

Ayurvedic Management of Duchenne Muscular Dystrophy in a Child: A Case Report

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Patient identity: The patient's name, hospital numbers, address, and other direct identifiers have been removed from this manuscript in accordance with the journal guidance.

Ethics/consent: Written informed consent from the parent/guardian was obtained, along with signatures and permissions regarding publications and photographs.

Abstract

Duchenne muscular dystrophy (DMD) is a progressive X-linked dystrophinopathy marked by proximal muscle weakness, gait disturbance, and eventual multisystem involvement, for which no curative Ayurvedic or modern therapy currently exists. This report presents a 9-year-old boy with genetically confirmed DMD (hemizygous deletion, exons 46–48) and markedly elevated serum creatine phosphokinase, who presented with recurrent falls, waddling gait, Gower's and Valley signs, and calf pseudohypertrophy. The condition was interpreted through an Ayurvedic lens as *Beejadushti*-associated *Vata* predominance with *Mamsa Dhatu* and *Mamsavaha Srotas* involvement, and *Kapha-Meda* contribution to pseudohypertrophy. Across seven admissions over approximately 21 months, supportive management combining *Sneha*, *Swedana*, *Basti*, *Nasya*, and physiotherapy was administered. Parents reported reduced fall frequency, while proximal weakness and stair-climbing difficulty persisted; upper-limb power improved while lower-limb power remained stable. The case illustrates feasibility of integrative supportive care in paediatric DMD without establishing disease-modifying efficacy.

Keywords: Duchenne muscular dystrophy; *Ayurveda*; *Mamsavaha Srotas*; *Vata*; *Basti*

Introduction

Duchenne muscular dystrophy is an X-linked dystrophinopathy caused by pathogenic variants in the DMD gene and is characterized by progressive skeletal muscle weakness with later multisystem involvement.^[1] The disorder predominantly affects boys and commonly becomes clinically apparent during early childhood.^[2] Typical manifestations include delayed motor development, difficulty running or climbing stairs, frequent falls, Gower's sign, waddling gait, and calf pseudohypertrophy.^[3] As the disease progresses, contractures, scoliosis, respiratory muscle weakness, and cardiomyopathy may develop. Contemporary care therefore emphasizes early diagnosis,

corticosteroid therapy when appropriate, rehabilitation, orthopedic care, and regular cardiac and respiratory surveillance.^[4]

The present case was clinically and genetically established as DMD, with a markedly elevated serum creatine phosphokinase concentration and a hemizygous deletion involving exons 46–48 of the DMD gene. The *Ayurvedic* case assessment interpreted the hereditary genetic defect as *Beejadushti/Beejabhaga Avayava Dushti* and the clinical phenotype predominantly through *Vata Dosha*, *Mamsa Dhatu*, and *Mamsavaha Srotas*, with *Kapha-Meda* involvement used to explain calf pseudohypertrophy.^[5]

Case report:

The child presented with progressive difficulty rising from sitting, climbing stairs, loss of strength, and recurrent falls. Examination showed waddling gait, toe walking, lumbar hyperlordosis, bilateral calf pseudohypertrophy, left equinovarus deformity, and positive Gower's and Valley signs.

Serum creatine phosphokinase was 10,592 U/L, and genetic testing demonstrated a hemizygous deletion involving exons 46–48 of the DMD gene. The *Ayurvedic* assessment considered *Beejadushti* as the primary etiological factor, with *Vata* predominance, secondary *Kapha* involvement, *Mamsa* as the principal *Dushya*, and involvement of *Rasavaha*, *Mamsavaha*, *Medovaha*, and *Asthivaha Srotas*. Latest Management included *Dhanyamala Dhara/Parisheka* or *Abhyanga* with *Bala-Ashwagandhadi Taila*, *Rajayapana Basti* or *Matra Basti* with *Samvardhana Ghrita*, physiotherapy, and *Vestana* with *Murivenna Taila*. After the preceding *Ayurvedic* admission, the parents reported a reduction in falls, while proximal weakness and stair-climbing difficulty remained largely unchanged. The case illustrates an integrative supportive approach.

Introduction

Duchenne muscular dystrophy is an X-linked dystrophinopathy caused by pathogenic variants in the DMD gene and is characterized by progressive skeletal muscle weakness with later multisystem involvement.^[1] The disorder predominantly affects boys and commonly becomes clinically apparent during early childhood.^[2] Typical manifestations include delayed motor development, difficulty running or climbing stairs, frequent falls, Gower's sign, waddling gait, and calf pseudohypertrophy.^[3] As the disease progresses, contractures, scoliosis, respiratory muscle weakness, and cardiomyopathy may develop. Contemporary care therefore emphasizes early diagnosis, corticosteroid therapy when appropriate, rehabilitation, orthopedic care, and regular cardiac and respiratory surveillance.^[4]

The present case was clinically and genetically established as DMD, with a markedly elevated serum creatine phosphokinase concentration and a hemizygous deletion involving exons 46–48 of the DMD gene. The *Ayurvedic* case assessment interpreted the hereditary genetic defect as *Beejadushti/Beejabhaga Avayava Dushti* and the clinical phenotype predominantly through *Vata Dosha*, *Mamsa Dhatu*, and *Mamsavaha Srotas*, with *Kapha-Meda* involvement used to explain calf pseudohypertrophy.^[5]

DMD has no curative *Ayurvedic* treatment^[6] established by controlled clinical evidence. Accordingly, the therapeutic intent in this case was supportive and palliative: preservation of functional capacity, maintenance of joint mobility, reduction of symptoms, and prevention or delay of secondary musculoskeletal disability. The purpose of reporting the case is to document the clinical reasoning,

Ayurvedic assessment, treatment protocol, and observed short-term course without implying cure or definitive efficacy.

