

MANAGEMENT OF A CASE OF LUMBAR STENOSIS WITH AYURVEDIC INTERVENTION

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ABSTRACT

Ayurveda intervention is gaining popularity for chronic and degenerative disorders. Lumbar stenosis is narrowing of spaces of lumbar spine cause morbidity in old age. Surgical laminectomy is the only answer in conventional therapy. However, the disease can be better managed in Ayurveda through panchakarma and rasayana treatment.

Keywords: Low back pain, Lumbar stenosis, Panchakarma, Katigraha.

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INTRODUCTION

Lumbar stenosis is the narrowing of spaces in the spine, which causes pressure on the spinal cord and nerve roots; cause pain along the back of the leg. The potential causes of the disease are aging, trauma, arthritis of spine, spondylolisthesis, regional tumor, and rarely due to the congenital origin. Pain, compression symptoms, and difficulty in walking are the usual symptoms of the disease. It is diagnosed from history, physical examination, and imaging studies. It is managed with physiotherapy, non-steroidal anti-inflammatory drug (NSAID) medications, and surgical laminectomy in the conventional system of medicine [1,2]. In Ayurveda, from the nature of the disease, it has clinical resemblance with Katigraha and Gridhrasi. Katigraha and Gridhrasi both mentioned in ayurvedic classics under *Nanatmaja Vatavyadhi*. Katigraha is very symbolic for restricted movement of the pelvic girdle. As kati (lumbar spine) one of the major seats for vata dosa, the vata dosa gets vitiated at its own seat. Gridhrasi is a form of the pain of lumbosacral origin (sciatica) usually radiates to knee or up to foot depending on the site of nerve root involvement. It is found in 5-10% of patients with low back ache. The cardinal features include ruk (pain), toda (pin and needle sensation), stambha (stiffness), muhuspandana (twitching and cramping) in the sphik (buttock), kati (waist), uru (thigh), janu (knee), jangha (calves), and pada (foot) [3-5]. The ayurvedic treatment consists of both the conditions are snehana (oleation therapy), swedana (sudation therapy), vasti (medicated retention enema), agnikarma (therapeutic cautery), and vatahara shaman yogas (palliative care) [6,7]. Clinical studies with ayurvedic formulation and panchakarma therapy are done by many scholars. Evidence on the evaluation of the ayurvedic intervention in lumbar stenosis has not been documented; hence, the communication is endorses a step towards the validation of use of the ayurvedic intervention.

CASE REPORT

Presenting concern

A 70-year-old man of Kolkata metropolitan area presented with history of low back and left leg pain for 5 years admitted to the hospital (OPD Regn. No. 6508/15-16 and IPD Regn. 162) of National Research Institute of Ayurveda for Drug Development, Kolkata. Feels fatigue while trying to lift something and have numbness of left foot. No complaint of radiating pain in lower limb. The pain increases on bending, standing, and walking. Activities of daily living are limited. No h/o of significant bowel and bladder disturbances. No h/s/o neuro deficit.

He had H/o trauma, in 1967, and underwent decompressive lumbar surgery (lumbar laminectomy) in 1997 - did well-good relief of leg symptoms - now having progressive back pain and some deformity.

Not known diabetic. Known hypertension since 1992 and regularly on antihypertensive agent. Diagnosed hypothyroidism in 2003 and on thyroxine supplement. No addiction, sleep disturbed, and using sleeping pill on regular basis. Bowel-irregular, appetite-normal, bladder-normal, good socioeconomic status, family history not suggestive.

Treatment h/o consists hot compression, using L/S brace, avoid floor sitting, rest, calcium and vitamin D3, vitamin B12 and E supplement, physiotherapy, but the pain has not improved much. He was advised decompression with or without fixation.

General examination and assessment through ayurvedic parameters

Pulse - 64/minutes, regular, blood pressure - 140/70 mmHg, height - 170 cm, weight - 69 kg, urine (*Mutra*) - usual, stool (*Mala*) - hard (*Badhha*), *Jivha* - moist, sound (*Shabda*): Usual, *Sparsa (Touch)*: Tender on painful areas, eye (*Netra*) - usual, stature (*Akriti*): Normal, skin (*Tvak*) - snigdha, nail (*Nakha*) - no abnormality seen.

Prakriti: Sharirik - Vatapaittik, Manshik - Rajashik, homologous (*Satmya*) - Madhyama, compactness (*Samhanana*) - Madhyama, digestion (*Aharashakti*) - Madhyama, exercise (*Vyayama Shakti*) - Avara, age (*Vaya*) - Vridhha, locality (*Desha*) - Anupa, period (Kala) - Chirakari, bowel (koshtha) - krura. Dosa - vata, dushya - asthi, majja, place of origin (*Adhithana*) - kati and Trika Sandhi, Srotas - Asthivaha, Srotodusti - Sanga.

Local examination

No swelling/scar/sinus, scoliosis±, no gross neurodeficit, lumbar kyphosis with flat back, scoliotic deformity of the lumbar spine with convexity to right, diffuse tenderness of lower lumbar spine, limitation and painful range of movement (ROM) of lumbar spine, B/L straight leg raise (SLR)-positive, No distal neurological deficits, gait-painful.

