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Case Study

AYURVEDIC INSIGHTS IN THE CLINICAL MANAGEMENT OF PAGET'S DISEASE

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ABSTRACT

Paget's disease of bone is a chronic metabolic bone disorder characterized by abnormal bone remodelling, leading to pain, deformity, and increased fracture risk. In Ayurveda, it can be studied under the heading of *Asthi Dhatu Kshaya* and vitiation of *Vata dosha*, requiring holistic management to restore balance and improve bone health. This case study explores the Ayurvedic therapeutic approach involving *Sarvanga Abhyanga*, *Parisheka*, and *Tikta Ksheera Basti* for managing Paget's disease symptoms. These interventions aim to pacify *Vata dosha*, nourish the *Asthi dhatu*, reduce pain and inflammation, and enhance overall musculoskeletal function. The combined *Panchakarma* therapies demonstrated significant symptomatic relief and improvement in the patient's quality of life, suggesting a promising integrative treatment protocol for Paget's disease management in Ayurveda.

INTRODUCTION

Paget's disease of bone, also called Osteitis deformans, is a chronic disorder marked by abnormal bone remodelling. In this condition, the normal cycle of bone renewal is disrupted, resulting in excessive breakdown and regrowth of bone tissue. This process causes affected bones to become large, misshapen, and weaker than normal, which can lead to pain, deformity, and fractures[1]. Most frequently affecting older adults- particularly those over 55- the disease's prevalence varies globally and is notably higher in regions such as Europe, North America, and Australia[2]. Both genetic and environmental factors are linked to its development, but the exact cause remains unclear.

Paget's disease evolves through three phases[3]:

1. Lytic phase: Increased bone resorption by enlarged, overactive osteoclasts.
2. Mixed phase: Excessive bone formation by osteoblasts, but the new bone is structurally abnormal because collagen is laid down irregularly.
3. Sclerotic phase: Dominance of disorganized bone formation, resulting in thickened but weak and brittle bones. This abnormal bone turnover and architecture make affected bones prone to complications like fractures, deformity, arthritis, and nerve compression

Many people remain asymptomatic, and the disease is sometimes discovered on X-rays taken for other reasons. Common symptoms include bone pain (often deep, dull, and worse at night), bone deformities (bowing of limbs, skull enlargement), joint pain, fractures.

Diagnosis and management focus on controlling symptoms and preventing complications, with medications like bisphosphonates serving as the mainstay of treatment.

Paget's disease of bone can be correlated in Ayurveda primarily to *Asthi Dhatu Kshaya* (depletion of bone tissue) occurring due to *Kavaigunyata* in *Asthi* and *Majja dhathu. "Asthi Dhatu"* refers to bone tissue and "*Kshaya*" means depletion. The root pathology involves a disturbance in the balance of the body's *Vata dosha*, leading to the loss or weakening of bone.

Acharya Vagbhata reiterates the inverse proportionality between *Vata Dosha* and *Asthi Dhatu*. He explains that increase in *Vata* leads to qualitative and quantitative reduction in *Asthi Dhatu*, causing *Asthi Kshaya* producing symptoms such as *Sandhi*

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Shula, Stambha, and *Toda* in limbs[4]. He recommends therapies such as *Tikta Rasa*, *Ksheera*, and *Basti* which target *Vata* and *Asthi* balance[5].

Case report

Chief complaints

C/O Pain over left hip joint for the past 5 year.

A/C/O Left knee joint pain since 1 year.

Associated complaints

A/W stiffness in lower back, hip joint since 5 years.

