in low back, especially due to Spondylolisthesis. But it is not widely used. This case report also wants to introduce the technique to Ayurvedic practitioners who are unaware of it.

Two assessments were taken before and after treatment on Oswestry disability index and Roland-Morris disability questionnaire. Score of the patient

was 34 (68 %) before treatment and 8 (16%) after treatment on Oswestry disability index and 76% improvement was obtained on Roland-Morris disability questionnaire. Written informed consent was obtained from the patient for the publication of this case report.

### Case description

A female patient (house wife), 56 years aged, residing at Nemom, Thiruvananthapuram, India came to Regional Research Institute for Lifestyle Related Disorders (RARILSD), under CCRAS, Ministry of AYUSH on 12.2.2019 with the complaints of low back pain, numbness and aching sensation in low back and both lower limbs. The patient also complained of severe burning sensation in both lower limbs. There was a history of fall by hitting low back 3 years before. Low back ache started after that fall. She neglected it and took no medicines for that. The symptoms developed gradually. Numbness in low back started after 2 years. Symptoms worsened 2 weeks before. Conventional medicine advised surgery. To avoid surgical intervention and for better management, she opted Ayurvedic treatment. Patient has no history of allergy to any drug or food item. No past history of any major medical illness found. No family member had similar problem.

Patient is known diabetic since 2010 and she has been taking Allopathic oral hypoglycaemic drugs. Blood pressure was 140/90 mm of Hg. At the time of examination, patient was able to walk but reported that pain is restricting walking even a short distance. Palpation revealed swelling and tenderness at lumbar region. Range of movements was restricted (flexion, extension, lateral bending, rotation etc) at hip. Straight leg raising test was not performed due to pain. There was numbness, aching sensation and burning sensation in both lower limbs, especially left. Haematological reports: Hb was 10 gm%. Platelet count was  $337 \times 10^3$ . All other factors were normal (Fig. 1).

MRI- Lumbar Spine (Fig. 2, Fig.3)

1. Sacralisation of Lumbar vertebra and grade I anterior listhesis of L4 over L5.

2. Diffuse disc bulge at L4-L5 level causing significant spinal canal and bilateral neural foraminal narrowing and indentation of nerve roots.

### Diagnosis and Assessment

Diagnosis was confirmed as Lumbar spondylolisthesis by the presence of pain, numbness, aching and burning sensation, restricted movements at lumbar region, lower limbs and by MRI lumbar spine scan findings. A criterion of assessment was based on the scoring of Oswestry low back pain disability questionnaire and Roland-Morris low back pain and disability questionnaire. The Oswestry low back pain disability questionnaire also known as 'the Oswestry Disability Index' is an extremely important tool to measure patient's functional disability and it is considered as the 'gold standard' of low back functional outcome tools.<sup>[9]</sup> This is composed of 10 sections (Questions). Each question is rated on 6 point (0-5) scale measuring activities like, personal care, sleep, social life etc; <sup>[10]</sup> The Roland-Morris low back pain and disability questionnaire contains 24 statements and patient should mark the sentences which describes to him on that particular day of measurement.<sup>[11]</sup> Total two assessments were carried out before treatment and at the time of discharge on both of these scales. In Ayurvedic view, the condition was diagnosed as *Kati soola*.

### Management

Management was mainly focused on symptomatic relief; to relieve the pain, numbness, ache and burning sensation at low back region and also to strengthen the supporting tissues around prolapsed disc. Treatment initially started with procedures *Kati vasti* and *Ksheera vasti*, followed by *Chincha lavana swedana* on lumbar area and *Abhyanga* on lower limbs. *Virechana* was done after for one day. It was followed by whole body Pizhichil and *Vaitarana vasti*. (Table1). Mainly *Vatahara* internal medications were prescribed, along with medicines to reduce burning sensation. (Table.2)

**Table 1: Management with Internal Medicines**

Duration	Medicine	Dose	Frequency
12.2.2019 – 6.3.2019	<i>Rasnasaptakam kwatha</i>	60 ml	Twice a day before food
	Tab. <i>Mahayogaraja guggulu</i>	2	Twice a day with <i>kwatha</i>
12.2.2019 – 28.2.2019	<i>Indukantham ghrita</i>	1 tablespoon	At bed time
	Tab. <i>Hinguvachadi</i>	1	Twice a day before food
	Tab. <i>Palsineuron</i>	2	Twice a day after food
1.3.2019 –	Cap. <i>Ksheerabala</i>	2	Twice a day after food

6.3.2019	Tab. <i>Mandoora vatakam</i>	1 With Takra (butter milk)	Twice a day before food
	<i>Vidaryadi ghrita</i>	1 tablespoon	At bed time

