

Cervical spondylosis: A case based exploration of Panchakarma therapeutic Potential

Case Report

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Abstract

Background: People's modern lives are mostly dependent on and hooked to digital lifestyles due to the nature of their jobs prolong sitting works for hours in one spot can lead to cervical issues, such as cervical spondylosis. This degenerative condition is persistent age-related wear and tear on the cervical spine's disc and vertebrae is known as cervical spondylosis. In Ayurveda cervical spondylosis can be correlated to the *Manyastambha* which is one among the 80 types of *vata vyadhi*. **Aim and Objective:** To study the effect of *Greeva basti* (localised cervical oil pooling therapy) and *Kukutanda pinda sweda* (hens' egg bolus fomentation) along with Internal medication in the management of *Manyastambha*. **Materials and methods:** A 29-year-old female patient came with complaints of pain and stiffness in the back of neck region and mild radiating pain to left shoulder. Patient had complaints since three years and increased since six months used many medications but didn't get any relief. X-ray finding shows Disc space narrowing at C4-C5, C5-C6 and Straightening of cervical Lordosis due to paraspinal muscle spasm. According to Ayurveda the treatment of *vata vyadhi* is *snehan* (oleation) and *swedan* (Fomentation). So, the treatment like *Greeva basti* and *Kukutanda pinda sweda* are advised for nine days and followed by Ayurvedic internal medicines for one month. **Result:** The patient was assessed with subjective and objective parameter before and after treatment. The score of pain reduced from 3 to 0, stiffness from 2 to 0, range of neck movements Flexion from 3 to 0, extension from 3 to 1, lateral flexion rt and lt from 2 to 0, rotation of neck from rt and lt 2 to 0. **Conclusion:** A treatment protocol, consisting of *Greeva basti* (localized oil pooling therapy) and *Kukutanda pinda sweda* (hens' egg bolus fomentation), and oral herbal medications, significantly improved cervical spondylosis symptoms by 90% and enhanced cervical curvature, as confirmed by radiographic evidence.

Keywords: *Manyastambha*, Cervical spondylosis, *Panchakarma*, *Kukutanda pinda sweda*, *Greevabasti*, *Ayurveda*.

Introduction

One of the common orthopaedic conditions that is mostly observed in modern lifestyles is Cervical spondylosis. As the over use of laptop, computer work, lack of exercise, sitting continuously for hours and sedentary life styles, leads to spinal cord problems mainly cervical. 20-50% of adult population are seen with the incidence of neck pain per year. 25% of patients under 40 years, 50% of patients over 40 years, and 85% of patients over 60years exhibit some signs of degenerative changes.(1) A condition of age-related wear and tear affecting the cervical spine's disc and vertebrae is called cervical spondylosis. "It is more common as people age, with symptoms peaking before

the age of 50 and declining after, particularly in older adults over 60."(2)

In Ayurveda cervical spondylosis is co-related to *Manyastambha*. It is one among the 80 types of *vata vyadhi*.(3) The term *Manyastambha* derives from the conglomeration of two word '*Manya*' means Nape of neck and '*Stambha*' means stiffness, rigidity.(4) Acharya Sushruta has mentioned *diwasapna* (day sleep) and using inappropriate pillow while sleeping and continuous seeing in upward direction are the causative factors which vitiates *vata* and *kapha dosha* and leads to *Manyastambha vyadhi*.(3) The two main symptoms mentioned in *manyastambha* is *Ruk* (pain) and *Stambha* (stiffness) in the neck region associated with *asthi* (bones) and *sandhi* (joints). *Vata* is the main factor for all the movements in the body. (5) The *snehan* (oleation) and *swedan* (fomentation) karma are said to be the line of treatment in *vata vyadhi*, (6) so *Greeva basti* and *Kukutanda pinda sweda* are selected. Acharya Bhavaprakasha in *vata vyadhi adhyaya* mentioned *kukutanda pinda sweda* as a line of treatment for *Manyastambha*.(7) *Antahparimarjana* (internal treatment) and *Bahirparimarjana* (external treatment) are two sets of treatment. In

