

An Ayurvedic Management of Tennis Elbow-a Case Study

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Case Report

Keywords: Keywords: Tennis Elbow, Ayurvedic management, Patient Rated Tennis Elbow Evaluation Scale (PRTEE), Bahya Chikitsa (External Therapy), Shamanaushadhi (Oral medications).

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TITLE PAGE

TITLE: “AN AYURVEDIC MANAGEMENT OF TENNIS ELBOW -A CASE STUDY”

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ABSTRACT

Background: Tennis Elbow which is known as Lateral Epicondylitis is a clinical condition characterized by Pain, Swelling and Difficulty to grip or lift the objects, which results from repetitive stress. Recent statistical studies globally attribute 01% to 03 % of adults each year and in India 1-3% with in general population annually and 04-07 cases of Tennis Elbow per 1000 patients in general practice.

Aims and Objectives: To assess the efficacy of *Ayurvedic* intervention in Tennis Elbow through *Bahya Chikitsa* and *Shamanaushadhi*.

Materials and Methods: A male subject aged 40 years, Badminton sports Coach in occupation, Non-Diabetic, Non-Hypertensive, with no history of Surgery and Trauma approached *Kayachikitsa* OPD with chief complaints of Pain and Swelling in Bilateral Elbow Joints since 6 months, associated with difficulty in lifting objects in Right Elbow Joint since 1 week. On Examination, Tenderness was Present (++) in Right Elbow Joint along with Swelling. Patient Rated Tennis Elbow Evaluation Scale (PRTEE) revealed Total Score of 76. *Ayurvedic* management by means of *Bahya Chikitsa* (External Therapy) and *Shamanaushadhi* (Oral medications) were adopted for a period of 45 days along with dietary measures.

Results and Conclusion: The subject showed satisfactory and remarkable improvement in signs and symptoms after the treatment without any adverse drug reaction and post treatment PRTEE was suggestive of Total Score 20.

KEYWORDS

Keywords: Tennis Elbow, *Ayurvedic* management, Patient Rated Tennis Elbow Evaluation Scale (PRTEE), *Bahya Chikitsa* (External Therapy), *Shamanaushadhi* (Oral medications).

MAIN TEXT

INTRODUCTION

Tennis Elbow commonly known as Lateral Epicondylitis is characterized by Pain and Swelling on the lateral side of the Elbow along with difficulty in gripping and lifting objects, that results from repetitive stress¹.

Recent statistical studies in India attributes 1-3% with in general population annually and 4-7 cases of Tennis Elbow per 1000 patients in general practice. And globally it attributes 1% to 3 % of adults each year². The highest incidence is found in the age group 30 and older³.

Almost more than one-third of Tennis players worldwide are affected with this condition over the age of 30 years due to faulty playing techniques. Also, it is more common in non-Tennis players and non-sports group of people like Computer professionals, Homemakers (Indian housewives), Painters, Miners, Drill workers, Carpenters etc. as these jobs involve repetitive extension of elbow joint which causes stress and trauma⁴.

The Conservative management comprises of oral analgesics, steroidal injections, local anesthetic injections which are useful only in 40% of cases and about 10% may respond to Mill's Manoeuvre, where as other subjects requires Surgical management⁵.

Swedana (Sudation therapy) is one among the best Pain management therapies among *Bahya Chikitsa* (External Therapy) emphasized in ayurvedic classics. It plays a vital role in managing Tennis elbow as Acharya Charaka quotes *Swedana* is the procedure which nullifies Stiffness, Coldness, Heaviness and generates Sweat. Physiologically *Swedana* is a thermoregulatory process and therapeutically a procedure to eliminate bio waste material from the body by generation of direct or indirect heat relieving pain, swelling and stiffness⁶.

Thus, the present study is aimed at incorporating *Devadaru Valuka Sweda* (application of Heat by using heated pack of sand mixed with *Devadaru Churna* and there by inducing perspiration) and *Shamanaushadhi* (Oral medication) which have properties of alleviating Pain, Swelling, Stiffness and Restricted movement as it possesses *Ushna Guna* (Hot in nature), *Amahara* (corrects Metabolism), *Shotha-Shoolahara* (mitigates Swelling and relieves Pain), *Stambhahara* (relieves Stiffness) properties in the management of Tennis elbow.

AIMS AND OBJECTIVES:

- To assess the combined efficacy of *Ayurvedic* management in Tennis Elbow through *Bahya Chikitsa* and *Shamanaushadhi*.

