

## Add on Effect of *Smriti* Meditation in Neck Pain Associated with Psychological Distress: A Case Report

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### ABSTRACT:

Neck pain is the most prevalent musculoskeletal condition resulting from physical and psychosocial factors. Studies point those psychological conditions including anxiety, distress and depression results in musculoskeletal disorders. Addressing psychological distress with medical management and psychotherapeutic techniques aids stress coping healthily. Ayurveda explains psychological factors as causative for all painful conditions including neck pain. *Sodbana, samana* along with *satvavajaya* to be adopted in its management. *Satvavajaya* alleviates this condition by restraining mind from erroneous objects of focus. *Smriti* meditation is a guided interactive technique developed based on *Satvavajaya*. Recognition of the actual contributing factors serves as a partial solution and contributes to overall healing process. It serves as valuable tool in formulating and focusing on a proper goal, expanding awareness of goal, sustaining awareness on the object of meditation and addressing emotional obstacles and replicates all thoughts and emotions. The case report narrates adjuvant role of *smriti* meditation in psychosomatic neck pain. Patient underwent three sessions of *Smriti* meditation, each lasting 45 minutes and conducted weekly, combined with internal medicines, resulting in satisfactory relief from symptoms. Significant improvements were observed in both the Hamilton Anxiety and Depression scales following the intervention. Neck pain was evaluated using the Copenhagen Neck Functional Disability scale, showing improvement only after the psychotherapeutic intervention, highlighting the impact of *Smriti* meditation. Pain significantly decreased two weeks post discharge, and there was notable improvement in the strength of the right upper limb. Additionally, the patient could limit the perception of stress, contributing to a healthier lifestyle.

**KEYWORDS:** Neck pain, Psychosomatic disorders, Psychotherapy, *Satvavajaya*, *Smriti* meditation.

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## INTRODUCTION:

The Global Burden of Disease (GBD) study of 2017 ranked musculoskeletal disorders (MSDs) as the second-largest cause of disability worldwide.<sup>[1]</sup> One of the most prevalent musculoskeletal conditions is neck pain, a significant social and economic burden on affected people, their families, and communities.<sup>[2]</sup> Psychological conditions including anxiety, high level of distress, and depression, can result in MSDs.<sup>[3]</sup> Psychosomatic disorders can result from the interaction of the individual with any of the three spheres of health - biological, psychological and social including an emotional discomfort caused by situations in which individuals find themselves.<sup>[4]</sup> Addressing the psychological distress along with conventional medical management is crucial in such cases. The mechanism behind is that the neural pathways and circuits can in fact change with mental exercises such as meditation by providing neurogenesis and synaptogenesis.<sup>[5]</sup> There is a scope for Psychotherapeutic techniques which can be used as the complementary therapeutic strategies for neck pain and physical disability specially to avoid long term use of medicines which has an impact in the onset of pain or perception of pain.<sup>[6]</sup> Ayurveda identified emotions as primary disease.<sup>[7]</sup> In Ayurveda, diseases affecting mind are managed along with *Satvavajaya chikitsa* which is the psychotherapy, described in Ayurvedic literature. Sometimes the psychic and somatic diseases get mutually associated and manifested.<sup>[8]</sup> The very understanding of the 5 components of *satvavajaya chikitsa* – *Dhairya* (will power), *Jnana* (self-knowledge), *Samadhi* (dissolution of emotions), *Smriti* (recalling), and *Vijnana* (textual-knowledge) will give an insight of the psychotherapy tools prescribed in

Ayurveda which can also be adopted along with drug therapy in diseases affecting mind.<sup>[9]</sup>

## PATIENT INFORMATION:

A 30-year-old married female hailing from Malappuram, belonging to lower-socioeconomic class family, who was a graduate but a homemaker with no known comorbidities presented with neck pain radiating to right upper limb associated with weakness since 1 year and low back ache radiating to left lower limb since 1 ½ years. She has developed LBA after a h/o lifting of weight before 1 ½ years. The detailed medical history revealed that, 1 year back gradually she developed pain over right upper limb for which she tried allopathic medication for 1 month, but no relief obtained. The pain later developed over neck region also, along with weakness of the right upper limb. She underwent physiotherapy which reduced the low back ache but symptoms of neck pain didn't subside and was suggested to use cervical collar, by which also didn't get enough relief. Pain over neck aggravates during daily activities and daily household works which compromised the quality of life of the patient. She described the character of the pain in her neck and upper limb as deep with aching in nature. There were no relevant family history and childhood history.

