

# Marma Chikitsa to Manage Griva Sandhigata Vata W.S.R. to Cervical Spondylolisthesis – A Case Study

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## ABSTRACT

**Introduction:** *Ayurveda* is a life science that emphasizes treating the mind, body, and soul to achieve complete health. Detailed descriptions about *Marma* and *Marma Chikitsa* is found in the *Sushruta Samhita* and *Siddha* texts respectively. Manipulating or stimulating *Marmas* to manage various diseases is known as *Marma Chikitsa* or therapy. Cervical spondylolisthesis is a rare and uncommon condition in patients with neck pain. Typically, this abnormality presents with cervical pain without any neurological deficit. It usually involves a defect in the pedicle of the sixth cervical vertebra. The prevalence of anterior spondylolisthesis is 6.0% in men and 6.3% in women, and that of posterior spondylolisthesis is 13.2% and 8.9%, respectively. **Aims and Objectives:** To evaluate the effectiveness of *Marma Chikitsa* in the management of *Griva Sandhigata Vata*. **Materials and Methods:** A single case study of a 54-year-old married man who was diagnosed with traumatic spine injury (C5 anterolisthesis over C6 with cervical cord compression) visited *Shalya Tantra Marma Chikitsa* outpatient department with the chief complaint of pain over the left shoulder joint and neck along with weakness of the left upper limb. The treatment approach involved employing *Marma Chikitsa*, primarily targeting the upper extremities. **Results:** Following the treatment regimen, the patient experienced a substantial recovery, achieving a 90% restoration of movement range, albeit with minor discomfort at the limits of motion. **Conclusion:** *Marma Chikitsa* holds significant importance in managing *Griva Sandhigata Vata* (Cervical spondylolisthesis)

**Keywords:** Anterolisthesis, Cervical spondylolisthesis, *Griva Sandhigata Vata*, *Marma*, *Marma Chikitsa*, *Prana*  
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## INTRODUCTION

*Marma* science, an esoteric facet of *Ayurveda*, traces its origins back to the Vedic era. *Marma* points, described in *Ayurveda*, are pivotal anatomical sites whose injury can precipitate pain, disability, or even mortality, contingent upon the specific *Marma* affected. *Marma* is an anatomical location that connects muscles, veins, ligaments, bones, and joints.<sup>[1]</sup> There are 107 *Marmas* (vital spots) in total, with eleven in each limb, twenty-six in the trunk (three in the belly, nine in the thorax, fourteen in the back), and thirty-seven in the head and neck area.<sup>[2]</sup> They are also the places where not just *Tridosha*, but also their subtle forms *Prana*, *Ojus*, and *Tejas*, as well as *Sattva*, *Raja*, and *Tama*, may be found.<sup>[3]</sup> *Marma*, according to *Vagbhata*, is the meeting point of *Mamsa*, *Asthi*, *Sira*, *Snayu*, *Damni*, and *Sandhi*, as well as the location of *Prana*. However, it is also believed that *Marma* can be made up of any or all of the aforementioned.<sup>[4]</sup>

*Marmas* are part of a greater “sacred physiology” that maps out the body according to subtle energy currents and power points. The body has its own special sacred points just as the Earth has its sacred sites and energy currents according to sacred geography. The use of pressure points for massage and acupuncture has become a popular topic in natural healing today. In *Ayurveda*, the traditional medicine of India, these pressure points are called *Marmas*, meaning “vulnerable” or “sensitive” zones. Such points can be used specifically for the diagnosis and treatment of disease or generally for promoting health and longevity. *Marmas* are integral to all *Ayurvedic* therapies from simple self-treatments to complex clinical procedures. They form one of the main pillars of *Ayurvedic* thought and practice.<sup>[5]</sup>

Despite a few conducted studies, clinical data on the *Marma* therapy's efficacy remains sparse, limiting its exploration across various ailments. Nonetheless, in managing conditions like *Griva Sandhigata Vata* (cervical spondylolisthesis), which lacks a permanent cure in modern medicine, *Ayurveda* offers effective management through *Marma Chikitsa*.