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Bahirparimarjana chikitsa (external treatment) there is local action and absorption of the drug, there is no entry of the drug into the systemic circulation. *Greeva basti* is one of the *Bahirparimarjana chikitsa* but is not mentioned in the text directly. Along with panchakarma the Internal medicines like *Trayodashanga guggulu*, *Panchamrit loha guggulu*, (*Dhootpapeshwar brand*), *Vataganjakush ras* (*Baidyanath brand*), Soft gel capsule Cervilon (AVN Ayurveda company) are advised.

Aims and Objectives

To study the effect of *Greeva basti* (localised cervical oil pooling therapy) and *Kukutanda pinda sweda* (hens’ egg bolus fomentation) along with Internal medication in the management of *Manyastambha*.

Materials and methods

- Study design: A single case study.
- Informed consent was taken from the patient
- The assessment was done according to subjective and objective parameters.
- The patient was treated with *Greeva basti* with *Sahcharadi* (*Strobilanthes ciliates* Nees.) tail and *Kukutanda pinda* (Hen’s egg bolus) *sweda* and internal medications.

Case Report

A 29-year-old female patient, (OPD.No - 0029) from the ‘Out Patient Department of Panchakarma, in DR D Y PATIL COLLEGE OF AYURVEDA AND RESEARCH CENTRE, PIMPRI, PUNE’ came with complaints of following on 3/2/2024.

H/O Present illness

Patient general condition was good. Since last three years she had a history of infrequent neck pain, which she ignored because it wasn't too bad. Gradually she noticed the intensity of the pain increased and was difficult to do her daily routines. She visited hospital took many medications like anti analgesics, Muscle relaxants, NSAIDS, etc but didn’t get any relief. As she was a student due to prolong sitting and use of laptop for more hrs such as 6-8 hrs she had increase in neck pain and stiffness and the pain was radiating to the left shoulder since six months, it became severe and unable to do her daily routines So, she visited our hospital for Ayurveda treatment. No history of DM, HTN, Thyroid, any chronic illness and Trauma.

General Physical examination

- General Condition- Stable
- Weight- 57kg
- Height- 5 ft
- BP- 110/70mm hg
- Pulse rate- 70bpm
- Temperature- Afebrile
- Respiratory rate- 17/min
- Sleep- Disturbed (due to pain)
- Appetite- Reduced

Systemic examination

- CNS: Conscious, oriented

- CVS: S1, S2 Audible
- R.S: Bilateral air way entry clear

Ten fold Examination

Table 1: Ten fold Examination

<i>Prakriti- Vata pittaja</i>	<i>Vyayama shakti- Madhyama</i>
<i>Vikriti- Vata kaphaja</i>	<i>Vaya- Madhyam</i>
<i>Sara- Madhyama</i>	<i>Satva- Madhyam</i>
<i>Samhana- Madhyama</i>	<i>Satmya- Madhyam</i>
<i>Ahara shakti: Abhyavarana- Avara Jarana shakti- Avara</i>	<i>Bala- Madhyam</i>

Eight-fold Examination:

Table 2: Eight-fold Examination

<i>Nadi- Vata pittaja</i>	<i>Sparsha- Ruksha</i>
<i>Mala- Samyak</i>	<i>Drik- clear</i>
<i>Mutra- Samyak</i>	<i>Akriti- Madhyama</i>
<i>Shabdha- clear</i>	<i>Jihwa- Alpa sama</i>

Clinical findings: (X-ray) of cervical region AP and Lateral Done on 24-1-2024

- Osteophyte formation,
- Disc space narrowing at C4-C5 and C5-C6,
- Straightening of cervical Lordosis due to paraspinal muscle spasm, Bony cervical rib seen on left side.