## CLINICAL FINDINGS:

On general examination, pulse rate was 71/min, blood pressure was 116/78 mm Hg, and respiratory rate was 17/min. The weight was 69.23kg, and the height was 164 cm with BMI as 25.7 kg/m<sup>2</sup>. On assessment of personal history, it was identified that she was having reduced appetite and satisfactory

bowel, but had a h/o frequent urinary tract infection. Her sleep was disturbed both in initiation and maintenance due to pain as there was difficulty to maintain same posture for long time. Findings of systemic examination are given in Table 1. The details of mental status examination are provided in Table 2. Timeline of course of illness are depicted in Table 3.

### DIAGNOSTIC ASSESSMENT:

MRI of Cervical spine with screening of whole spine (22/2/24) showed L5 –S1 level disc desiccation with mild posterior disc bulge causing mild attenuation of the anterior thecal sac. Mild facet arthropathy noted over L5-S1 level. But cervico - dorsal spine was within normal limits. By assessing the symptoms provisional diagnosis was *Viswachi (Dakshina)* and *Gridhrasi (Vama)*.

The symptoms of neck pain were assessed with CNFDS (Copenhagen Neck Functional Disability Scale), psychological assessments were done with PSS (Perceived Stress Scale), HAM A (Hamilton Anxiety rating scale), and HAM D (Hamilton Depression rating scale). The symptoms showed by the patient coincided with the features of sciatica, and the features of neck pain included under the criteria of Somatic symptom disorder, with Predominant pain, Persistent and Moderate severity mentioned in the Diagnostic and Statistical Manual of Mental Diseases (DSM5), i.e., Somatic symptoms that are distressing or result in significant disruption of daily life with disproportionate and persistent thoughts about the seriousness of symptoms along with persistently high level of anxiety for more than 6 months.<sup>[10]</sup> The symptoms were suggestive of Ayurvedic diagnosis of *Gridhrasi (Vama)* and *Chithodvega*.

### THERAPEUTIC INTERVENTIONS

Internal medicines along with *Sveda* and *Nasya* procedures were given for 21 days. 2 weeks after admission internal medicines revised according to the symptoms [Table 4,5 and 6]. As there was evidence of stress factor from psychological interrogations *Smriti* meditation was planned along with ongoing medicines; 1<sup>st</sup> session was done on 20<sup>th</sup> day of admission and then 2 sessions with a gap of 1 week.

#### *Smriti* meditation as intervention

Initially the subject was made to sit in a comfortable position and made them relax for an open talk. Then discussed the problem and set a goal for meditation. Then the goal was restated again by themselves. Up to this can consider as *Jnana- Vijnana* process. *Jnana* can be elaborated into 5 domains – where we can assess *vidya*, *sidhi mathi*, *medha* and *prajna*.

Then reassured the subject by helping them to find out the better coping strategies (processes of *Dhairya*). Later Instructions had given to relax the patient. Verbal guidance and leading techniques were used to bring them into a deeper layer of consciousness with appropriate intervention. This is the hardwood part of *smriti* meditation. In this, the subject was asked to observe sensory and internally oriented experiences. The final step *samadhi* is helping them to experience their perceived emotions and ventilate the unexpressed emotions.

### ASSESSMENTS

Immediately after admission to know the severity of pain, Copenhagen Neck Functional Disability Scale (CNFDS) was assessed. Later Psychological assessment tools were also included in assessment; on 22<sup>nd</sup> day along with CNFDS, Hamilton

Anxiety rating scale (Ham A), Hamilton Depression rating scale (Ham D) and Perceived Stress Scale (PSS) assessments were done. Also, assessments were done after 3 sessions of *smriti* meditation and 2 weeks after *smriti* meditation observations are given below [Table 7, Graph 1]. Changes also observed in MSE in the domains of speech, thought, mood and affect. Intensity and speed of speech became normal, thought content about preoccupation of health reduced, anxious mood changed to euthymic where the affect became happy.

#### OUTCOME:

The patient reported considerable relief from pain after 2 weeks of discharge with internal medicines. Improvement was noted on strength of right upper limb - after two weeks of discharge. She also expressed ability to control anger and face familial situations. She was able to limit the perception of stress to maintain healthy living. A graph illustrating the observations on interventions depicted below [Graph 2]. Format for assessment of *Smriti* meditation process is depicted in Fig 1.