Materials and Methods:

Study design and setting: This was a single-patient descriptive case report from the Department of Kaumarabhritya, SDM *Ayurvedic* College, Hospital and Research Centre, Udupi, Karnataka, India. The case

presentation records admission from October 2024 to August 2026 and subsequent return for the seventh sitting of *Ayurvedic* management.

Case selection and data collection: Clinical history, developmental history, *Ayurvedic Roga Pareeksha* and *Rogi Pareeksha*, general and local examination, anthropometry, systemic examination, musculoskeletal examination, laboratory findings, and previous treatment history were extracted from the case presentation. Direct identifiers and hospital numbers have intentionally been omitted from this manuscript.

Diagnostic assessment: The modern diagnosis was based on the documented clinical phenotype, markedly elevated CPK of 10,592 U/L, and genetic testing showing a hemizygous deletion involving exons 46–48 of the DMD gene. The *Ayurvedic* assessment recorded *Beejadushti* as *Nidana*, recurrent falls as *Purvarupa*, *Cheshtahani* and *Balahani* with *Katipradesha Vakra* as *Rupa*, *Vata-pacifying Ahara-Vihara* as *Upashaya*, and night wakefulness, excessive exertion and daytime sleep as *Anupashaya*. The recorded *Samprapti* emphasized *Beejabhaga Avayava Dushti*, *Vata* vitiation, *Dhatvagni Mandya*, *Ama*, *Srot orodha*, and *Kapha Avarana* of *Vyana Vayu*.



Consent Documentation
For the case report: "Ayurvedic Management of Duchenne Muscular Dystrophy in a Child: A Case Report"

Written Informed Consent Form (Parent/Legal Guardian) for Publication of a Case Report

1. Title of the case report

Ayurvedic Management of Duchenne Muscular Dystrophy in a Child: A Case Report

2. Investigators

Dr. Amarnath Siddharam Dunage, 1st Year M.D. (Ayu) P.G. Scholar, Dr. Prathviraj Puranik, M.D. (Ayu), PhD, Professor and HOD, Department of P.G. Studies in Kaumarabhritya, Sri Dharmasthala Marjunatheshwara College of Ayurveda, Kuthpady, Udipi - 574118.

3. Explanation to the parent/guardian (to be read aloud or given to the parent/guardian before signing)

- Your child was examined and treated at the Department of Kaumarabhritya, SDM Ayurvedic Hospital, Udipi, for Duchenne Muscular Dystrophy (DMD).
- We would like to publish the clinical findings, investigations, and the Ayurvedic treatment given, along with the outcome, as a scientific case report in a medical/Ayurveda journal, so that other doctors and researchers can learn from this case.
- Your child's name, address, hospital/registration number, and any other information that could directly identify your child will NOT be published.
- Laboratory reports, examination findings, and treatment details will be described, but every reasonable effort will be made to remove identifying details from these documents before use.
- If any photographs, videos, or clinical images of your child are used, they will be cropped or masked to prevent identification wherever possible; if a face or other identifying feature cannot be masked, we will show you the exact image before publication and take your separate, specific consent for that image.
- Participation in this publication is entirely voluntary. Declining to give consent will not affect your child's ongoing or future treatment at this hospital in any way.
- You may withdraw this consent at any time before the manuscript is published by informing the corresponding author in writing.
- Once the article is published, it may not be possible to withdraw or recall it, as it becomes part of the permanent scientific record.
- You are free to ask any questions about this case report before deciding whether to give consent.

4. Parent/Guardian Declaration

I, the undersigned, am the parent/legal guardian of the child described in this case report. I have read (or had read to me) and understood the explanation given above. I have had the opportunity to ask questions, and these have been answered to my satisfaction. I understand that my child's identity will be protected to the extent described above.

I give my consent for the clinical details, investigations, and treatment course of my child to be published as a case report in a medical/Ayurveda journal, for educational and scientific purposes.

Additional consent for clinical photographs/images (tick as applicable):

- ☒ I give consent for the use of clinical photographs/images as described above.
- ☐ I do NOT give consent for the use of any photographs/images; only written clinical description may be published.

Signature / Left thumb impression of Parent/Legal Guardian

Name of parent/guardian: Abdul Sheikh Relationship to child: Father

Address:

Kundapur, India

Date: 22/08/2026

Place: Udipi

5. Witness

Signature of Witness (independent, not part of the treating team)

Name of witness: Saiqa

Date:

22/08/2026

6. Investigator/Physician Certification

I certify that I have explained the nature and purpose of this publication, in a language understood by the parent/guardian, and that consent has been given freely and voluntarily.

Signature of Investigator (Dr. Amarnath Siddharam Dunage / Dr. Prathviraj Puranik)

Name: Dr. Amarnath Siddharam Dunage

Date: 22/08/2026

Designation:

MD Kaumarabhritya (first year)

Contact for questions or to withdraw consent

Dr. Amarnath Siddharam Dunage, Department of P.G. Studies in Kaumarabhritya, SDM College of Ayurveda, Kuthpady, Udipi - 574118. E-mail: amarnathdunage143@gmail.com. Telephone: 9158002250 / 9175160902.

Figure no 1 : valleys sign positive

Figure no 2,3 and 4 : gowers sign positive

Figure no 5 : calf pseudohypertrophy

Figure no 6 and 7 : knee jerk and ankle jerk reflexes exaggerated, spasticity present

Figure no 7 and 8 : consent documentation photographs/images

AYURVEDIC TREATMENT PROTOCOL

First Admission and Treatment Details

1. Admission

The child was admitted for Ayurvedic in-patient management from 11 October 2024 to 21 October 2024 (first admission, 11 days).