Diagnosis

Based on the chief complaints and clinical findings it was diagnosed as Cervical spondylosis which is correlated to *Manyastambha* in *Ayurveda*.

Assessment parameter

Subjective Parameters

- Neck pain (*shoola*)
- Stiffness (*stambha*)

Table 3: Grading of subjective Parameters (8)

Sr.no	Parameters	Grading	Observations
1	Neck pain (<i>shoola</i>)	0	Absent
		1	Mild and intermittent pain
		2	Moderate and bearable pain
		3	Severe and unbearable pain
2	Stiffness (<i>stambha</i>)	0	Absent
		1	Mild stiffness
		2	Moderate stiffness with partial restricted movement
		3	Severe stiffness with restricted movement

Objective parameters

The neck range of movement was measured with the help of Goniometry (9)

Table 4: Grading of objective parameter

1. Mobility of flexion	Grade 0	Normal i.e. 50 degrees able to touch chin and chest
	Grade 1	38 to 49 degree of total neck movement
	Grade 2	25 to 37 degree of total neck movement
	Grade 3	13 to 24 degree of total neck movement
	Grade 4	No flexion of neck
2. Mobility of extension	Grade 0	Normal i.e. 60-degree extension of head up to back
	Grade 1	45 to 59 degree of total neck movement
	Grade 2	30 to 44 degree of total neck movement
	Grade 3	15 to 29 degree of total neck movement
	Grade 4	No extension of neck
3. Lateral flexion (Rt and Lt)	Grade 0	Normal i.e. 45-degree ear touch to shoulder tip
	Grade 1	34 to 44 degree of total neck movement
	Grade 2	23 to 33 degree of total neck movement
	Grade 3	12 to 22 degree of total neck movement
	Grade 4	No flexion of neck
4. Rotation of neck (Rt and Lt)	Grade 0	Normal i.e. 80 degree able to make complete rotation
	Grade 1	60 to 79 degree of total neck movement
	Grade 2	40 to 59 degree of total neck movement
	Grade 3	20 to 39 degree of total neck movement
	Grade 4	No rotation of neck

Treatment plan

Panchkarma intervention

Greeva basti with *Sahacharadi* (*Strobilanthes ciliates Nees.*) tail and *Kukutanda pinda* (hen egg bolous) *sweda* was advised continuously for 9 days.(10)

Table 5: Panchkarma intervention (4-2-2024 to 12-2-2024)

Sr.no	Panchkarma	Duration
1	<i>Greeva basti</i> with <i>Sahacharadi</i> (<i>Strobilanthes ciliates Nees.</i>) tail (30mins)	9 days
2	<i>Kuktanda pinda</i> (hen's egg bolous) <i>sweda</i> (20mins)	9 days

Standard operative procedure

Greeva basti

It is one among the external Ayurveda Panchakarma procedure. On the droni (massage table), the patient was instructed to lie down prone position, later the dough of *Masha* was prepared and kept in a circular wall pattern over back of neck where the pain was present. The wall of the dough was sealed properly to avoid the leakage of oil, then the *Sahacharadi* (*Strobilanthes ciliates Nees.*) tail made hot tolerable by the patient and poured in *dhara* (stream) form in to the circular Rim and kept till the temperature decreases later the oil should be removed and procedure was repeated for 30 min. The temperature of the oil should be maintained at 40°C-48°C.

Kukutanda pinda sweda

10ml of *Sahacharadi* (*Strobilanthes ciliates Nees.*) tail was heated in a pan, 3 slices of *lashun* (*Allium sativum linn*), and 3 Sliced lemon (*Citrus limon linn*) are added in the pan and fried till the colour changes slightly, later 5gms of *Saindhav Lavana* (Rock salt), 2 gms of *Haridra* (*Curcuma longa linn*) and 5 gms of *Ajamodh* (*Apium graveolens linn*) *churna* were added in equal quantity. Then the 2 eggs (*hen*) were cracked and the bulk was added to the pan and fried properly. The mixture was collected in a Cora cloth and it is tied as *pottali/pinda*. Before applying the *pottali* on the patient it was heated on the pan with little amount of *til* (*Sesamum indicum*) taila. Later the temperature of the *pottali* was checked by applying it on dorsum of hand of therapist and then applied on the neck region of the patient. The Movement of cloth bolus should be in clockwise direction and was repeated for 20mins.