MATERIALS AND METHODS

CASE STUDY

A male subject aged 40 years, Badminton sports Coach in occupation, Non-Diabetic, Non-Hypertensive, with no history of Surgery and Trauma approached *Kayachikitsa* OPD with chief complaints of Pain and Swelling in Bilateral Elbow Joints since 6 months, associated with difficulty in lifting objects in Right Elbow Joint since 1 week. On Examination, Tenderness was Present (++) in Right Elbow Joint along with Swelling. Patient Rated Tennis Elbow Evaluation Scale (PRTEE) revealed Total Score of 76.

Outcome Measures

- **Primary Outcome measures:** Improvements noticed in Reduction in Pain and Swelling based on Patient Rated Tennis Elbow Evaluation Scale (PRTEE).
- **Secondary Outcome measures:** Improvements noticed in Visual Analogue Scale (VAS) and Verbal Rating Scale (VRS).

Chief Complaints and Associated complaints with Duration

TABLE 1: Chief Complaints and Associated complaints with Duration

Chief Complaints and Associated complaints	Duration
1. Pain in Bilateral Elbow Joints	06 Months
2. Swelling in Bilateral Elbow Joints	06 Months
3. Difficulty in Lifting Objects in Right Elbow Joint	01 week

History of Past Illness

- a. **History of Major Illness:** No history of Diabetes mellitus, Hypertension, Hypothyroidism or any other illness.
- b. **History of Medication:** Analgesics for 01 month initially, then only when pain aggravates for 03 months, NSAID's for 15 days.
- c. **History of Surgery:** No history of any surgery.
- d. **History of Trauma:** No history of fall or trauma.

Examination

Ashta Sthana Pariksha with *Vata-Kaphaja Nadi*, and other attributes were *Prakruta* (Normal).

General Examination was intact. **Systemic Examination:** Cardiovascular System, Respiratory System, Central Nervous System, Gastro Intestinal System, Integumentary System, Uro-Genital System- **Intact**

TABLE 2: Musculoskeletal System Examination

Inspection	GALS- INTACT Affected Joint- Bilateral Elbow Joints Swelling ++, Scar, Discoloration, Ulcer, Deformity-Absent
Palpation	Tenderness ++ in Bilateral Elbow Joint
Range of Movements	Flexion and Extension- Painful in Left Elbow Joint Flexion and Extension-Painful and slightly Restricted in Right Elbow Joint
Special Tests	Cozen's Test- Positive Mauldey's Test- Positive

Assessment Criteria

Assessment based on Signs and Symptoms with VAS, VRS and PRTEE.

1. PAIN

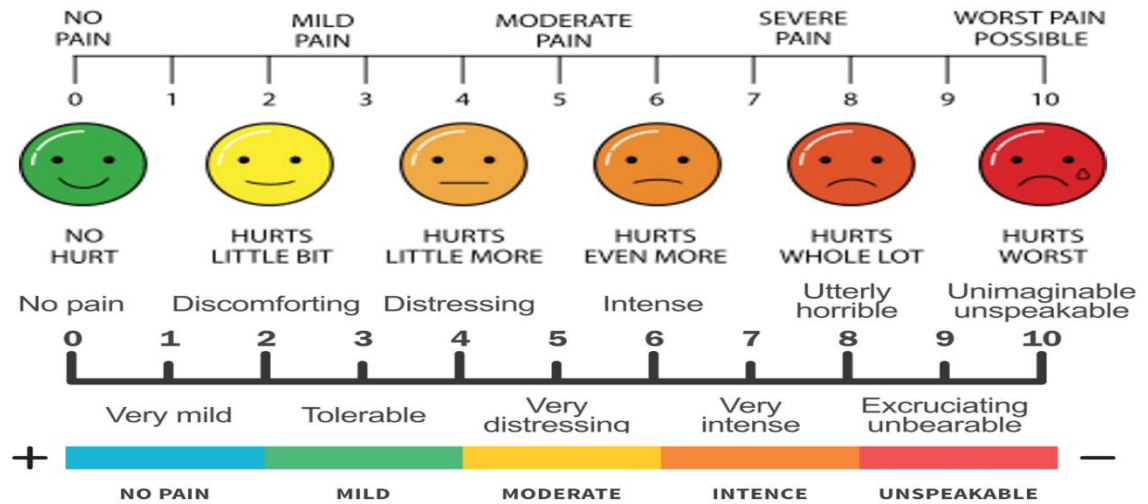


FIGURE 1- Universal Visual Analogue Scale

2. SWELLING

TABLE 3: Verbal Rating Scale

SL No	GRADE	SWELLING
1	None/Absent	No visible or palpable swelling.
2	Slight/Mild	Minimal, noticeable swelling but with minimal distortion of the area.
3	Moderate	Clearly visible and palpable swelling with noticeable distortion.
4	Severe	Gross distortion of the area and significant swelling