**Table 2: Management with Panchakarma Procedures**

Duration	Treatment
13.2.2019- 18.2.2019	<i>Kati vasti</i> (retaining <i>Taila</i> in low back area for a specific time) with <i>Danwantaram kuzhampu</i> and <i>Murivenna</i>
13.2.2019- 18.2.2019	<i>Ksheera vasti</i> (special type of medicated enema with milk) Honey-50 ml <i>Saindhava</i> (rock salt)-15 g <i>Erandamoola</i> decoction- 400 ml <i>Madhuyashtyadi taila</i> - 50 ml Milk- 100 ml
15.3.2019-18.3.2019	<i>Abhyanga</i> (external oleation) on lower limbs with <i>Danwantaram kuzhampu</i> and <i>Murivenna</i>
19.2.2019	<i>Virechana</i> (Purgation) with <i>Sindhuvara eranda taila</i> -30 ml
20.2.2019-26.2.2019	<i>Chincha lavana sweda</i> (a type of fomentation)
20.2.2019-26.2.2019	<i>Vaitarana vaisti</i> (special type of medicated enema)- <i>Saindhava</i> (rock salt)-15 g Jaggery-30g <i>Dhanwantaram taila</i> (Chikkana)- 120 ml <i>Dhanyamla</i> (a specially fermented medicinal preparation)- 240ml <i>Chincha</i> (fruit juice of seedless <i>Tamarindus indicus</i> L.)- 60g
27.2.2019-5.3.2019	<i>Pizhichil</i> (special type of <i>Taila dhara</i> on body)with <i>Karpooradi taila</i> and <i>Prabhanjana vimardana taila</i>

**Chincha Lavana Sweda** [12]

Materials required: *Chincha* (seedless *Tamarindus indicus* fruit pulp)- 100g

*Eranda taila* (Castor oil)- 50ml

*Lavana* (Sea salt)- 100g

It is a type of fomentation technique, found to be more effective in low back ache due to IVDP. The procedure can be easily done with very few materials, which are comparatively cheap too. For this, seedless *Tamarindus indicus* fruit pulp mixed with castor oil is made into thin round shape and is placed on the lumbar area. Sea salt is wrapped in a cloth (preferably threads should be loose) and is made into a small bundle. It is heated and placed over the fruit pulp for half an hour. In this case, patient got very good relief for her complaints even immediately after the starting of this procedure.

**DISCUSSION**

Spondylolisthesis is described as a translation of a vertebra with respect to the vertebra below without any modification or notable lesion to the pars interarticularis. The present article deals with a case of diagnosed Grade 1 lumbar spondylolisthesis of L4 over L5 and got advised for surgery. It can be

considered as various conditions like *Kati Shoola*, *Kati Graha*, *Trika Graha*, *Prushta Graha*, *Trika Shoola*, *Prushta Shoola*, *Grudrasi* in Ayurveda. *Kati shoola* simply means pain in low back area. It is a condition due to deranged *Vata dosha*. Management included vatahara procedures described in Ayurveda like *Abhyanga*, *Kativasti*, *Kshira Vasti*, *Virechana*, *Vaitarana vasti* and *Chincha lavana sweda* along with internal medications. The patient reported immediate relief for most of the complaints after the start of *Chincha lavana sweda*. It is a very simple and effective *Swedana* procedure to cure pain in low back, especially due to Spondylolisthesis. But it is not widely used. This case report also wants to introduce the technique to Ayurvedic practitioners who are unaware of it.

As per Ayurveda, *Shoola* (pain) occurs due to vitiation of *Vata Dosha*. *Vata Dosha* is vitiated by *Srotorodha* (obstructions of channels) and *Dhathu Kshaya* (depletion of tissues). In *Kati Shoola*, *Apana Vata* (*Vata* located in the low back region) is mainly involved. So, the aim of the treatment is to pacify vitiated *Vata Dosha*, especially *Apana Vata*. [13]

*Panchakarma* interventions started with Kati vasti for 6 days. *Kati vasti* is a procedure which helps to decrease low back ache, alleviates numbness due to nerve compression and strengthens back muscles which maintain normal curvature of the spine the bone tissues. *Abhyanga* in lower limbs was for reducing the numbness and aching sensation in lower limbs. *Ksheera vasti* was also done on the same day. *Kati vasti* worked also as a pre-operative Swedana procedure prior to *Ksheera vasti*. *Taila* used was *Madhuyashtyadi taila*. As prepared with milk, *Ksheera vasti* is *Pittahara* (alleviate *Pitta dosha*) also. As the patient was suffering badly from burning sensation in lower limbs, *Ksheera vasti* was done. Moreover, *Madhuyashtyadi taila* also controls *Vata* and *Pitta* very effectively.