2. Oral Medications Administered During Admission

Sl. No.	Medicine	Dose	Frequency	Anupana / Method
1	Tab. Brihat Vata Chintamani (BVC) Plain	½ tablet	BD	Plain, with water
2	Tab. Brihat Vata Chintamani (BVC) Gold	½ tablet	BD	With honey
3	Ashwagandharishta	10 mL	BD	With equal quantity of water, after food

3. Panchakarma Procedures Administered During Admission

Sl. No.	Procedure	Formulation Used	Duration	Site
1	Udvertana	<i>Triphala Choorna</i>	3 days	Whole body
2	<i>Rajayapana Basti</i>	<i>Mamsa Rasa</i>	4 days	—
3	Matra Basti	<i>Sahacharadi Taila</i> (25 mL)	6 days	—
4	<i>Abhyanga f/b Shashtika Shali Pinda Sweda</i>	<i>Balashwagandhadi Taila</i>	7 days	Whole body
5	Veshtana (bandaging)	<i>Murivenna Taila</i>	7 days	Bilateral lower limbs
6	Physiotherapy	—	7 days	Bilateral lower limbs / trunk

4. Discharge Medications (Advised for One Month)

Sl. No.	Medicine	Dose	Frequency	Anupana / Method
1	<i>Tab. BVC Gold</i>	½ tablet	BD	With honey
2	<i>Balarishta + Ashwagandharishta</i>	1 tsp + 1 tsp	BD	With equal quantity of water
3	<i>Ajamamsa Rasayana</i>	1 tsp	BD	With milk
4	<i>Balashwagandha Laksha Taila</i>	Q.S.	For external application	Local application (abhyanga)

Follow-up was advised after one month of discharge medication.

Admission and Treatment Details – 2nd follow up (08 January 2025 – 15 January 2025)

1. Admission

The child was re-admitted for *Ayurvedic* in-patient management from 08 January 2025 to 15 January 2025.

2. Procedures Done During Admission

Sl. No.	Procedure	Formulation Used	Frequency/Duration	Site
1	<i>Dhanyamla Dhara</i> (Pariseka)	<i>Dhanyamla</i>	Alternate days	Whole body
2	<i>Sarvanga Abhyanga</i> f/b <i>Shashtika Shali Pinda Sweda</i>	<i>Balashwagandha Taila</i>	Alternate days	Whole body
3	<i>Yoga Basti – Rajayapana Basti</i> (80 mL) + <i>Matra Basti</i> (20 mL)	<i>Samvardhana Ghrita</i>	As per Basti schedule 3 rajyapana and 4 matra basti	—
4	<i>Veshtana</i> (bandaging)	<i>Murivenna Taila</i>	—	Bilateral lower limbs and both shoulder joints
5	Physiotherapy	—	—	Bilateral lower limbs

3. Medicines Advised on Discharge

Sl. No.	Medicine	Dose	Frequency	Anupana / Method
1	<i>Tab. BVC with Gold</i>	½ tablet	BD	—
2	<i>Cap. Ksheerabala Taila 101 Avartini</i>	1 capsule	BD	—
3	<i>Balashwagandharishta</i>	10 mL	BD	With equal quantity of water
4	<i>Samvardhana Ghrita</i>	1 tsp	At bedtime	—
5	<i>Kottamchukkadi Churna</i>	Q.S.	For external application	Applied locally over calf region

Instructions to patient: review and follow-up advised after one month.

Admission and Treatment Details — 3rd follow up (dated 01 April 2025 – 09 April 2025)

1. Clinical Findings and Anthropometry

Parameter	Finding
Gower's sign	Positive
Gait	Waddling
Posture	Lordotic
Weight	29 kg
Mid-arm circumference (MAC)	20.5 cm, bilateral
Mid-thigh circumference (MTC)	35 cm, bilateral
Mid-calf circumference (MCC)	28 cm, bilateral
Final diagnosis	Duchenne Muscular Dystrophy

2. Procedures Done During Admission

Sl. No.	Procedure	Formulation Used	Details
1	<i>Sarvanga Abhyanga f/b Shashtika Shali Pinda Sweda</i>	<i>Balashwagandha Taila</i>	Whole body
2	Physiotherapy	—	—
3	<i>Yoga</i>	—	Yogic exercises/postures
4	<i>Yoga Basti</i>	<i>Mustadi Rajayapana Basti</i> (100 mL) + <i>Matra Basti</i> with <i>Sahacharadi Taila</i> (20 mL)	As per Basti schedule: 3 days rajyapana basti and 4 days matra basti

3. Medicines Advised on Discharge

Sl. No.	Medicine	Dose	Frequency
1	<i>Brihat Vata Chintamani Rasa with Gold</i>	½ tablet	BD
2	<i>Samvardhana Ghrita</i>	1 tsp	HS (bedtime)
3	<i>Ajamamsa Rasayana</i>	1 tsp	BD
4	<i>Ashwagandha Tablet</i>	1 tablet	BD
5	<i>Hingvastaka Vati</i>	1 tablet	BD
6	<i>Balashwagandha Taila</i>	Q.S.	For external application

All discharge medications advised for one month

Instructions to patient: follow-up after one month.

4th Follow-up Admission — Treatment Details (dated 07 August 2025 – 13 August 2025)

1. Anthropometry and Diagnosis

Parameter	Finding
Weight	30.3 kg
Height	138 cm
Mid-arm circumference (MAC)	20.5 cm, bilateral
Mid-thigh circumference (MTC)	35 cm, bilateral
Mid-calf circumference (MCC)	29 cm, bilateral
Final diagnosis	Duchenne Muscular Dystrophy

2. Procedures Done During Admission

Sl. No.	Procedure	Formulation Used	Details
1	<i>Sarvanga Abhyanga f/b Shashtika Shali Pinda Sweda</i>	<i>Balashwagandha Taila</i>	Whole body
2	<i>Dhanyamla Dhara (Parisheka)</i>	<i>Dhanyamla</i>	Alternate days
3	<i>Veshtana (bandaging)</i>	<i>Murivenna Taila</i>	Bilateral upper limb, lower limb and shoulder joint
4	Physiotherapy	—	—
5	<i>Yoga</i>	—	Yogic exercises/postures
6	<i>Yoga Basti</i>	<i>Mustadi Rajayapana Basti</i> (100 mL) + <i>Matra Basti</i> with <i>Sahacharadi Taila</i> (20 mL)	As per Basti schedule: 3 days rajyapana basti and 4 days matra basti