3. Patient Rated Tennis Elbow Evaluation Scale (PRTEE)

PATIENT-RATED TENNIS ELBOW EVALUATION

Name _____ Date _____

*The questions below will help us understand the amount of difficulty you have had with your arm in the past week. You will be describing your **average** arm symptoms **over the past week** on a scale 0-10. Please provide an answer for all questions. If you did not perform an activity because of pain or because you were unable, then you should circle a "10". If you are unsure please estimate to the best of your ability. Only leave items blank if you never perform that activity. Please indicate this by drawing a line completely through the question.*

1. PAIN in your affected arm										
<i>Rate the average amount of pain in your arm over the past week by circling the number that best describes your pain on a scale from 0-10. A zero (0) means that you did not have any pain and a ten (10) means that you had the worst pain imaginable.</i>										
RATE YOUR PAIN:										
	No Pain									Worst Imaginable
When your are at rest	0	1	2	3	4	5	6	7	8	9 10
When doing a task with repeated arm movement	0	1	2	3	4	5	6	7	8	9 10
When carrying a plastic bag of groceries	0	1	2	3	4	5	6	7	8	9 10
When your pain was at its least	0	1	2	3	4	5	6	7	8	9 10
When your pain was at its worst	0	1	2	3	4	5	6	7	8	9 10

FIGURE 2. a: PRTEE SCALE

2. FUNCTIONAL DISABILITY											
A. SPECIFIC ACTIVITIES											
<i>Rate the amount of difficulty you experienced performing each of the tasks listed below, over the past week, by circling the number that best describes your difficulty on a scale of 0-10. A zero (0) means you did not experience any difficulty and a ten (10) means it was so difficult you were unable to do it at all.</i>											
	No Difficulty Unable To Do										
Turn a doorknob or key	0	1	2	3	4	5	6	7	8	9	10
Carry a grocery bag or briefcase by the handle	0	1	2	3	4	5	6	7	8	9	10
Lift a full coffee cup or glass of milk to your mouth	0	1	2	3	4	5	6	7	8	9	10
Open a jar	0	1	2	3	4	5	6	7	8	9	10
Pull up pants	0	1	2	3	4	5	6	7	8	9	10
Wring out a washcloth or wet towel	0	1	2	3	4	5	6	7	8	9	10
B. USUAL ACTIVITIES											
<i>Rate the amount of difficulty you experienced performing your usual activities in each of the areas listed below, over the past week, by circling the number that best describes your difficulty on a scale of 0-10. By "usual activities", we mean the activities that you performed before you started having a problem with your arm. A zero (0) means you did not experience any difficulty and a ten (10) means it was so difficult you were unable to do any of your usual activities.</i>											
1. Personal activities (dressing, washing)	0	1	2	3	4	5	6	7	8	9	10
2. Household work (cleaning, maintenance)	0	1	2	3	4	5	6	7	8	9	10
3. Work (your job or everyday work)	0	1	2	3	4	5	6	7	8	9	10
4. Recreational or sporting activities	0	1	2	3	4	5	6	7	8	9	10
Comments:											

FIGURE 2. b: PRTEE SCALE

Scoring Instructions

Minimize non-response by checking forms when patients complete them. Make sure that the patient left an item blank because they could not do it, that they understand that should have recorded this item as a "10". If patients are unsure because they have rarely performed an activity in the past week, then they should be encouraged to estimate their average difficulty. This will be more accurate than leaving it blank. If they never perform an activity they will not be able to estimate and should leave it blank. If items from a subscale are left blank, then you can substitute the average score from that subscale.

Pain Subscale- Add up 5 items.	Best score= 0; Worst score =50
Specific Activities- Add up 6 items	Best Score= 0; Worst Score = 60
Usual Activities – Add up 4 items items	Best Score= 0; Worst Score = 40
Function Subscale- (Specific Activities + Usual Activities)/2-	Best score= 0; Worst score =50
<u>Total Score = Pain Subscale + Function Subscale</u>	<u>Best Score= 0 Worst Score = 100</u> (pain and disability contribute equally to score)

Reliability of subscales and total score are sufficiently high that both subscales and total are reportable.