After that *Virechana* was done with *Sindhuvara Eranda taila*, which is very useful in normalising *Tridoshas*. *Virechana* was followed by *Chincha lavana sweda* and *Vaitarana vasti* for 7 days. Sour taste of *Tamarindus indicus* L. and salt taste are basically *Vatahara* (alleviating *Vata*). *Swedana* includes various fomentation techniques described in Ayurveda. *Swedana* alleviates mainly *Vata dosha*, depending on the substances used. *Chincha* (*Tamarindus indicus* L.) is mentioned as *Vatahara* in Bhavaprakasha,<sup>[14]</sup> possibly the cause for reducing the ache, pain and numbness. Anti inflammatory activity of *Tamarindus indicus* is also scientifically proved.<sup>[15]</sup> Properties of *Lavana* (salt) described in Ayurveda include *Srotoshodhana* (clearing the obstruction of channels of our body) and *Vatahara* (decrease *Vata dosha*). *Srotoshodhana* is required to clear the channels of our body.<sup>[16]</sup>

*Vaitarana vasti* is another *Vatahara* procedure, found very effective in the management of low back ache. All the external *Panchakarma* procedures like *Abhyanga*, strengthen and relaxes the supporting structures like muscles, tendons, ligaments around the vertebra. Relaxation of surrounding muscles decrease the nerve compression, thus reducing the symptoms like numbness and burning sensation due to nerve root indentation caused by the prolapsed disc. Relaxation of muscle from spasm gives the patient relief from aching sensation.

*Rasnasaptakam kwatha* is indicated in *Dhatugata vata* (*Vata* vitiated in tissue level), Tab. *Mahayogarajaguggulu* and *Indukantham ghrita* are *Vatahara*. Ingredients of decoctions of *Rasnasaptakam kwatha* include *Rasna* (*Alpinia galangal* L.), *Gokshura* (*Tribulus terrestris* L.), *Eranda* (*Ricinus communis* L.), *Devadaru* (*Cedrus deodara* (Roxb. ex D.Don) G.Don), *Punarnava* (*Nyctanthes arbortristis* L.), *Guduchi* (*Tinospora cordifolia* L.),

*Aragwadha* (*Cassia fistula* L.), pills of *Mahayogaraja guggulu*, major ingredient being *Guggulu* (*Commiphora mukul.* L.) and *Indukantham ghrita*, which includes *Dashamoola* (roots of 10 specific medicinal plants), *Devadaru* have the properties of *Vata Shamaka* (pacify the vitiated *Vata Dosha*), *Vedana Sthapana* (sedative), and *Shoola Prashamana* (analgesic), *Tarpana* (enhance the nutrition), *Balya* (promote strength), *Rasayana* (rejuvenation), and *Srotha Shodana* (purifying channels). As the drugs used in the present study have the above properties, they are beneficial for diseases originating by vitiation of *Vata Dosha*. These drugs also have the properties of *Tarpana* (enhancing nutrition), *Balya* (promoting strength), and *Rasayana* (rejuvenation), and help in improving the qualities of *Asthi Dhatu* (bones) and reformation of wasting tissues. Anti inflammatory and analgesic properties of these drugs are scientifically proved. *Vidaryadi ghrita* and *Ksheerabala* capsule are *Vatapittahara*, to reduce the *Pittaja* (originated by *Pitta dosha*) burning sensation. *Hinguvachadi* tablet was given to increase the Agni factor, as *Agnimandya* is considered as the basic cause of all diseases in Ayurveda. Moreover the patient had burning sensation in chest also. *Mandoora vataka* was given because the Hb level of patient was low.

At the time of discharge patient was happy as she was able to walk, stand and do her regular activities without pain. At the time of discharge (6.3.2019), medicines for promoting the strength of bone and nerves were given which included *Ashtavargam kwatha*, Tab. *Trayodashanga guggulu*, *Lohasava* mixed with *Balarishta*, *Gandha taila* capsule. She was doing *Chincha lavana sweda* daily even after discharge. During follow up on 23. 03. 2019, patient reported good relief in all complaints.

Before treatment, total score on Oswestry low back pain disability questionnaire was 34 (68%) and at the time of discharge, the score was 8 (16%). On Roland-Morris low back pain and disability questionnaire, the before treatment score was 17 and at the time of discharge it was reduced to 4. That means the patient showed an improvement of 76 % on Roland-Morris low back pain and disability questionnaire.

The present case report substantiates effectiveness of classical Ayurvedic Management in spondylolisthesis. It is better to advise to take periodic *Panchakarma* interventions to prevent further progress of the condition because If left untreated, patient may eventually experience weakness and leg paralysis if nerves have been damaged. Infection of the spine may also occur in rare cases. However, randomized controlled trials

with large sample size are required to substantiate the present findings.

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