3. Medicines Advised on Discharge

Sl. No.	Medicine	Dose	Frequency
1	<i>Ekanagaveera Rasa</i>	½ tablet	BD
2	<i>Samvardhana Ghrita</i>	1 tsp	HS (bedtime)
3	<i>Ajamamsa Rasayana</i>	1 tsp	BD
4	<i>Ashwagandha Tablet</i>	1 tablet	BD
5	<i>Hingvastaka Vati</i>	1 tablet	BD
6	<i>Balashwagandha Taila</i>	Q.S.	For external application

All discharge medications advised for one month. Treatment advised on discharge: none specified beyond the above. Instructions to patient: review and follow up after 1 month, on 13/8/2025 (per case sheet).

5th Follow-up Admission — Treatment Details (10 Oct 2025 – 17 Oct 2025)

1. Procedures Done During Admission

Sl. No.	Procedure	Formulation Used	Details
1	<i>Sarvanga Abhyanga f/b Shashtika Shali Pinda Sweda</i>	<i>Balashwagandha Taila</i>	Whole body
2	<i>Dhanyamla Dhara (Parisheka)</i>	<i>Dhanyamla</i>	Alternate days
3	<i>Veshtana (bandaging)</i>	<i>Murivenna Taila</i>	Bilateral upper limb, lower limb and shoulder joint
4	Physiotherapy	—	—
5	<i>Yoga</i>	—	Yogic exercises/postures
6	<i>Yoga Basti</i>	<i>Mustadi Rajayapana Basti</i> (100 mL) + <i>Matra Basti</i> with <i>Sahacharadi Taila</i> (20 mL)	As per Basti schedule: rajayapana basti for 3 days and matra basti for 4 days
7	<i>Katibasti</i>	<i>Dhanwantara Taila</i>	Lumbar (Kati) region

2. Medicines Advised on Discharge

Sl. No.	Medicine	Dose	Frequency	Method
1	<i>Brihat Vata Chintamani Rasa</i>	½ tablet	BD	—
2	<i>Samvardhana Ghrita</i>	1 tsp	BD	With milk
3	<i>Cap. Ksheerabala</i>	1 capsule	BD	—
4	<i>Ashwagandhadi Lehyam</i>	1 tsp	BD	—
5	<i>Balashwagandha Taila</i>	Q.S.	For external application	Local application

All discharge medications advised for one month.

Instructions for the patient: review and follow up after 1 month.

3. Contents and Therapeutic Rationale of New Medicines/Procedures

Sarvanga Abhyanga with *Balashwagandha Taila* f/b *Shashtika Shali Pinda Sweda*, *Dhanyamla Dhara*, *Veshtana* with *Murivenna Taila*, *Yoga*, *Yoga Basti* (*Mustadi Rajayapana* + *Sahacharadi Matra Basti*), *Brihat Vata Chintamani Rasa*,

Samvardhana Ghrita and *Cap. Ksheerabala* all follow the same formulations and rationale already described in the earlier admission summaries. *Katibasti* with *Dhanwantara Taila* and *Ashwagandhadi Lehyam* are new to this admission.

3.1 *Katibasti* with *Dhanwantara Taila*

A localised pooling procedure (*Basti* in the generic sense of “retaining”, not an enema here) in which warm *Dhanwantara Taila* is held within a dough-dam over the lumbar (*Kati*) region for a set duration. *Dhanwantara Taila* is a classical multi-herb sesame-oil preparation (*Ashtanga Hridaya/Sahasrayoga*, built around *Bala Moola*, *Dashamula* and related Vata-pacifying, tissue-nourishing herbs), classically indicated for *Vata Vyadhi* affecting muscle, bone and nerve. Actions: *Vatahara*, *Vatanulomana* and *Brimhana* (strengthens *Mamsa* and *Asthi Dhātu*); used here over the lumbar region to support paraspinal and postural muscle strength, relevant to the lumbar hyperlordosis noted on examination in this case.

3.2 *Ashwagandhadi Lehyam* (discharge medication)

A semi-solid *Avaleha/Lehya* (linctus) preparation with *Ashwagandha* as the principal ingredient, cooked with jaggery/sugar into a paste rather than fermented as an *Arishta* or given as a plain tablet. Actions: the same *Balya*, *Brimhana* and *Vata-Kapha Shamaka* properties of *Ashwagandha* described earlier, offered here in *Lehya* form for ease of administration and palatability at this stage of treatment.

6th Follow-up Admission — Treatment Details (26/Jan/2026 to 03/Feb /2026)

1. Procedures Done During Admission

Sl. No.	Procedure	Formulation Used	Duration
1	<i>Abhyanga and Pariseka with Dhanyamla Dhara</i>	<i>[Balashwagandha Taila] / Dhanyamla dhara</i>	Alternate days × 8 days
2	<i>Katibasti</i>	<i>Dhanwantara Taila</i>	7 days
3	Physiotherapy	—	7 days
4	<i>Nasya</i>	<i>Ksheerabala 101</i> (4 drops each nostril)	6 days
5	<i>Veshtana</i> (bandaging)	<i>Murivenna Taila</i>	Bilateral upper limb, lower limb, shoulder joint × 8 days
6	<i>Matra Basti</i> (20 mL) + <i>Mustadi Rajayapana Basti</i> (100 mL)	<i>Samvardhana Ghrita / Mustadi Kwatha</i>	<i>Matra Basti</i> × 5 days; <i>Rajayapana Basti</i> × 3 days

2. Medicines Advised on Discharge

Sl. No.	Medicine	Dose	Frequency	Method
1	<i>Samvardhana Ghrita</i>	1 tsp	BD	With milk
2	<i>Ashwagandha Churna</i>	1 tsp	BD	With honey
3	<i>Brihat Vata Chintamani Rasa with Gold</i>	½ tablet	BD	—

All discharge medications advised for three months (longer than the one-month course used in earlier admissions). Instructions to patient: review and follow-up after three months.