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Spondylolisthesis occurs when one vertebra slips out of place in the spinal column. It may slip forward, back, or press down on the vertebra below, causing pain and pressure in the neck or back. When a vertebra shifts out of alignment, it can lead to a gradual curvature of the back or neck, or cause narrowing of the spinal canal. Some individuals may experience pain immediately after the disc dislocates, while others might not show any symptoms at all. Spondylolisthesis can occur in several forms: Degenerative: Aging causes discs to lose moisture, leading to instability. Congenital: Abnormal vertebral arrangement from birth increases slippage risk. Isthmic: Stress fractures weaken vertebrae, allowing them to shift. Traumatic: Severe injuries can result in vertebral dislocation. Pathological: Diseases like osteoporosis or infections can weaken the spine. Post-surgical: Occasionally, spinal surgery may lead to slippage. Spondylolisthesis that affects the neck generally causes neck pain. Pain often radiates to the shoulder blade or back of the head. The condition may even cause pain and numbness in the arms or legs.<sup>[6]</sup>

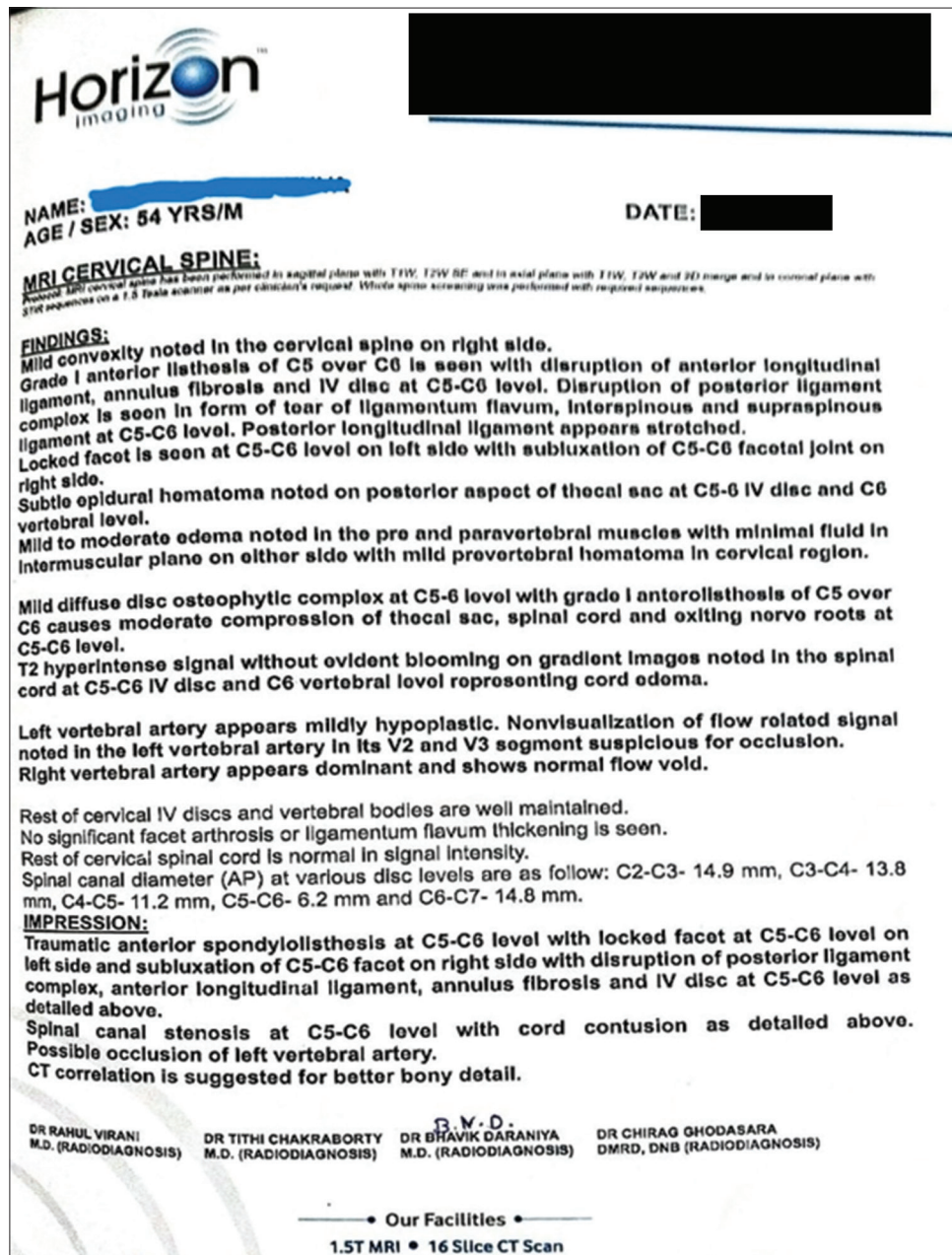


Figure 1: MRI Cervical Spine

## CASE DESCRIPTION

### Patient Information

The patient was a 54-year-old male, an autorickshaw driver by occupation, who was consulted in the outpatient department of ITRA Hospital, Jamnagar. He had an average physique, with a height of 155 cm and a weight of 58 kg.

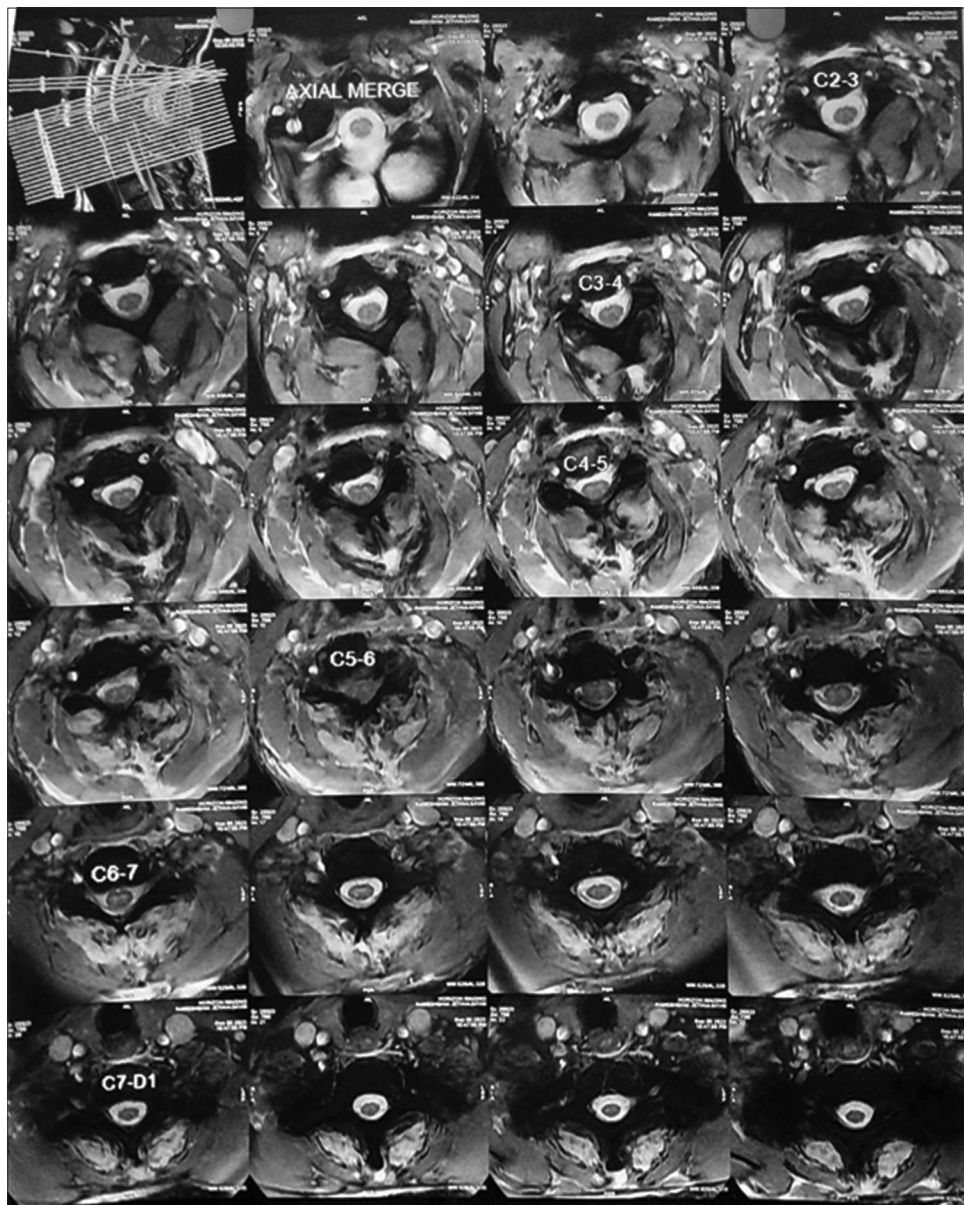
### Present Medical History

During data collection for an ongoing research study with registration number CTRI/2023/08/056343 in the Department of *Shalya Tantra*, ITRA, Jamnagar (India), the patient was enrolled. He had complained of pain over the left shoulder joint and neck along

with weakness of the left upper limb for the last 4 months with a very limited range of movements.