***Shamana chikitsa* (internal medicines)**

Shamana chikitsa was also advised along with *panchakarma* treatment. The treatment started on 4/2/2024 and continued for 41 days. **Trayodashanga guggulu*, ***Panchamrit loha guggulu* was used of *Dhootpapeshwar brand*. #*Vatagajankush ras* was used of *Baidyanath*. \$*Cervilon* soft gel capsule from *AVN Ayurveda*.

Table 6: Internal medications (4-2-2024 to 15-3-2024)

Sr.no	<i>Shamana aushadi</i>	Dose	Frequency	Duration
1	<i>Trayodashanga guggulu</i>	500mg	TDS (after food)	41 days
2	<i>Panchamrit loha guggulu</i>	500mg	TDS (after food)	41 days
3	<i>Vataganjakush ras</i>	60mg	BD (after food)	41 days
4	<i>Capsule. Cervilon</i>	500mg	BD (after food)	41 days

TDS- three times a day; BD -two times a day

Contents of the internal medication

Trayodashanga guggulu: *Abha* (*Acacia nilotica Linn.*), *Ashwagandha* (*Withania somnifera*), *Hapusha* (*Juniperus communis Linn*), *Guduchi* (*Tinospora*

cordifolia), *Shatavari* (*Asparagus racemosus*), *Gokshura* (*Tribulus terrestris*), *Vridhdharu* (*Argyrea speciosa*), *Rasna* (*Pluchea lanceolata*), *Shatahva* (*Anethum sowa Kurz*), *Shati* (*Hedychium spicatum*), *Yamani* (*Trachispermum amami*), *Nagara Ginger* (*Zingiber officinale*), *Kaushika* (*Purified Commifera mukul*). (11)

Panchamrit loha guggulu: *Shuddha Parad* (Purified and processed Mercury), *Shuddha Gandhak* (Purified sulphur), *Rajat Bhasma* (Silver Bhasma), *Abhrak Bhasma* (Mica), *Swarna Makshik Bhasma*, *Loha Bhasma* (Iron), *Shuddha Guggulu* (*Purified Commifera mukul*), Mustard oil.(12)

Vatagajankush ras: *Shuddha Suta* (Purified and processed Mercury), *Loha Bhasma* (Calx of Iron), *Swarna Makshika Bhasma*, *Shuddha Gandhaka* (Purified and processed Sulphur), *Shuddha Haratala* (Arsenis tri sulphide), *Pathya* (*Terminalia chebula* fruit rind), *Shrungi* (*Citrulus colocynthis* dried pulp), *Visha* (*Aconitum ferox*). (13)

Cervilon soft gel capsule: *Dashmoola*, *Bala* (*Sida retusa*), *Yava* (*Hordeum vulgare*), *Kola* (*Zizyphus jujuba*), *kulattha* (*Dolichos biflorus*), *saindhava* (*Rock salt*), *Sarjarasam* (*Yellow resin*), *hima* (*Vateria indica*), *Sarala* (*Pinus longifolia*), *devadaru* (*Cedrus deodara*), *manjistha* (*Elettaria cardamomum*), *methika* (*Trigonella foenum-graceum*), *Saileya* (*Parmelia kamtschadalis*), *patra* (*Cinnamomum iners*), *tagara* (*Cassia tora*), *vaca* (*Acorus calamus*), *Satahwa* (*Peucedanum graveolens*), *punarnava* (*Boerhaavia diffusa*), *satavari* (*Asparagus racemosus*). (14)

Figure 1



Figure 2



Observations and Results

The changes in the symptoms of the patient was assessed before, during and after the treatment i.e. day 0, day 9, day15 and day 30.