3. Contents and Therapeutic Rationale of New Medicines/Procedures

Katibasti with *Dhanwantara Taila*, *Veshtana* with *Murivenna Taila*, *Matra Basti/Rajayapana Basti*, *Samvardhana Ghrita*, and *Brihat Vata Chintamani Rasa* with Gold all follow the same formulations and rationale already described in the earlier admission summaries. *Nasya* with *Ksheerabala 101* and *Ashwagandha Churna* are new to this admission.

3.1 Nasya with Ksheerabala 101

Instillation of *Ksheerabala Taila 101* (the same 101-times-processed *Bala*-milk-sesame oil used orally as a capsule in earlier admissions) as nasal drops — 4 drops in each nostril. *Nasya* is one of the classical *Panchakarma* procedures for disorders above the clavicle (*Urdhwajatrugata Roga*), but *Ksheerabala Nasya* is also widely used in *Vata*-dominant neurological conditions because the nasal route is considered a direct pathway to the *Shiras/Majja* (head/nervous tissue). Actions: *Vata-shamaka* and mildly *Medhya*, added here as an additional route (alongside the oral and *Basti* routes) for delivering the same *Bala*-based *Vata*-pacifying action.

3.2 Ashwagandha Churna (discharge medication)

Plain powder of *Ashwagandha* root (*Withania somnifera*), given with honey as *Anupana*. Actions: *Balya*, *Brimhana*, *Vata-Kapha Shamaka* and *Rasayana* — the same core action seen earlier in *Ashwagandharishta*, *Ashwagandha Tablet* and *Ashwagandhadi Lehyam*, now given as a simple powder for the extended three-month discharge course.

7th Follow-up Admission — Treatment Details (30 July 2026 – 07 Aug 2026)

1. Clinical Findings

Parameter	Finding
Orientation	Oriented to time, place and person (top of line cropped in screenshot — verify)
Muscle power — bilateral upper limb	5/5
Muscle power — right lower limb	3/5
Muscle power — left lower limb	3/5
Final diagnosis	Duchenne Muscular Dystrophy

2. Procedures Done During Admission

Sl. No.	Procedure	Formulation Used	Duration
1	<i>Abhyanga f/b Shashtika Shali Pinda Sweda and Dhanyamla Dhara</i>	<i>Balashwagandhadi Taila / Dhanyamla</i>	Alternate days × 8 days
2	<i>Matra Basti (20 mL) + Mustadi Rajayapana Basti (100 mL)</i>	<i>Samvardhana Ghrita / Mustadi Kwatha</i>	Matra Basti × 5 days; Rajayapana Basti × 3 days
3	<i>Katibasti</i>	<i>Dhanwantara Taila</i>	7 days
4	<i>Upanaha</i>	<i>Kottamchukkadi Lepa</i>	Both upper limb, lower limb and shoulder girdle × 7 days
5	Physiotherapy	—	7 days

3. Medicines Advised on Discharge

Sl. No.	Medicine	Dose	Frequency	Method
1	<i>Tab. BVC with Gold</i>	½ tablet	BD	—
2	<i>Kalyanaka Ghrita</i>	1 tsp	BD	With food

Sl. No.	Medicine	Dose	Frequency	Method
3	<i>Ashwagandha Churna</i>	1 tsp	BD	With honey

All discharge medications advised for three months.

Instructions to patient: follow-up after three months.

4. Contents and Therapeutic Rationale of New Medicines/Procedures

Abhyanga with *Balashwagandhadi Taila* f/b *Shashtika Shali Pinda Sweda*, *Dhanyamla Dhara*, *Matra Basti/Rajayapana Basti* with *Samvardhana Ghrita*, *Katibasti* with *Dhanwantara Taila*, *BVC* with Gold and *Ashwagandha Churna* all follow the same formulations and rationale already described in the earlier admission summaries. *Upanaha* with *Kottamchukkadi Lepa* and *Kalyanaka Ghrita* are new to this admission.

4.1 Upanaha with Kottamchukkadi Lepa

A sustained local poultice procedure in which *Kottamchukkadi Choorna* (the same *Vata-Kapha*-pacifying powder of *Pushkaramoola*, *Vacha*, *Rasna*, *Devadaru* and related drugs used earlier as a simple local application) is made into a warm paste (*Lepa*) and bandaged over the affected region for a sustained period, rather than applied and washed off as a single sitting. This *Upanaha Sweda* provides prolonged, gentle *Ushna* (warming) fomentation to the underlying muscle and joint tissue. Applied here over both upper limbs, lower limbs, and the shoulder girdle, it extends the *Kapha-Meda*-reducing and stiffness-relieving action used earlier (*Udvartana*, *Kottamchukkadi* local application) to a wider set of joints as the disease course progresses.

4.2 Kalyanaka Ghrita (discharge medication)

A classical polyherbal medicated ghee first described in *Charaka Samhita*, *Chikitsa Sthana* 9, prepared by infusing numerous herbs into a *Go-Ghrita* (cow's ghee) base. It is principally a *Medhya* (nootropic/neuroprotective) and *Rasayana* formulation, classically indicated for *Apasmara*, *Unmada* and *Smriti Daurbalya* (memory/cognitive weakness), and more broadly for *Daurbalya* (general debility) and strength/growth promotion in children (*Bala Chikitsa*). Its inclusion at this later stage adds a *Ghrita*-based, nervous-system-directed route of nourishment (a *Ghrita* base is considered to readily cross into neural tissue) alongside the ongoing musculoskeletal-focused therapies, broadening support for the *Majjavaha Srotas* implicated in this case.