On the date of September 6, 2023, a patient was brought to Sterling Hospital, Rajkot, with a complaint of A/H/O wheat grain 4-5 packages (approximately 50 kg) falling overhead while working at Jamnagar grain market on the date of September 4, 2023, at around 10:30 am while unloading them from a truck and sustained a cervical spine injury. Primary treatment was taken at Sadbhavna Hospital in Rajkot, where he was diagnosed with traumatic anterior spondylolisthesis at C5 and C6 Figures 3-6.

On September 9, 2023, CT scan as shown in Figures 1 and 2. The cervical spine showed traumatic anterior spondylolisthesis at the C5-C6 level with a locked facet at the C5-C6 level on the left side and subluxation of the C5-C6 facet on the right side with disruption



**Figure 2:** MRI Cervical Spine Images



**Figure 3:** Flexion before treatment



**Figure 4:** Abduction before treatment

**Table 1:** Physical stimulations of Marma points<sup>[7]</sup>

Physical stimulations of Marma					
S. No.	Marma	Location	Tissue involved anatomical structures	Size	No.
1.	Krikatika	At the junction of neck and head. Controls posture.	Atlanto-occipital joint. Occipital and 1 <sup>st</sup> cervical bone. Anterior longitudinal, Anterior and Posterior Primary ramus nerves. Vertebral artery and vein. Rectus capitis lateralis and Rectus capitis anterior muscles.	½ finger	2
2.	Ansa	Between the neck and arms, on the trapezius muscle. 1/2 inch lateral to 5 <sup>th</sup> Cervical vertebra. Controls 5 <sup>th</sup> chakra, Vishudha. Bhrajaka Pitta, Udana Vata and Brain.	Trapezeus and Levator scapuli muscles. Subscapular artery and vein. Drainage to the Sub scapular group of axillary glands. Scapula bone and coraco-acromial and Supra scapular ligaments. Phrenic and 3, 4 <sup>th</sup> cervical nerve.	½ finger	2
3.	Amsaphalaka	On the scapula bone above Bruhati (1/2-inch lateral to the 5 <sup>th</sup> , 6 <sup>th</sup> , 7 <sup>th</sup> cervical and 1 <sup>st</sup> Thoracic vertebra.	5, 6, 7 <sup>th</sup> thoracic and 1 <sup>st</sup> Thoracic vertebra. Subclavian artery and vein. 5, 6, 7 <sup>th</sup> thoracic nerve. Trapezeus and Rhomboid Major muscles.	½ finger	2
4.	Kakshadhara	Controls Pranavaha srotas 2 inches below the point joining the lateral 1/3 and medial 2/3 of clavicle, where the Median nerve is situated.	Pectoralis Major and minor as well as intercostal muscles. Median nerve. Lymph drainage to axillary glands. Axillary artery and vein.	1 finger	2
5.	Urvi	Controls Mamsavaha Srotas. In the Radial aspect of the arm about 4 and 1/2 inches from the medial epicondyle. Controls Rasavaha and Udakavaha and healthy tissue growth.	Brachial artery and vein, Lymph drainage to axillary group of glands. Median and Ulnar nerve. Biceps and Triceps muscles.	1 finger	2
6.	Aani	In the medial aspect of the arm, 2 inches above the medial epicondyle of the Humerus. Controls Udakavaha srotas.	Biceps, Coracobrachialis muscles. Ulnar and Median nerve. Lower end of the Humerus. Brachial artery and vein.	½ finger	2
7.	Kurpara	Controls Raktavaha srotas. Marma on rt. Controls Liver, Marma on Lt. Controls spleen.	Elbow joint - Ligament capsule. Ulnar, Radial and Annular radial collateral ligament, Median nerve and its branches. Brachial artery, Tributaries of Cephalic and Median cubital vein. Supinator, Extensor carpi radialis.	3 fingers	2
8.	Indrabasti	Center of the forearm, slightly at the lateral aspect where the Radial artery passes. Controls Annavaha srotas, Agni and small intestine	Biceps, Triceps and Pronator teres muscles. Flexor pollicis longus, Extensor Carpi radialis, Brachioradialis and Pronator teres muscles. Radial and Median nerve. Radial artery and Tributaries of Cephalic vein.	½ finger	2
9.	Manibandha	1/2 inch lateral to the centre of the wrist joint. Controls Asthivaha srotas.	Wrist joint. Radio-ulnar and radio-carpal ligaments	2 fingers	2
10.	Kshipra	Situated in between the thumb and index finger. Controls Rasavaha and Pranavaha srotas, Heart and Avalambaka kapha.	Radial and Median nerve and artery. Flexor Pollicis brevis. Oblique and transverse head of adductor pollicis, Branches of Median Nerve, Dorsal metacarpal artery and superficial palmer arch supplying blood to the fingers.	½ finger	2
11.	Talahridaya	Situated in the center of the palm, facing the root of the middle finger. Controls Pranavaha srotas, Heart and Lungs, respiration, and Avalambaka Kapha.	Tendon of Flexor digitorum profundus, Lumbricalis and Extensor digitorum. Mamsa dhatu of Tunica media of Superficial and Deep Palmer arch. Interosseus muscle. Branches of Median nerve.	½ finger	2