Laboratory investigation

BMD-T score - 0.5, Z score - 1.2, human leukocyte antigen B27 - negative, thyroid-stimulating hormone - 0.352, FT4 - 1.6, fasting plasma glucose - 105, serum creatinine - 0.9 mg/dl, total cholesterol - 147 mg/dl, triglyceride - 75 mg/dl, high-density lipoprotein cholesterol - 54 mg/dl, low-density lipoprotein cholesterol - 82 mg/dl, fasting blood sugar - 108 mg/dl, hemoglobin (Hb) A1C - 5.2%.

Magnetic resonance imaging LS spine (2011)-L2-L3, L3-4, L4-5 level secondary canal stenosis causing compression on the thecal sac, lateral recesses, and the traversing L3 and L5 nerve roots, being most marked on left L5 root.

X-ray dorsal spine-gross scoliosis of the dorsolumbar spine with spondylosis.

X-ray LS spine AP/lat view (2011)-showing evidence of L5 laminectomy with posterior lumbar fusion. Degenerative changes present with lumbar kyphosis. Mild L4/5 and L5/S1 compression. Gross scoliosis of dorsolumbar and spodylosis with convexity to right. Sacroiliac joint normal.

Assessment criteria

The patient was assessed on the basis of grading of chronic low back pain [8,9] and local examination of spine; on the day of admission to the IPD, on the day of discharge from the IPD, and on the day of subsequent follow-up after 1 month.

Case conception and treatment selection

On the basis of presenting history, physical examination, and ancillary investigation, the case was diagnosed as lumbar stenosis. Trauma and age are the etiological factors responsible for the genesis of the disease.

Vata is the prime dosa gets aggravated due to both, causing degenerative changes and compression symptoms. Vata primarily aggravated at its own site, i.e., Trika and Kati pradesha. To pacify the vata dosa snehana (Abhyanga and Kativasti), swedana (patrapindasweda) given to the patient and palliative care including rasayana oushadhi choosen as preventive measures.

Treatment plan

The following treatments were administered to the case consecutively.

1. Amapachana and Agnisambardhana: It was done with Chitrakadi Gutika 500 mg b.i.d. after food for 7 days with lukewarm water
2. *Sarvang Abhyanga* and *Patarpindasweda*: Abhyanga done throughout the body approximately for 30 minutes with *Balaswagandhadi Taila*. After *Abhyanga*, the patient was subjected to *Patarpindaswedana* for approximately 10 minutes. The whole procedure was repeated for 7 days
3. Kativasti with Ksheerabala Taila 30 minutes/day for 7 days
4. Virechana-Gandharvahastadi Eranda Taila 30 ml start in the morning for 1 day

Table 1: Intensity of pain

Serial number	Feature of pain of the case	2.12.2015 (grade)	6.1.2015 (grade)	Follow-up on 5.2.2016 (1 st)
1	Pain on thigh muscles while walking or when standing up from sitting position	3	0	0
2	Feeling pain while walking slowly in the upper region of the groin and near pelvic area	2	0	0
3	Feeling pain while turning the body on the left side	1	0	0
4	Feeling pain when moving the waist either side while lying on bed	3	0	0
5	Feeling pain while bending the head at the time of washing the mouth, etc., and on backside	3	1	0
6	Pain while wearing belt on the left side	2	0	0

Grading of chronic (LBP) pain: Von Korff Metal, pain, August 1992. Grade 0-No pain and no disability. Grade 1-Low disability-low intensity. Grade 2-Presence of pain/low disability-high intensity. Grade 3-Moderate pain/high disability-moderately limiting. Grade 4-Severe pain/high disability-severely limiting

Table 2: Spinal/local examination

Serial number	02.12.2015 (Grade)	06.01.2015 (Grade)	Follow-up on 05.02.2016 (1 st)
Inspection	Not able to put leg on floor (painful gait), posture-comfort on sleeping, discomfort with standing and walking, presence of lumbar scoliosis disappeared on sitting, flat lumbar region, presence of longitudinal scarring of previous spinal surgery, axial loading-absent	Gait-normal posture-ambulatory lumbar scoliosis+with flat lumbar region	Gait-absolutely normal posture-ambulatory lumbar scoliosis+with flat lumbar region
Palpation	No localized tenderness, tenderness on L4-L5 area on leaning forward	No localized tenderness	No localized tenderness
Percussion	No tenderness on percussion	No tenderness on percussion	No tenderness on percussion
Movement	Restriction of flexion of LS spine (3 cm) Schober's test-3 cm at LS joint Extension of spine limited to 25° Rotation of Lumbar joint range from 3° to 5° thoracic movement within normal limit	Restriction of flexion of LS spine (5 cm) Schober's test-5 cm at LS joint Extension of spine range from 25° to 35°, rotation of lumbar joint range from 3° to 5°	Restriction of flexion of LS spine (6.5 cm) Schober's test-6 cm at LS joint Extension of spine range from 25° to 35°, Rotation of Lumbar joint range from 3° to 5°
Special tests			
SLR	Right leg (30°) Left leg (15°)	Right leg (75°) Left leg (75°)	Right leg (90°) Left leg (80°)
Bowstring test	Negative	Negative	Negative
Lasegue's sign	Right leg (+) Left leg (++)	Right leg (-) Left leg (-)	Right leg (-) Left leg (-)
FNS test	Negative	Negative	Negative
Neurological	Numbness/hypoesthesia on dorsolateral area (left foot)	No such sign witnessed	No such sign witnessed
Others	Features of degenerative changes of both knee	Pain improved	Pain much improved