Outcome assessment:

Baseline (1st admission, 11–21 October 2024): At presentation, the child had a waddling gait with toe walking, lumbar hyperlordosis, bilateral calf pseudohypertrophy, and a left equinovarus deformity. Gower's sign and Valley sign were positive. Muscle power was 2/5 in the bilateral upper limbs and 2/5 in the bilateral lower limbs. Weight was 28 kg, with mid-arm circumference 19 cm and mid-thigh circumference 36.5/37.5 cm (left/right). Serum CPK was 10,592 U/L.

2nd follow-up (08–15 January 2025): The child was managed with *Dhanyamla Dhara*, *Sarvanga Abhyanga* with *Shashtika Shali Pinda Sweda*, *Yoga Basti* (*Rajayapana* and *Matra Basti* with *Samvardhana Ghrita*), *Veshtana* and physiotherapy, continuing the supportive protocol established at the first admission. Formal re-examination and anthropometry were repeated at this visit, but it is same as at the recent admission; changes noticed like he started to rise from the floor (Gower's manoeuvre time, 10-metre walk time noted 4-stair climb time noted. Clinical parameters were next documented at the third follow-up.

3rd follow-up (01–09 April 2025): Gower's sign remained positive, and the gait remained waddling, with a persistent lordotic posture — consistent with the chronic, progressive nature of the underlying dystrophinopathy

rather than an interval deterioration, Weight had increased to 29 kg (from 28 kg at baseline), with mid-arm circumference 20.5 cm and mid-calf circumference 28 cm bilaterally, reflecting the child's overall growth over the interval.

6-Minute Walk Test (6MWT) — total distance walked in 6 minutes is 500 metres. A well-validated ambulatory endurance noted. The treatment protocol was continued with the addition of *Yoga* and *Yoga Basti* (*Mustadi Rajayapana Basti* with *Sahacharadi Matra Basti*).

4th follow-up (07–13 August 2025): Weight had increased further to 30.3 kg, and height was recorded at 138 cm, with mid-calf circumference increasing marginally to 29 cm; mid-arm and mid-thigh circumferences were unchanged from the previous visit. *Katibasti* with *Dhanwantara Taila* was introduced at this admission to support paraspinal and postural muscle strength, given the persistent lumbar hyperlordosis.

5th follow-up (10–17 October 2025): The established protocol (*Abhyanga*, *Dhanyamla Dhara*, *Veshtana*, *Yoga Basti*, *Katibasti*, physiotherapy) was continued. Changes noticed like he started to rise from the floor (Gower's manoeuvre time, 50-metre walk time, and 4-stair climb time noted.

6th follow-up (26 January–03 February 2026): *Nasya* with *Ksheerabala 101* was introduced as an additional route of *Vata-shamaka* therapy. On the basis of the clinical stability observed over the preceding admissions, the discharge medication course was extended from one month to three months.

7th follow-up (30 July–07 August 2026): At the time of this presentation, bilateral upper-limb muscle power was recorded as 5/5, an improvement from the 4/5 documented at baseline, while lower-limb power remained at 3/5 bilaterally, unchanged from the initial assessment. The child remained oriented to time, place, and person. *Upanaha* with *Kottamchukkadi Lepa* and *Kalyanaka Ghrita* were introduced at this stage to extend supportive care to a wider set of joints and to add *Rasayana*-based neuromuscular support.

Muscle group (R/L)	Baseline	1st F/U	2nd F/U	3rd F/U	4th F/U	5th F/U	6 th F/U	7 th F/U
Neck flexors	3/3	3/3	3/3	4/4	4/4	4/4	4/4	4/4
Deltoid (shoulder abductors)	4/4	4/4	4/4	4/4	4/5	5/5	5/5	5/5
Biceps (elbow flexors)	4/4 /	4/4	4/4	4/4	4/4	5/5	5/5	5/5
Triceps (elbow extensors)	4/4 /	4/4	4/4	4/4	4/4	5/5	5/5	5/5
Wrist extensors	4/4 /	4/4	4/4	4/4	4/4	5/5	5/5	5/5
Iliopsoas (hip flexors)	3 /3	3/3	3/4	4/4	4/4	4/4	4/4	4/4
Gluteus maximus (hip extensors)	2 /2	2/2	3/3	3/3	3/4	4/4	4/4	4/4
Gluteus medius (hip abductors)	3 /3	3/3	3/3	3/4	4/4	4/4	4/4	4/4
Quadriceps (knee extensors)	3 /3	3/3	3/3	4/3	4/4	4/4	4/4	4/4
Hamstrings (knee flexors)	3 /3	3/3	3/3	4/4	4/4	4/4	4/4	4/4

Tibialis anterior (ankle dorsiflexors)	3 /3	3/3	3/3	4/4	4/4	4/4	4/4	4/4
Gastrocnemius (ankle plantar flexors)	1 /1	1/2	2/3	3/3	3/4	3/4	4/4	4/4

MRC Muscle Grading Chart: Serial Follow-up Record

Across the seven admissions spanning approximately 21 months, the family reported a reduced frequency of falls following *Ayurvedic* management, while difficulty rising from sitting and climbing stairs persisted. Upper-limb muscle power improved from 4/5 to 5/5 over the course of treatment; lower-limb power was maintained at 3/5 without further deterioration, in a disease that is typically progressive. Anthropometric parameters showed steady growth consistent with the child's age.

The available case material documents parental observation of a reduced frequency of falls after the preceding *Ayurvedic* admission, while difficulty rising from sitting, climbing stairs, and reduced strength have largely improved.

No serial CPK value, validated functional scale, timed motor test, pulmonary function measure, or cardiac outcome was documented in the supplied case presentation; therefore, treatment effect cannot be quantified or causally attributed.