of the posterior ligament complex, anterior longitudinal ligament, annulus fibrosis, and IV disc at the C5-C6 level, as detailed above. Spinal canal stenosis at C5-C6 level with cord contusion as detailed above. Possible occlusion of the left vertebral artery.

On September 6, 2023, C5 corpectomy with anterior cervical decompression and fixation with an expansion cage under GA were done at Sterlin Hospital in Rajkot.

His recovery was uneventful, so he visited *Shalya Tantra Marma Chikitsa*, outpatient department (OPD) of ITRA.

### Past Medical History

He had no history of diabetes mellitus, hypertension, cardiac disease, thyroid problems, tuberculosis, or any serious illness.

**Table 2:** Range of movements and functional assessment for the shoulder joint

Criteria	GR0	GR1	GR2	GR3	GR4
Tenderness	No Pain	Patient Says Its Paining	Patient Winces	Winces and withdraws the part	Do not allow touching the painful area.
Stiffness	No Stiffness	Noticeable Stiffness	Mild Stiffness	Moderate Stiffness	Sever Stiffness
Flexion	160–180	121–160	81–120	41–80	0–40
Abduction	160–180	121–160	81–120	41–80	0–40
Internal Rotation	80–90	61–80	41–60	21–40	0–20
External Rotation	80–90	Above 50	25–50	Up to 25	No External Rotation



**Figure 5:** Flexion after treatment



**Figure 6:** Abduction after treatment

clear, his bladder habits were normal, and his bowel function was satisfactory. According to the *Ayurvedic* assessment, he exhibited a *Vata-Kapha Prakriti*. His gait was normal, but active cervical spine movement was limited, with pain exacerbated by neck and shoulder joint motion. Tenderness was noted upon examination of the C5 and C6 vertebrae, while all cranial nerves were intact.

### Investigations

There were no significant findings from the lab investigations. Findings of magnetic resonance imaging Cervical Spine done on September 5, 2023:

### Treatment Plan

Following informed written consent, the patient underwent controlled physical stimulation of the specified *Marma* points on December 14, 2024, the same day. Each *Marma* point was stimulated 20–25 times in a single session per day, applying optimal pressure with a contact duration equivalent to one cardiac cycle, spanning 0.8 s, for 2 weeks on an empty stomach in the morning. The stimulation rhythm was synchronized with respiration, approximately 18 times/min. Starting from the center and moving towards the periphery, *Marma* points on the upper extremities as mentioned in Table 1 were pressed, initiating from the right side (as in the case of males and the left side for females). Following comprehensive instructions on Self-*Marma* stimulation, he received training and was advised to continue the therapy daily.