Table 7: Grades of the Parameters Before, During and After treatment

Sr.no	Parameters	Day0	Day 9	Day 15	Day 30
1	Neck pain	3	2	1	0
2..	Stiffness	2	1	1	0
3	Mobility of flexion	3	2	2	0
4	Mobility of extension	3	2	2	1
5	Lateral flexion (rt and lt)	2	1	0	0
6	Rotation of neck (rt and lt)	2	1	0	0

X-ray findings

Figure 3	Figure 4
<p><i>Before treatment Findings (25/1/2024): Osteophyte formation, Disc space narrowing at C4-C5, C5-C6, Straightening of cervical lordosis likely due to para spinal muscle spasm.</i></p>	<p><i>After treatment Findings (20/3/2024) : Disc space narrowing at C4-C5, C5-C6, Straightening of cervical lordosis likely due to para spinal muscle spasm. (mild improvement of curvature seen as compared to previous X-ray dated on 25-1-2024).</i></p>

Discussion

Manyastambha one among the *Kevala vata vyadhi* which is co-related to Cervical spondylosis. It is mainly caused by vitiation of *Vata* and *Kapha dosha* and leads to symptoms like pain and Stiffness.

Greeva Basti with *Sahacharadi* (*Strobilanthes ciliates Nees.*) medicated oil is an external therapy that balances *Vata* and *Kapha doshas*. The application of hot medicated oil on the painful area reduces the cooling property of *Vata dosha* and improves tissue softness through oleation. (15) Thermotherapy has a physiological impact increases capillary permeability, dilates vessels, and modifies pain threshold and decrease in muscle spasm as a result of skeletal muscle relaxation are examples of distant modifications. (16) *Sahacharadi* (*Strobilanthes ciliates Nees.*) oil with hot potency, aided by *Bhrajaka Pitta*, restores *Vata dosha*, improves bodily fluids (*Rasa, Rakta, Mamsa*), and alleviates symptoms by acting on underlying pathophysiology. (17)

Kukutanda pinda (*Hen's egg bolus*) *sweda* is one type of *snigdha sankara sweda*. It does the action in 3 forms *Swedana* (*Fomentation*) effect, *Snehana* (*Oleation*) effect and does the Nourishment and stimulates the sympathetic nervous system and results in *Vaso dilatation*. Acharya *Bhavaprakasha* said that, the eggs of birds like hen possess the properties of palliating the aggravated *Vata*.(18) Due to *vata* and *kapha dosha prakopa stambha(stiffness)* occurs and leads to decrease in movements. In this *pinda sweda* as the drugs are having *Ushna* (*hot*), *Snigdha* (*unctuousness*), *Kapha vilayana* (*dissolves kapha*) and *Tridoshagna* Properties helps in normalcy of vitiated *vata* and *kapha dosha* by *stambhana-hara* (*reducing stiffness*) property.(19) *Swedana* having *Ushna guna* which counteract the *Sheeta* property, helps in *Stambha Nigrhana*.(20) *Kukutanda pinda sweda* causes vasodilatation and deep tissue stimulation. It helps in increasing blood flow, perfusion of tissue and helps in metabolism, absorbing essential nutritive materials and toxins are removed. It acts as a muscle relaxant, relieves pain, inflammation and also can rejuvenate the joints

and soft tissues, stops the degeneration and improves the circulation.(21)

Trayodashanga guggulu: It helps in lordosis, sciatica, lumbar spondylosis, promotes strength of bones and joints, an excellent Anti-inflammatory and Analgesic medicine.(11)

Panchamrit loha guggulu: It contains *Roupya* (Silver) and *Abhraka* (Mica) bhasma an excellent *vata shamak*, *majja Vardhaka rasayana*. Useful in (cervical spondylosis), *Manyastambha*, *Majja kshaya* symptoms. (12)