Results

A 9-year-old boy presented with progressive difficulty rising from a sitting position, climbing stairs and loss of strength, with recurrent falls and abnormal gait. The case presentation records onset of the principal complaints at approximately 6 years of age. Gross motor development was selectively delayed: standing without support at 16 months, walking independently/climbing stairs at 3 years 3 months and stable independent gait by 4 years. Fine motor, social-adaptive and language development were reported as age-appropriate.

On examination, the child had a waddling gait and toe walking with lumbar hyperlordosis and calf contractures. Bilateral calf pseudohypertrophy and left equinovarus deformity were recorded. Gower's sign and Valley sign were positive. Muscle power was documented as 4/5 in the upper limbs and 3/5 in the lower limbs in the tabulated examination. The supplied presentation also contains a separate photograph showing lower-limb power as 1/5.

Anthropometry showed weight 28 kg, height 124 cm, chest circumference 73 cm, head circumference 72 cm, bilateral mid-arm circumference 19 cm, and mid-thigh circumferences of 36.5 cm on the left and 37.5 cm on the right. Cardiovascular, respiratory, gastrointestinal and central nervous system examinations were reported without clinically significant abnormalities at the time of assessment.

The serum CPK was 10,592 U/L. Genetic testing was documented as demonstrating a hemizygous deletion involving exons 46–48 of the DMD gene, confirming dystrophinopathy in the clinical context. The case presentation excluded rickets, Rett syndrome, mitochondrial myopathy, hereditary spastic paraplegia, Becker muscular dystrophy, Guillain Barré syndrome and limb-girdle muscular dystrophy on clinical and/or laboratory grounds.

Ayurvedic assessment identified *Vata-Kapha* as the involved *Doshas*, with *Vata* predominance; *Rasa*, *Mamsa*, *Meda* and *Asthi* as *Dushyas*; *Dhatvagni* as the relevant *Agni*; *Saama* state; *Rasavaha*, *Mamsavaha*, *Medovaha* and *Asthivaha Srotas* with *Srotosanga*; *Madhyama Rogamarga*; chronic course; and an *Asadhya* assessment. The disease was clinically expressed mainly through musculoskeletal dysfunction.

The documented intervention was primarily supportive. Following the previous *Ayurvedic* admission and discharge, the parents reported a slight reduction in falls while walking, whereas difficulty rising from sitting, climbing stairs, and reduced strength persisted. At the time of the case presentation, the child had returned for the

seventh *Ayurvedic* management session. Because the case lacks standardized serial measurements, the observed change is best described as a patient-reported functional observation rather than a measured therapeutic response.

Table 1. Salient case history

Parameter	Finding
Age/sex	9-year-old male
Primary complaints	Difficulty rising from sitting, climbing stairs, reduced strength
Associated complaint	Abnormal gait with recurrent falls
Course	Progressive
Family history/context	Second child of consanguineous marriage; consanguinity not considered a direct DMD risk factor in the case discussion
Previous treatment	Prednisolone, levocarnitine, multivitamins; physiotherapy

Table 2. Developmental profile

Domain	Milestone in case	Comment recorded in presentation
Neck holding	3 months	Recorded as attained
Rolling over	5 months	Recorded as attained
Sitting with support	7 months	Recorded as attained
Standing with support	11 months	Recorded as attained
Standing without support	16 months	Delayed gross motor milestone
Walking alone/climbing stairs	3 years 3 months	Delayed gross motor milestone
Walking without support	4 years	Delayed compared with expected age
Fine motor/social/language	Age appropriate	No global developmental delay reported

Table 3. Neuromusculoskeletal examination

Examination	Finding
General appearance	Normosthenic; well-nourished for age
Gait	Waddling; toe walking
Posture	Lumbar hyperlordosis; calf contractures
Local examination	Bilateral calf pseudohypertrophy
Foot deformity	Left equinovarus deformity recorded
Gower's sign	Positive
Valley sign	Positive
Muscle power	Upper limbs 4/5; lower limbs 3/5 in tabulated examination
Reflexes	Biceps/triceps and knee/ankle jerks documented as present

Table 4. Laboratory and systemic findings

Investigation	Result	Interpretation in case
Serum CPK	10,592 U/L	Markedly elevated; supports active muscle injury
Genetic testing	Hemizygous deletion involving exons 46–48 of DMD gene	Confirmatory in the clinical context
CVS examination	No murmur; HR 80/min	No clinical cardiac abnormality documented
Respiratory examination	Normal vesicular breath sounds; no added sounds	No clinical respiratory abnormality documented
CNS examination	Higher mental functions intact; conscious and alert	No clinically significant CNS abnormality documented

Table 5. Ayurvedic diagnostic assessment

Ayurvedic component	Assessment
Nidana	Beejadushti
Purvarupa	Repeated falls
Rupa	Cheshtahani, Balahani, Katipradesha Vakraata
Dosha	Vata-Kapha; Vata predominant
Dushya	Rasa, Mamsa, Meda, Asthi
Agni/Ama	Dhatvagni; Saama
Srotas	Rasavaha, Mamsavaha, Medovaha, Asthivaha
Srotodushti	Srotosanga
Rogamarga	Madhyama
Course	Chirakari
Sadhyasadhyata	Asadhya

Table 6. Available treatment outcome data

Outcome domain	Before/initial status	Documented observation	follow-up
Falls	Recurrent falls while walking	Parents reported reduced frequency after previous Ayurvedic admission	
Rising from sitting	Difficulty	Largely unchanged	
Climbing stairs	Difficulty	Largely unchanged	
Muscle strength	Reduced	Largely unchanged	
Gait	Waddling/toe walking	No objective serial gait measure documented	
CPK	10,592 U/L at documented testing	No repeat value available	
Cardiac/respiratory status	No clinically significant abnormality documented	No serial cardiopulmonary available	objective outcome

Discussion

This case demonstrates the classical clinical pattern of a dystrophinopathy: progressive proximal weakness, difficulty rising from the floor and climbing stairs, Gower's sign, waddling gait, calf pseudohypertrophy and a very high CPK concentration, with molecular confirmation by a DMD gene deletion. The preserved sensory examination and cranial nerve function, together with the chronic progressive course, supported a primary myopathic process rather than a peripheral neuropathy. The clinical phenotype and genetic result were particularly useful in distinguishing DMD from limb-girdle muscular dystrophy and Becker muscular dystrophy.