**Table- 1: Systemic examinations:**

Examination of Spine	
<b>Gait</b>	Normal
<b>Inspection</b>	No scoliosis, normal curvature, no skin changes and no swelling over upper and lower back
<b>Palpation</b>	G1 tenderness over C4-C7, L4-S1, Paraspinal muscle tenderness over C4-C7
<b>Range of motion</b>	Cervical vertebrae- Flexion, Extension, Lateral bending and Neck rotation possible with pain Lumbar vertebrae - Flexion, Extension, Lateral flexion are possible with pain
<b>Tests</b>	Spurling test – Positive on right side, SLR – at 40° positive on left lower limb, Regards test positive on left lower limb
<b>Muscle tone</b>	Normotonic bilateral limbs
<b>Muscle power</b>	Right upper limb – 4/5
<b>Muscle bulk</b>	Within normal limits- bilateral upper limbs & lower limbs
<b>Reflexes</b>	Biceps –Triceps- Supinator – Knee- Ankle – Plantar – within normal limits bilaterally
<b>Sensory examination</b>	No impairment in pain, touch, temperature and vibration

**Table 2: Mental status examination:**

<b>General description</b>	<b>19/7/24</b>
General appearance & Behavior	Lean built, Congruent to setting, Rapport established with ease
Speech	Intensity & speed – Slow, Reaction time – Normal, Pitch & Volume – Low
Thought	Form – Continuous, Content - Preoccupation with health

Perceptions	No Hallucinations
Mood	Anxious
Affect	Anxious, Variability- Normal, Lability – Not present, Appropriateness – Congruent to settings
Cognitive function	Orientation/ Attention/ Concentration/ Memory – Intact
Intelligence	Intact
Judgement	Intact
Insight	Grade 6
Impulsivity	Absent

**Table 3: Timeline of course of illness**

January 2023	Started symptoms of LBA.
July 2023	Started neck pain and radiated to right upper limb associated with weakness
July 2023	Started allopathic medication along with physiotherapy for 1 month – symptomatic relief obtained for low back ache.
May 2024	Consulted Ayurveda college OPD took internal medicines for 1 month - Considerable relief obtained for LBA but no satisfactory relief for neck pain.
July 2024	Admitted and managed with <i>sveda</i> and <i>nasya</i> procedures for 21 days along with internal medicines (Table 4,5&6). Marked improvement noted in LBA but pain over neck was fluctuating.
July 19, July 26 and August 2 <sup>nd</sup> . of 2024	<i>Smriti</i> meditation sessions were conducted
July 19, August 2 and August 16	Psychological assessments were conducted (Table 7)

**Table- 4: Initial medicines**

Medicines given	Dose	Anupana & Aushadha kala	Rationale
<i>Amritbotharam Kashaya</i>	90 ml	6am before food with lukewarm water	<i>Amapachana</i>
<i>Shaddharanam</i> tablet	2-0-0	Morning with <i>kashaya</i>	<i>Amapachana</i>
<i>Punarnavadi</i> Kashaya	90 ml	6 pm before food with lukewarm water	<i>Sophahara</i> and <i>Soolahara</i>
<i>Chandraprabha vati</i>	0-0-1	Evening with <i>kashaya</i>	<i>Mutravaha</i> sroto <i>dushti</i>
<i>Guggulupanchapala churnam</i>	5g	Bd b/f with lukewarm water	<i>Srothosodhana</i>

**Table 5: Revised internal medicines after 2 weeks (at stage of *Niramavastha*)**

Medicines given	Dose	Anupana & Aushadha kala	Rationale
<i>Rasnasapthakam Kashaya</i>	90 ml	Bd b/f 6am & 6pm	<i>Vata Kapha hara</i>
<i>Trayodasanga guggulu</i> tablet	2-0-2	Bd a/f	<i>Vata hara</i>
<i>Pathyakshadhatryadi kashaya</i>	90 ml	Bd b/f 11 am 4 pm	<i>Sira sula hara</i>
<i>Chandraprabha vati</i>	1-0-1	With <i>Pathyaksha dhatryadi Kashaya</i>	<i>Mutravaha sroto dushti</i>