FNS: Femoral nerve stretch, SLR: Straight leg raise

5. Vatashamaka and Rsayana Oushadhi Sevana (Rasnadi Guggulu 1 g tds, Trayodashang Guggulu 1 g tds, Maharasndi Kwatham 15 ml bid ac, Sahacharadi Kshayam - 15 ml bid ac, Vishatinduka Vati - 125 mg tds, Triphala Churna 6 g at hs sos, and Aswagandhadi Lehyam 10 g bid) for 1 month.

Self-care

Avoiding bending forward and lifting heavy weights, to do core back strengthening exercises, light work for another 6 months.

Discharge summary and Follow-up

PR-80/minutes, no pallor, gait-normal, spine examination: No list/deformity, no swelling/scar/sinus, no tenderness, ROM-pain free and full, B/L SLR-negative, no distal neurological deficits, Hb%-13.6, platelet count-161,000/cumm, PT-10.7 seconds, activated partial thromboplastin time-36.4 seconds, liver function test: Within normal limit, serum creatinine-0.97, random plasma glucose-118 mg/dl, HIV-negative, hepatitis B surface antigen-negative, hepatitis C virus-negative. No significant changes in X-ray of dorsal and LS spine. The patient was followed up on each day of therapy for improvement as well as for any adverse effect and assessed only on the day of discharge and after 1 month. No adverse effect was reported by the patient nor assessed during treatment. Changes in intensity of pain and changes in the examination of the spine were documented (Tables 1 and 2).

DISCUSSION

Lumbar stenosis is not uncommon disease affects usually after the age of 50 and causes gross morbid changes in the locomotor system. In younger subject, genetic factors are the reason. In the case in discussion, *dhatukshaya* due to *Jara* (aging) and trauma are the responsible etiological factors. *Atichinta* (stress) is also the pathognomonic factor in the genesis of the disease. All the causes vitiated the vata dosa and leading to *kshayajanya* (degenerative) and *sankocha* (compression) related symptoms. Untreated case of lumbar stenosis can cause morbid conditions, paralysis, and incontinence. In routine practice, activity modification, spinal exercises, and NSAIDs are usually prescribed, and lumbar laminectomy is the last option as surgical treatment of the disease. In Ayurveda, vata vyadhi is treated by *sodhana* (*snehana*, *swedana*, *vasti*), *shamana* (drugs possess *Madhura-amla-lavan-snigdha* properties), and *nidana parivarjana* (avoidance of etiological factors).

Abhyanga mentioned under external (*snehana*) oleation therapy, directly acts on muscles and makes them strong. The root of *Mamsavaha Srotas* is *Snayu* (ligaments), *Tvacha* (skin), and *Raktavahini* (blood vessels). So here, *Abhyanga* is done over *Tvacha* and *Snayu*, and also it involves *Raktavahini*. Direct benefit is achieved at *Mamsavaha Srotas*. *Abhyanga* nourishes deeper *Dhatu*s also. Here, one thing we can say that *Abhyanga* makes the muscles strong and thus keep the joints stable [7,10].

Swedana is *Sandhichestakar* (improvises the movements of joints), *srotoshuddhikar* (clears up the micro channels), *Agni Deepaka*, and *Kaphavatanirodhan* (antagonist of *Kapha*). It decreases *Stambha* (stiffness). Heat administration by *Swedana* may produce hypno analgesic effect by diverted stimuli. In *sandhigatavata*, *sanga* type of *srotodushti* is present *swedana*, by doing *srotoshuddhi*, this *sanga* is relieved [11].

Kativasti involves retention of warm medicated oil over the affected part of spine for certain period. It alleviates pain, numbness, strengthens the back muscles, maintains the curvature of spine, reduces stiffness, and increases blood circulation of the region. It also nourishes the muscle and nerve [6].

All the therapy used in the case aimed at reducing the pain, stiffness, improvement of muscle power, strengthening of spinal muscles, and correction of spinal curvature.

Indigenous compound drug used it has properties such as *vedanasthapana* (analgesic), *shothahara* (anti-inflammatory), *balya*, *rasayan*, *sandhaniya*, *deepana*, and *anulomana*. Its pharmacological activities include anti-inflammatory, analgesic, antioxidant, and immune-stimulant. By these properties, this drug is beneficial for the *shaman* of *sandhigatavata* [12]. The limitation of the study is that post-treatment imaging of LS spine could not be done as no significant changes in radiology of LS spine is observed.

RECOMMENDATION

The current study is about the presentation of the single case only. Moreover, a well-structured, standardized, randomized, clinical trial is recommended.

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