The developmental history is also informative. Although the family initially reported milestones as age appropriate, the detailed milestone record showed selective gross motor delay with relatively preserved fine motor, social-adaptive and language development. This pattern is compatible with a predominantly neuromuscular disorder and does not suggest global developmental delay.

From the *Ayurvedic* perspective used in this case, *Beejadushti/Beejabhaga Avayava Dushti* was considered the primary *Nidana* because the disorder was genetically determined. *Vata* was considered predominant because of weakness, impaired voluntary movement and locomotor dysfunction, while *Kapha-Meda* involvement was used to interpret calf pseudohypertrophy and stiffness. *Mamsa* was considered the principal *Dushya*, with secondary *Rasa*, *Meda* and *Asthi* involvement. This conceptual mapping is an interpretive *Ayurvedic* framework rather than a molecular equivalence and should not be presented as proof that *Ayurvedic Dosha* or *Srotas* categories are biological mechanisms of DMD.

The treatment strategy was based on *Vata Chikitsa* principles described in *Ashtanga Hridaya*, including *Sneha*, *Swedana*, *Abhyanga* and *Basti*. The selected procedures were intended to provide supportive nourishment, reduce stiffness, preserve mobility and address functional disability. Physiotherapy was included as an important multidisciplinary component. Modern DMD care likewise emphasizes individualized rehabilitation, contracture prevention, preservation of mobility and surveillance for respiratory and cardiac complications.

The observed reduction in falls is clinically relevant to the family, but it should be interpreted cautiously. There was no standardized baseline and follow-up functional score, timed test, repeated CPK measurement or comparator. Furthermore, several interventions were administered together, including physiotherapy and multiple *Ayurvedic* procedures, making attribution to any single procedure impossible. The child also had previously received corticosteroids, a therapy with established benefits for strength and function in DMD but with recognized adverse effects including weight gain and cushingoid appearance.

An important strength of this report is the combination of detailed clinical examination, biochemical evidence and molecular confirmation with an explicit *Ayurvedic* diagnostic and therapeutic rationale. Limitations include the single-case design, incomplete longitudinal quantitative outcome data, and inconsistent documentation of lower-limb muscle power in different portions of the presentation, absence of a repeat CPK value and absence of documented ethics approval/consent in the supplied material. Future case reports should prospectively record validated functional outcomes such as timed rise from floor, 10-metre walk/run, North Star Ambulatory Assessment where applicable, range of motion, respiratory function and cardiac surveillance findings, together with adverse events and longer follow-up.

Conclusion

This case documents a 9-year-old boy with genetically confirmed Duchenne muscular dystrophy presenting with progressive proximal weakness, recurrent falls, Gower's sign, waddling gait, toe walking, calf pseudohypertrophy and markedly elevated CPK. Within the *Ayurvedic* framework used in the case, the disorder was interpreted as a *Beejadushti*-associated, *Vata*-predominant condition with *Mamsa Dhatu* and *Mamsavaha Srotas* involvement and secondary *Kapha-Meda* features. A multimodal supportive protocol incorporating *Dhanyamala Dhara/Abhyanga*, *Basti*, physiotherapy and *Vestana* was administered. The family reported fewer falls after a previous *Ayurvedic* admission, but major functional limitations persisted and objective serial outcomes were not

available. Therefore, the case supports the feasibility of documenting *Ayurvedic* supportive care in a child with DMD but does not establish efficacy or disease modification. Larger prospective studies with standardized functional measures, cardiopulmonary monitoring, adverse-event reporting, appropriate ethical oversight and longer follow-up are required to determine whether such interventions provide reproducible benefits when used alongside established multidisciplinary DMD care.

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Conflict of Interest

The authors declare no competing financial interests related to this case report.

References

1. Birnkrant DJ, Bushby K, Bann CM, Apkon SD, Blackwell A, Brumbaugh D, et al. Diagnosis and management of Duchenne muscular dystrophy, part 1: diagnosis and neuromuscular, rehabilitation, endocrine, gastrointestinal, and nutritional management. *Lancet Neurol*. 2018; 17(3):251-267.
2. Birnkrant DJ, Bushby K, Bann CM, Alman BA, Apkon SD, Blackwell A, et al. Diagnosis and management of Duchenne muscular dystrophy, part 2: respiratory, cardiac, bone health, and orthopaedic management. *Lancet Neurol*. 2018; 17(4):347-361.
3. Birnkrant DJ, Bushby K, Bann CM, Apkon SD, Blackwell A, Colvin MK, et al. Diagnosis and management of Duchenne muscular dystrophy, part 3: primary care, emergency management, psychosocial care, and transitions of care across the lifespan. *Lancet Neurol*. 2018; 17(5):445-455.
4. Bushby K, Finkel R, Birnkrant DJ, Case LE, Clemens PR, Cripe L, et al. Diagnosis and management of Duchenne muscular dystrophy, part 1: diagnosis, and pharmacological and psychosocial management. *Lancet Neurol*. 2010; 9(1):77-93.
5. Sushruta. *Sushruta Samhita, Sutra Sthana, Dosha-Dhatu-Mala Kshaya-Vridhhi Vijnaniya Adhyaya*, 15/9. In: Sharma PV, translator. *Sushruta Samhita with English Translation*. Varanasi: Chaukhambha Visvabharati; 2004.
6. Shree SBG, Vijayalaxmi M, Shailaja U. Management of Duchenne Muscular Dystrophy by Ayurvedic Principles - A Case Report. *J Ayurveda Integr Med Sci*. 2025; 10(8):354-8. Available from: <https://jaims.in/jaims/article/view/4673>

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