**Table 6: External procedures**

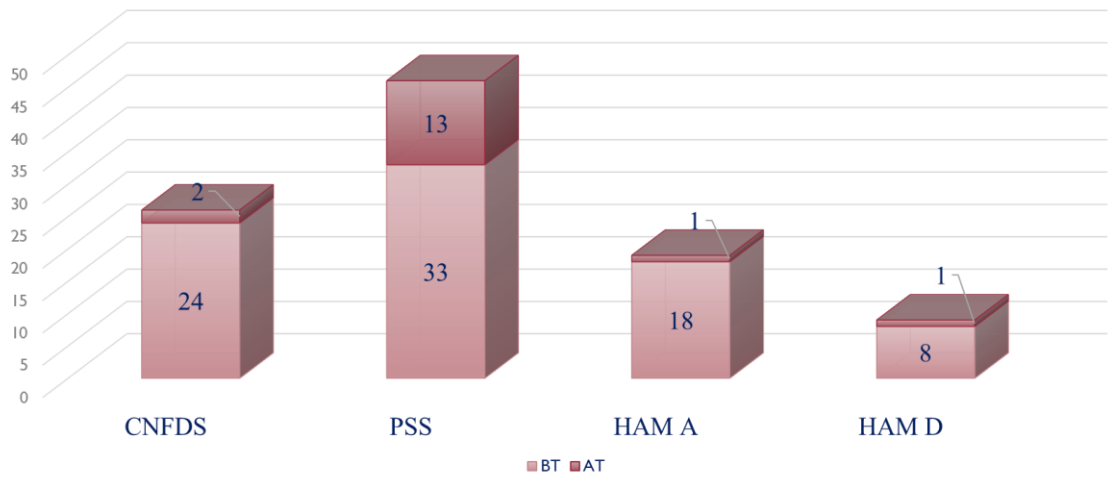
Procedure	Medicine	Duration	Rationale	Observations
<i>Churna pinda sweda</i> ( <i>Rooksha</i> )	<i>Kolakulathadi churna</i>	5 days	Initial <i>rukshana</i> <i>Kaphahara</i>	Pain persisted on cervical and lumbar spine
<i>Churna pinda sweda</i> ( <i>Snigdha</i> )	<i>Kolakulathadi churna</i> with <i>Karpooradi</i> + <i>Dhanwantharam taila</i>	2 days	<i>Vata Kapha hara</i>	No symptomatic relief in neck pain Slight relief in LBA  Weakness persisted over right U/L
<i>Jambeera pinda sweda</i>	<i>Karpooradi</i> + <i>Karpasasthyadi</i>	7 days	<i>Soolaghna</i> , <i>Vata Kapha</i>	Neck pain slightly relieved initially -

	<i>tailam</i>		<i>hara</i>	reappeared from rd. 3 day Weakness persisted over right U/L  LBA improved
<i>Abhyanga</i>	<i>Karpooradi + Karpasasthyadi taila</i>	7 days	<i>Vedana samana, Dardyakrit</i>	<ul style="list-style-type: none"> <li>• Symptomatic relief from LBA</li> <li>• Neck pain increased initially</li> <li>• Weakness persisted over right U/L</li> </ul>