### OBSERVATIONS AND RESULTS

The assessment was done based on improvement in symptoms and range of movements, along with the NDI score as shown in Table 2. On the 1<sup>st</sup> consultation, the Visual Analog Scale (VAS) score was 8, and stiffness was present, while after 1 month of *Marma* stimulation, the VAS score came down to 1, and stiffness was reduced a lot. After continuous follow-ups of *Marma* stimulation active range of motion, which was measured by Goniometer and NDI score, before and after treatment is given in Table 3. There was significant improvement seen.

### Past Surgical History

He had no such history.

### Family History

There was no family history of hypertension or any other hereditary or congenital diseases.

### On Physical Examination

Upon physical examination, the patient presented in good general condition with a pulse rate of 84/min, regular; blood pressure measuring 130/80 mmHg; and a respiratory rate of 18/min, regular, with no fever detected. His tongue appeared clean, his voice was

### Before treatment (BT)

As shown in Figures 3 and 4 and Table 4, flexion was 60°, abduction was 50°, and both internal and external rotations were 0° with an NDI (Neck Disability Index) score of 85%.

### After Treatment (AT)

As shown in Figures 5 and 6 and Table 4, flexion was 140°, abduction was 120°, and internal and external rotations were 60° and 70°, respectively, with an NDI (Neck Disability Index) score of 12%.

**Table 3:** Timeline of events

Day	Clinical assessment	Neck Disability Index (NDI) Score
December 14, 2023 (Before treatment)	Pain: grade 4 Tenderness: grade 3 Stiffness: grade 4 Flexion: 60 Abduction: 50 Internal rotation: 0 External rotation: 0	Pain, stiffness, and decreased range of motion. NDI Score: 85%
December 20, 2024 (Day 7)	Pain: grade 3 Tenderness: grade 2 Stiffness: grade 4 Flexion: 80 Abduction: 70 Internal rotation: 20 External rotation: 30	Pain and stiffness were slightly reduced. (VAS measurement, grades for stiffness and tenderness) Range of motion slightly improved (degree and grade). NDI Score: 70%
December 27, 2023 (Day 14)	Pain: grade 3 Tenderness: grade 2 Stiffness: grade 3 Flexion: 90 Abduction: 80 Internal rotation: 30 External rotation: 40	Pain and stiffness moderately reduced. Range of motion moderately improved. NDI Score: 55%
January 03, 2024 (Day 21)	Pain: grade 2 Tenderness: grade 2 Stiffness: grade 3 Flexion: 100 Abduction: 90 Internal rotation: 40 External rotation: 50	Pain and stiffness moderately reduced. Range of motion moderately improved. NDI Score: 40%
January 10, 2024 (Day 28)	Pain: grade 1 Tenderness: grade 1 Stiffness: grade 2 Flexion: 120 Abduction: 110 Internal rotation: 50 External rotation: 60	Pain and stiffness moderately reduced. Range of motion moderately improved. NDI Score: 30%
February 10, 2024 (1 month follow up)	Pain: grade 0 Tenderness: grade 0 Stiffness: grade 1 Flexion: 140 Abduction: 120 Internal rotation: 60 External rotation: 70	No pain but mild stiffness was present. 50% range of motion achieved. NDI Score: 20%
April 10, 2024 (2 months follow up)	No pain and stiffness. 70% range of motion achieved. NDI Score: 15%	
July 10, 2024 (3-month follow-up)	No pain and stiffness. 85% range of motion achieved. NDI Score: 12%	

## DISCUSSION

*Vyana Vayu* is linked to both locomotion and the circulation of *Prana* and is situated at *Marmas*. Consequently, stimulating

the *Marmas* can regulate *Vyana vayu* and *Vata dosha*, leading to beneficial healing effects. Proper balancing through targeted *Marma* stimulation may enhance the immune system and induce rejuvenation. Appropriate *Marma* stimulation can alleviate stress by influencing the *Sattva guna* (mind). When stimulating *Marma* points, it is hypothesized that descending analgesia releases natural opioids like enkephalins, endorphins, and dynorphins, which are more potent than morphine.<sup>[8]</sup> Additionally, the release of nitrous oxide (N<sub>2</sub>O) can dilate blood vessels and improve circulation to affected part and provide normal tissue perfusion.

A limitation of this study is the need for repeated hospital visits over 21 days or more. However, this can be justified by the promising results of ethnic *Marma* therapy during the treatment and the lack of recurrence.