Vata gajankush ras: It balances *vata* and *kapha dosha*, helps in Cervical and Lumbar spondylosis, frozen shoulder and in all cases of stiffness.(13)

Capusle Cervilon: it mainly used in Cervical radiculopathy, Cervical myelopathy, sprain/spasm of the muscle in the cervical region.(14)

These Ayurveda medications offer a holistic approach to managing musculoskeletal conditions, targeting the root causes of pain, inflammation, and stiffness. By balancing the doshas and promoting overall well-being, they provide a complementary therapeutic option for patients seeking alternative or adjunctive treatment for conditions like cervical spondylosis.

Scope for further study

Conduct randomized controlled trials on large sample size and explore the potential of Ayurvedic medications in preventing disease progression and promoting long-term musculoskeletal health.

Conclusion

The people are now having awareness and concern about side effects and after effects of long-term usage of NSAIDS and showing solicitude towards *panchakarma* to fulfil their deeds. Ayurveda mainly focus on root cause of the disease as well as it is cost effective and relives in symptoms for long term. In the present study subjective and Objective parameters and clinical findings have been assessed before and after the treatment plan. The patient got 90% relief in the symptoms. Thus, *panchakarma* therapy along with combination of Ayurveda Internal formulations shows significant relief in *Manyastambha vyadhi*.

References

1. Kuo DT, Tadi P. Cervical Spondylosis. InStatPearls [Internet] 2019 Nov 26. StatPearls Publishing. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK551557/>.
2. Wang C, Tian F, Zhou Y, He W, Cai Z. The incidence of cervical spondylosis decreases with aging in the elderly, and increases with aging in the young and adult population: a hospital-based clinical analysis. Clin Interv Aging [Internet]. 2016 Jan 12 [cited 2024 Apr 4];11:47–53. Available from: <https://pubmed.ncbi.nlm.nih.gov/26834465/>
3. Sushruta Samhita, e-Samhita - National Institute of Indian Medical Heritage [Internet]. [cited 2024 Apr 4] Nidana Sthana, Chapter 1, Verse 67.

Available from: <https://niimh.nic.in/ebooks/esushruta/?mod=read>

4. Sushruta Samhita, Nidana Sthana, e-Samhita - National Institute of Indian Medical Heritage [Internet]. [cited 2024 Apr 4] Chapter 1, Verse 8-9. Available from: <https://niimh.nic.in/ebooks/esushruta/?mod=read>
5. Charaka Samhita, -11e-Samhita - National Institute of Indian Medical Heritage [Internet]. [cited 2024 Apr 4]. Sutra Sthana, Chapter 20, Verse 9 Available from: <https://niimh.nic.in/ebooks/ecaraka/?mod=read>
6. Priyanka S Thakur, Ayurveda review on vata vyadhi, management of Pakshavadha, Ekangavata, Sarvangavata and Ardita, International Journal of AYUSH [Internet].vol 12 No.01 2023
7. Shree Brhama Shankar Mishra. Bhavaprakash. Madhyam Khand, Vata Vyadhi 24/77. 2nd Edn. Varanasi: Vidyotani Hindi Vykhyan, Chowkhamba Sanskrit Bhawan; 2016.
8. Fulzele A V, Ingle NM. Management Of Cervical Spondylosis Through Ayurvedic Intervention-A Case Study. [cited 2024 Apr 4]; Available from: www.wjpr.net
9. Sachin Pandurang Kale, Vd R. D. Sonwane. Published by IAMJISSN 23205091. - Yahoo India Search Results [Internet]. [cited 2024 Aug 28]. Available from: <https://in.search.yahoo.com/search?fr=mcafee&type=E210IN826G0&p=Vd.+Sachin+Pandurang+Kale%2C+Vd+R.+D.+Sonwane.+Published+by+IAMJISSN+23205091.>
10. Charaka Samhita, e-Samhita - National Institute of Indian Medical Heritage [Internet]. [cited 2024 Apr 4]. Siddhi Sthana, Chapter 1, Verse 25 Available from: <https://niimh.nic.in/ebooks/ecaraka/?mod=read>
11. Rathod HS, Sawant RS. Evaluation Of Efficacy Of Trayodashang Guggulu In Management Of Cervical Spondylosis (Manyagata Vata). Journal of Biological & Scientific Opinion. 2013 Sep 14;1(2):65–9.
12. Negi V, Singh R, Chandla A, Sharma O, Sharma S, Rana R, et al. Efficacy of Ayurveda formulations, Panchamrit Lauha Guggulu and Panchguna Taila in the management of Cervical Spondylosis (Greevagraha): A prospective single-arm clinical trial. Journal of Research in Ayurvedic Sciences [Internet]. 2022 [cited 2024 Aug 28];6(4):152. Available from: https://www.researchgate.net/publication/366065063_Efficacy_of_Ayurveda_formulations_Panchamrit_Lauha_Guggulu_and_Panchguna_Taila_in_the_management_of_cervical_spondylosis_Greevagraha_A_prospective_single-arm_clinical_trial
13. Bhaishajya Ratnavali Govind Das Sen : Govind Das Sen : Free Download, Borrow, and Streaming : Internet Archive [Internet]. Vatavyadhi adhikara, verse 488-492 [cited 2024 Aug 28]. Available from: <https://archive.org/details/bhaishajya-ratnavali-govind-das-sen/page/n5/mode/2up>
14. Sudharameshwari.K, Mareeshwari.K, Singaravavelu.R, Standardisation Of Polyherbal