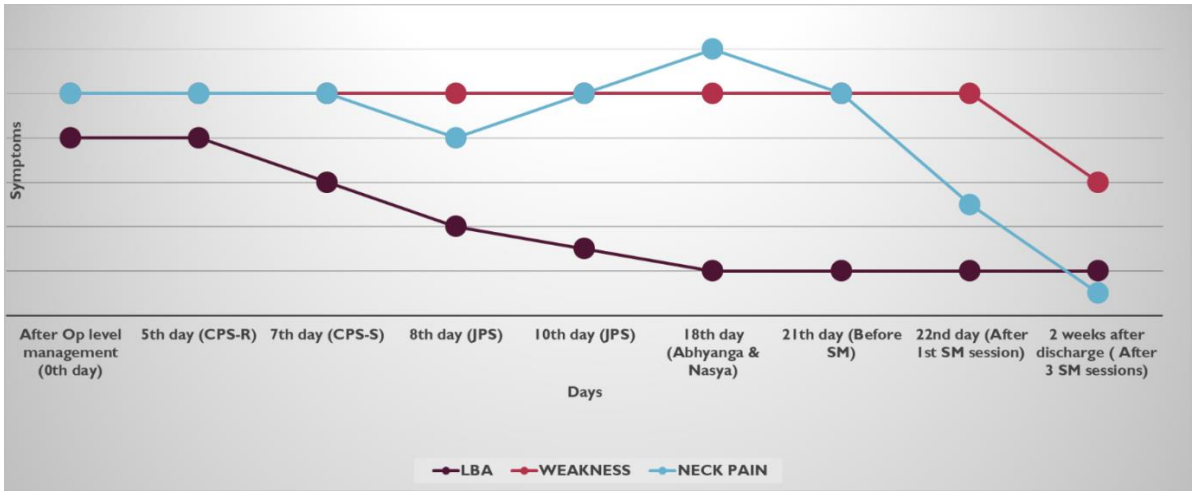
**Table 7: Outcome**

SCALES	27/06/24	19/07/24	02/8/24	16/8/24
<b>CNFDS</b>	25 (Moderate to severe disability)	24 (Moderate)	5 (Mild)	2 (Minimal)
<b>PSS</b>	-	33 (High)	-	13 (Low)
<b>HAM A</b>	-	18 (Mild to moderate)	6 (Mild)	1 (Mild)
<b>HAM D</b>	-	8 (Mild)	2 (Normal)	1 (Normal)

CNFDS: Copenhagen Neck Functional Disability Scale, PSS: Perceived Stress Scale,  
HAM A: Hamilton Anxiety rating scale, HAM D: Hamilton Depression rating scale



Graph 1: Observations on assessment scale



Graph 2: Observations on interventions





## Smriti Meditation Research Institute for Therapeutic Innovations (SMRITI)

### Case Record Form

1. Case No:		2. Date:		3. Session Number :	
<b>A. Vidya</b>					
(Personal Information, presenting complaints previous diagnosis, tests and analysis)					
<b><u>Personal Information</u></b>					
4. Name:		5. Age:		6. Gender:	M/F/ other
<b>Presenting Complaints: -</b>					
<b>Previous diagnosis: -</b>					
<b>Tests and analysis: -</b>					
<b>Abnormal findings in Vidya: -</b> (lack of memory/ lack of orientation/ lack of self-identity/ lack of willingness)					
<b>7. Siddhi –</b> (skills, experiences, strength, physical and mental abilities)					
<b>Abnormalities in Siddhi-</b> (Impact on skills, experiences, strength, physical and mental abilities)					
a. Emotional (Mood & Affect)	b. Physical ailments	c. Behavioural problems	e. Others if any (lack of motivation/ concentration)		
<b>8. Mathi –</b> (Ability to analyse, integrate and process various facts, events and experiences)					
<b>Abnormalities in Mathi: -</b> (Disorganized thinking and speaking, inability to analyse, repeated thoughts)					

9. Medha - (Not having any misbelief, unconscious fears, obsessive thoughts)					
Abnormalities in Medha: - (Delusions, hallucinations, obsessions, phobia, blind belief)					
10. Prajna - (New realizations, revelations, insights after integrating and processing various facts and experiences)					
Abnormalities in Prajna: - (Low level of intelligence, lack of creativity, inability to solve problems, poor judgement)					
f. Treatment history/ Psychiatric drug intake					
11. Goal Setting:					
a. Stating the goal					
b. Detailing the goal					
c. Anticipated changes					
12. Induction Methods					
a. Images (visual)	b. Emotional	c. Kinaesthetic	d. Natural Induction	e. Recall induction	f. others (specify)
13. Hurdles					
a. Visual	b. Emotional	c. Kinaesthetic	d. Intellectual	e. others (specify)	
14. Distractions					
1. Lack of attention	2. Difficulty to focus	3. Sleep	4. Sensitive to ext. Sensations		
15. Problem Solving					
a. Intellectual	b. Emotional	c. Revelation	d. Physical		
16. Realization					
A. Statement on understanding					
B. Comparison of changes from the initial stage					
C. Emotional experience at the end					
17. Duration of the session					
18. Remarks by Guide:	Level of consciousness: Issues to be addressed in future sittings:				

Figure-1: *Smriti* Mediation Case Format

## DISCUSSION

### Discussion on Neck pain – as a psychosomatic symptom:

The international association for the studies of pain defines pain as an unpleasant

sensory and emotional experience associated with actual or potential tissue damage.<sup>[11]</sup>