FIGURE 2. c: PRTEE SCALE

NIDANA PANCHAKA

- A. **Nidana (Etiology):** Excessive and faulty playing techniques of Badminton sports.
- B. **Poorvaroopa** (Premonitory signs and symptoms): Nothing Specific.
- C. **Roopa** (Signs and Symptoms): *Ruja* (Pain) and *Shotha* (Swelling) in Bilateral Elbow Joints, difficulty in lifting objects in Right Elbow Joint.
- D. **Samprapti (Pathophysiology):** *Nidana Sevana* (Above mentioned Etiology) → *VataPrakopa* (vitiation of *Vata and Kapha Dosha*) → *Sthana Samshraya* (gets lodged) to *Ubhaya Kurpara Sandhi* (bilateral Elbow Joints) → leading to above mentioned signs and symptoms.
- E. **Upashaya – Anupashaya** (Aggravating and Relieving factors): Aggravates during and after playing Badminton. Relives on Rest.

TREATMENT PLAN

- **Bahya Chikitsa (External Therapy)-** *Sthanika Swedana* (local sudation therapy) to bilateral Elbow joints with *Devadaru Valuka Sweda* for 07 days.

PROCEDURE

Preparation of the Sand Packs

- The cotton cloth of size 18 inches square was spread on the working table.
- 50 grams of *Valuka Churna* (fine sand) and 50 grams of *Devadaru Churna* (Fine *Rasna* Powder) was mixed and placed on the center of the cloth. Then the cotton cloth was tied completely covering the *Devadaru Valuka Churna* to form a rounded pack which was stiff. Then the free end of the cloth is folded and tied to form a handle.

Heating the Packs

- The sand of about 1500 grams was taken in a wide mouth vessel having rounded bottom. Then it was placed on the stove and heated.

- When the sand in the vessel was properly heated, the *Devadaru Valuka Churna* packs were placed for heating for a desired considerable duration so that not only the surface of packs, but the whole of the sand pack was heated.
- Thus, the sand packs were ready for applying the heat to affected part i.e Bilateral Elbow Joints.

Application of the Heat to affected Right Elbow Joint

- Before beginning the procedure, has confirmed the temperature in the sand pack by touching it on the dorsum of the hand, so that it is tolerable by the subject.
- Then started the *Devadaru Valuka Swedana* procedure as follows for 20-30 minutes:
 1. Momentarily touching the sand pack on the bilateral Elbow Joints.
 2. Moving the sand pack over the bilateral Elbow joints.
 3. Placing the sand pack over and beneath the bilateral Elbow joints.

Observation of the subject

- *Devadaru Valuka Swedana* procedure was keenly observed for the *Samyak Swinna Lakshana* (symptoms indicative of proper effect of Sudation therapy) and stopped once the subject attained it.
- Subject was asked to take rest for 05-10 minutes and the bilateral Elbow Joints treated with sand pack was washed with warm water after the procedure.

Precautions

There was a risk of causing burns during the procedure, thus every care has been taken to prevent overheating.

TABLE 4: Shamanaushadhi (Oral medications)

1. <i>Nirgundi Guggulu</i>	1-1-1 (1 tab of 250 mg each) after food for 30 days
2. <i>Rasna Erandadi Kashaya</i>	15ml-15ml-15ml with 30 ml Warm water after food for 30 days

TABLE 5: Follow up medications

1. <i>Nirgundi Guggulu</i>	1-0-1 after food for 60 days
2. <i>Rasna Erandadi Kashaya</i>	15ml-0-15ml with 30 ml Warm water after food for 60 days

Pathya- Apathya (Dietary Measures)

Pathya (Diet to be consumed)- Rice, Barley, Wheat, Green gram, Bitter gourd, Ash Gourd, Carrot, Beetroot, Onion, Garlic, Beans, Apple, Pomegranate, Buttermilk, Ghee.

Apathya (Diet to be avoided)- Junk food, Bakery food, Packed Food, Fried food, Leftover food, Potato, Brinjal, Sprouts, Curd.