- Drugs-Cervilon And Lumbaton Capsules, International Journal of Ayurveda and Pharma Research, June 2017 | Vol 5 | Issue 6.
15. Charaka Samhita.e-Samhita - National Institute of Indian Medical Heritage [Internet]. [cited 2024 Apr 4]. Sutra Sthana, Chapter 22, Verse 11 Available from: <https://niimh.nic.in/ebooks/ecaraka/?mod=read>
 16. Lina Karande, Evaluation of the Effect of Manyabasti and Sarvangatailadhra in Manyagata vata (Cervical Spondylosis), STM Journals [Internet], volume-1, issue-3. [cited 2024 Apr 5]. Available from: https://www.researchgate.net/publication/343681991_Evaluation_of_the_Effect_of_Manyabasti_and_Sarvangatailadhra_in_Manyagata_vata_Cervical_Spondylosis
 17. View of Ayurvedic Panchakarma Management of Avabahuka - A Case Report [Internet]. [cited 2024 Apr 4]. Available from: <https://www.ijam.co.in/index.php/ijam/article/view/3560/1181>
 18. Minu Yadav, Conceptual Study on Kukkutanda Pinda Sweda: A Review Article [Internet]. [cited 2024 Apr 5]. Available from: https://www.researchgate.net/publication/348416654_Conceptual_Study_on_Kukkutanda_Pinda_Sweda_A_Review_Article
 19. Charaka Samhita, e-Samhita - National Institute of Indian Medical Heritage [Internet]. [cited 2024 Apr 4]. Sutra Sthana, Chapter 14, Verse 26-27 Available from: <https://niimh.nic.in/ebooks/ecaraka/?mod=read>
 20. Sushruta Samhita, e-Samhita - National Institute of Indian Medical Heritage [Internet]. [cited 2024 Apr 4]. Chikitsa Sthana, Chapter 24, Verse 30, Available from: <https://niimh.nic.in/ebooks/esushruta/?mod=read>
 21. Batwe Amruta, Kulkarni Savita, View of Action Modality of Kukkutanda Pinda Sweda on ArditaVyadhi: Case Series [Internet]. Vol-2, published on may/4/23[cited 2024 Apr 5]. Available from: <https://airjata.org/index.php/airjata/article/view/142/63>.