All *Marmas* are present in bilateral upper and lower limbs. The classical texts of *Ayurveda* instruct to prevent the *Marma*, or vital points, from being injured. But, in the current era, these *Marma* are physically stimulated in controlled ways to treat diseases. In this case, right upper extremity *Marmas*: *Krikatika*, *Amsa*, *Amsaphalaka*, *Kakshadhara*, *Urvi*, *Ani*, *Kurpar*, *Indrabasti*, *Manibandha*, *Kshipra*, and *Talahridya* stimulation was given to the patient, who was suffering from *Griva Sandhigata Vata* (cervical spondylolisthesis). The *Marmas* mentioned above were identified and pressed in the left hand along the thumb and finger and were pressed in a controlled way, 20–25 times in coherence with breathing. These *Marmas* can also be pressed by the therapy receiver with the help of the index finger and thumb of the other hand after thorough instruction. Thus, this therapy was also taught to the patient, and regular follow-up was done with the ongoing therapy. During the first day of therapy, the patient felt slight, bearable pain in the *Marma* area. He was overly cautious while going through the therapy. On the first day, there was a reduction in pain and stiffness immediately after the therapy. However, on the second day, the pre-therapy pain and stiffness were lower than the previous day, which motivated the researcher to continue the therapy. After seven days, pain (Grade 3) significantly decreased; stiffness was there, but the ROM of the neck joint improved. After 28 days, pain (Grade 1) and stiffness moderately reduced, and range of motion also moderately improved. The patient is still practicing self-*Marma* therapy, and his neck pain and ROM are almost within normal range as of the day of reporting this case report. This finding reinforces the hypothesis that *Marma* regions of the body are the vital regions having multimodal and multi-dimensional effects due to their influence on *Prana* and, hence, on *Tridsoha* and *Triguna*, which perhaps brings harmony between the systems of the body. Patient perspective on treatment received: On the first screening day for the study, I was not aware of *Marma* therapy in the management of cervical spondylolisthesis. However, the investigator and his team counselled me well enough, and they advised me to consult the *Asthi Sandhi* and *Marma* OPD. After thorough screening by the consultant and his team, after which they demonstrated the *Marma* therapy to me. The therapy was comfortable, and I felt slight bearable pain at that point, which subsided as the therapy was finished. To my surprise, my neck pain lowered and neck stiffness reduced immediately after first sitting, which motivated me to go for therapy. I start coming to the *Marma* OPD daily to get the therapy and to learn the therapy. I had no

**Table 4:** Assessment before treatment and after treatment

Findings	Before treatment	After treatment
Clinical findings		
• Pain and stiffness in the Cervical region	Present	Absent
• Pain radiating to the right upper extremity	Present	Absent
• Tingling and numbness in both upper extremities	Present	Absent
• Pain	VAS-8	VAS-0
Local examination Inspection		
• Cervical spine curvature	Normal	Normal
• Shape of spine	Normal	Normal
• Length of the cervical spine	Normal	Normal
• Swelling	Present	Absent
• The supraclavicular fossa	Asymmetry	Asymmetry
• Torticollis	Absent	Absent
Palpation		
• Tenderness	Present at C5, C6	Absent
• Crepitation during flexion and extension	Present during forward flexion	Absent
ROM		
• Flexion	60°	140°
• Abduction	50°	120°
• Internal rotation	0°	60°
• External rotation	0°	70°
NDI score (%)	85%	12%

complaints either during the therapy or post-therapy. I was happy to see that the readings of my neck pain and range of motion gradually improved a lot. Right now, I am having a normal range of motion without pain. Thanks to the investigator and his team for all their efforts and for teaching me the therapy, which was extremely easy to learn and apply.<sup>[9]</sup>

## CONCLUSION

This case study illustrates the efficacy of Ethnic *Marma* therapy in addressing cervical spondylolisthesis by enhancing factors such as pain, tenderness, stiffness, and range of motion. Ethnic *Marma* therapy is a non-pharmacological, rapid, cost-effective, time-efficient, user-friendly, and non-invasive alternative for treating *Griva Sandhigata Vata* (cervical spondylolisthesis). Since this is a single case study, further research is needed to explore the effects of combining Ethnic *Marma* therapy with pharmacological treatments.

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