Understanding the relationship between pain and stress is crucial for developing effective treatment strategies. Addressing

both physical and psychological aspects can lead to better outcomes for individuals suffering from chronic pain. The relationship between pain and stress is complex and multifaceted, involving both psychological and physiological mechanisms. Stress activates the body's fight-or-flight response, which can heighten sensitivity to pain.<sup>[12]</sup> Stress hormones such as cortisol can influence pain perception and exacerbate existing pain conditions. Research shows that stress can alter neural pathways involved in pain processing. This includes changes in the spinal cord and brain regions responsible for pain modulation.<sup>[13]</sup> Effective coping strategies for managing stress can reduce pain perception and improve quality of life for individuals with chronic pain. Neck pain can indeed be a psychosomatic condition, where psychological factors contribute to the development and maintenance of symptoms. So, the role of psychotherapeutic interventions is important here.<sup>[14]</sup>

#### **Discussion on *Smriti* meditation:**

*Smriti* meditation is a guided interactive technique developed from *satvajaya* where these tools were explored. It works on the principles that a deeper awareness of memories and expression of related emotions helps to eliminate the attached negative emotions. A trained therapist can provide an assistance in the process of meditation by, formulating a proper goal, focusing on the goal, expanding awareness of the goal, sustaining the awareness on the object of meditation, and addressing the emotional obstacles. The techniques used for the assistance are interaction and guidance. An adequate response from the part of the guide widens the awareness of

the meditator and gets deeper into the process of meditation. The scope of practice of Ayurveda in the prevention and treatment of stress and psychosomatic disorders need to be fruitfully explored.

*Smriti* meditation help subjects to experience their perceived emotions and ventilate their unexpressed emotions.<sup>[15]</sup> *Satvajaya chikitsa* is a unique non pharmacological approach which refers to control of mind by withdrawing it from undesired objects. According to *Caraka* it can be attained through *ज्ञान, विज्ञान, धैर्य, स्मृति* and *समाधि*. *Jnana* can be elaborated into 5 domains – where we can assess *vidya, sidhi mathi, medha and prajna*.

In this patient, under *jnana* process information was initially collected through *vidya, sidhi mathi, medha and prajna*. By *Vidya* identified Personal Information, presenting complaints previous diagnosis, tests and analysis etc. where we could also find abnormality in memory, orientation, self-identity, willingness etc. Here, she was avoiding circumstances due to fear of pain. In *Siddhi* generally the skills, experiences, strength, physical and mental abilities of the person are assessed, from the interrogation it was found that she was a mehndi artist and also a home maker. But now she was unable to do daily household activities and hobbies due to pain. *Mathi* is the ability to analyze, integrate and process various facts, events and experiences. She could able to analyze the life events which causing stress and described stressful situations after which she experienced severe pain also could connect these stressful life events with severity of neck pain. The abnormalities in *medha* were fear of problems with husband, preoccupation with health and misbelief that words of mother-in-law will become true in future. The *pranja*

part included understanding the relationship between stressful life events and neck pain, she felt hopeful that symptoms will relieve and got courage to face the situations.

Initially she stated the goal as relief from neck pain which was restated as want to escape from interpersonal relationship issues with mother-in-law after the *jnana* process. Anticipated changes through meditation were emotional control and desire to accomplish daily tasks with ease. The techniques used here for induction of meditation are emotional, kinesthetic and natural induction. There were no hurdles and distractions during the procedure. She could able to solve the problem under intellectual, emotional, revelation and physical domains. After the meditation she stated that “I experienced the severe pain over neck when I am thinking about the stressful life events” and regained hope that she could find the cause of the illness. Emotional experience at the end was noted as long sigh of relief and felt hopeful.

There are also studies showing *Smriti* meditation can improve the mental strength by widening awareness as there is significant association between *satva bala* and pain perception.<sup>[16]</sup>

Significant Add on effect of *smriti* meditation with selected Ayurvedic medicines in quality of pain perception and quality of life in chronic LBA was also studied.<sup>[17]</sup>

## CONCLUSION

This case report illustrates the importance of psychological screening if pain is associated with psychological factors. Response is obtained by addressing psychological distress along with medical management in such cases. Psychotherapeutic techniques will help to

cope with stress in healthy ways. *Smriti* meditation which is a method of *satvavajaya chikitsa* (Ayurvedic psychotherapy) helps to express unexpressed emotions, leading to better coping strategies that prevent recurrence. So, there is an add on effect of *smriti* meditation in neck pain when it is associated with psychological distress. There is scope for further research as stand-alone and control studies as well.

## Declaration of patient consent

Authors certify that they have obtained patient consent form, where the patient has given his consent for reporting the case along with the images and other clinical information in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

**Conflict of interest:** The author declares that there is no conflict of interest.

**Guarantor:** The corresponding author is the guarantor of this article and its contents.

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