OBSERVATION AND RESULTS**TABLE 6: Assessment Before, During and After treatment**

SL No.	Assessment Criteria	Before Treatment	During Treatment (Mid phase)	After Treatment	After Follow up of 15 days
1	PAIN by VAS	08	04	02	02
2	SWELLING by VRS	06	04	02	00
3	PRTEE	76	42	20	04

DISCUSSION

The case was diagnosed as Tennis Elbow based on signs and symptoms exhibited by the subject and treated by means of *Bahya Chikitsa* (External Therapy) and *Shamana chikitsa* (Mitigation Therapy-Oral Medications).

Bahya Chikitsa (External Therapy) by *Devadaru Valuka Sweda* (application of Heat by using heated pack of sand mixed with *Rasna Churna* and there by inducing perspiration) was adopted.

*Valuka Sweda*⁷ was selected for the present study being a potent *Vata-Kapha hara* (mitigates *Vata* and *Kapha dosha*), *Shoolahara* (relives Pain), *Shothahara* (relives Swelling) *Srotomardavakara* (clears obstruction in channels) and *Pavakam* (corrects Metabolism).

*Devadaru Choorna*⁸ is selected as it possesses *Tikta* (Bitter taste), *Katu* (Pungent taste), *Kashaya Rasa* (Astringent taste), *Laghu guna* (Light in nature), *Ushna veerya* (Hot potency), *Katu Vipaka* (Pungent in post digestive effect), *Vata-Kaphahara* (mitigates *Vata* and *Kapha dosha*), *Shophahara* (mitigates Swelling), *Vibandhahara* (relives constipation), *Amadoshahara* (corrects metabolism).

*Nirgundi Guggulu*⁹ comprises of *Nirgundi* and *Guggulu* was selected as it possesses property of *Vatarogahara* (Alleviates all kinds of *Vataja* diseases).

*Nirgundi*⁸ possess *Katu Tikta rasa* (Bitter and Pungent taste), *Laghu guna* (Light in nature), *Ushna veerya* (Hot potency) and *Katu Vipaka* (Pungent in post digestive effect), *Vata Kaphahara* (mitigates *Vata* and *Kapha dosha*), *Shoolanashana* (relives Pain), *Shophahara* (mitigates Swelling) and *Amahara* (corrects Metabolism) properties.

*Guggulu*⁸: “*Guggulu medoanilaharanam shreshtaha*” (best in mitigating diseases of *Vata dosha* and *Medo dhatu*), possess *Tikta Katu rasa* (Bitter and Pungent taste), *Laghu*, *Vishada*, *Sookshma*, *Sara*, *Snigdha*, *Picchila guna* (Light, clearing/purifying the structures, penetrating, which have capacity to move/flow, unctuous and adhesive in nature), *Ushna veerya* (Hot potency), *Katu Vipaka* (Pungent in post digestive effect), *Tridoshahara* (mitigates all three *Dosha-Vata*, *Pitta* and *Kapha*), *Shotahara* (mitigates Swelling), *AmaMarutahara* (corrects metabolism and alleviates all *Vata* diseases, mitigates *Amavata* disorder) and *Rasayana* (Rejuvenating in nature) properties.

*Rasnaerandadi Kashaya*¹⁰ (*Rasna, Eranda, Bala, Sahachara, Shatavari, Dusparsha, Vasa, Amruta, Devadaru, Ativisha, Musta, Kokilaksha, Shati, Shunti*) was selected as it possesses *Vatahara* (mitigating *Vata dosha*), *Shoolahara* (relives Pain), *Shophahara* (mitigates Swelling) and *Vataraktahara* (mitigates *Vatarakta* disorder) properties.

CONCLUSION

In the present case study, a male patient of age 40 years diagnosed as case of Tennis Elbow was treated successfully by means of potent *Ayurvedic* external therapy and oral medications. The subject showed significant improvement without any Adverse Drug Reactions, demonstrating the effectiveness of *Ayurvedic* treatment modalities in managing such painful relapsing condition. Further studies should be adopted in a larger scale to statistically prove the efficacy of treatment protocol.

ETHICAL CONSIDERATIONS

*The study has been approved by the Ethical Committee with number SDMIAH/IEC/40/2022

CONFLICTS OF INTEREST AND FUNDING SOURCES

*There are no Conflicts of Interest and funding resources.

CONSENT

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

DECLARATION OF AI USE

This manuscript was prepared through the intellectual contributions of the author(s) to the study design, data analysis, interpretation of results, and scholarly content. The author(s) accept full responsibility for the accuracy, integrity, and final content of the manuscript.

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