History of present illness

Mrs. XYZ is a 43-year-old female with a past medical history of urticaria and rheumatoid arthritis at the age of 10 years old (RA Factor & CRP – Negative in recent investigation); recently detected DM_2 (not on medication), who presently complaining of left hip joint pain since 5 year, insidious in onset, gradually progressive. Her pain aggravated during daily activities and subsided on supine position only. Subject has left knee joint pain for the past 1 years, aggravating during daily activities and relieving by rest. She had undergone Arthroscopic surgery for Baker's cyst 1 year back. For this she approached to nearby hospital and prescribed with symptomatic medication. As symptoms didn't subside, she again approached for the same and advised for MRI. On CT and MRI evaluation she was diagnosed with Paget's disease of left iliac bone along with secondary osteoarthritis of left hip joint on July 2024. She was started on calcium and bisphosphonates in view of Paget's disease. As significant result was not obtained, she was advised to undergo left hip uncemented total hip arthroplasty. But the subject was unwilling and came to GAMC, Bengaluru, on 5th May 2025 for further evaluation and management.

Past History

Medical history

K/C/O Diabetes Mellitus (since 08/05/25) – Not on medication

Family history

Nothing contributory

Table 1: Subject's personal history

Name – XYZ	Sleep – Sound
Age – 43 years	Bowel habit – Regular, constipated
Sex – Female	Appetite – Normal
Marital status – Married	Weight – 65 kg
Occupation – Nursing officer	Height – 4.9 feet
Menstrual history – Regular	Addiction – None

Table 2: *Ashtasthana pareeksha*

Nadi	*Prakruta*, 82bpm
Mutra	*Prakruta,* 3-4times/day & 1-2 times/night
Mala	*Badha*
Jihwa	*Alipta*
Shabda	*Prakruta*
Sparsha	*Prakruta*
Drik	*Prakruta*
Akriti	*Madhyama*

Table 3: *Dashavidha pareeksha*

Prakriti: Kapha Vata	*Satmya: Madhura rasa pradhana sarva rasa satmya*
Vikriti: Vata – kaphadosha janya	*Pramana*: *Madhyama*
Sara: Madhyama	*Aahara shakti: Madhyama*
Samhanana: Madhyama	*Vyayama shakti: Avara*
Satva: Pravara	*Vaya: Madhyavastha*

Systemic examination

Central nervous system: Conscious, well oriented to place, person, time. Higher mental functions intact, no abnormality detected.

Cardiovascular system: S1 S2 heard, no other abnormalities.

Respiratory system: Normal vesicular breath sounds heard.

Gastrointestinal system: P/A- soft, bowel sounds – 3-4/min

Musculoskeletal system

Spine Examination

Inspection: Neck and shoulder symmetry – Normal

Curvature of spine – Increased lumbar lordosis

Localised projections over spine – Absent

Palpation: Tenderness – Absent

Hip joint Examination

Inspection: Skin – No discoloration or deformity.

Standing position – Right lateral pelvic tilt.

No muscle wasting

Stoop – Absent

Palpation: Tenderness – Over left greater trochanter.

Neurovascular

1. Motor – Pain during hip adduction, thigh abduction, hip flexion and hip extension; no other comorbidities.
2. Sensory – No abnormalities detected.
3. Femoral pulse – Palpable

Special Tests: Log Roll Test – Positive, restricted internal rotation of left hip joint.

Resisted hip flexion test – Positive over left side.

Trendelenburg Test – Positive, right pelvis drop.

Table 4: Range of Motion of Hip joint

ROM	Right Hip Joint	Left Hip Joint
Flexion	130 deg	45 deg
Extension	30 deg	15 deg
Abduction	50 deg	30 deg
Adduction	30 deg	30 deg
Internal rotation	30 deg	Not able to perform
External rotation	50 deg	Not able to perform
Resisted hip flexion test	Negative	Positive over left side

Laboratory reports

1. HbA1c – 8.6% (08/05/2025)
2. CRP – Negative
3. ESR – 36 mmhr

Nidana Panchaka

Nidana - Utpadaka nidana – Ativyayama, Mithya ahara and *Vihara*

Viprakrista nidana - Rogathikarshanath

Poorvaroopa - Avyakta

Roopa – Asthitoda, Sandhishaithilya, Asthisoushirya,

Upashaya – Supine position

Aupashaya – Chankramana, Vyayama, sitting

Samprapti

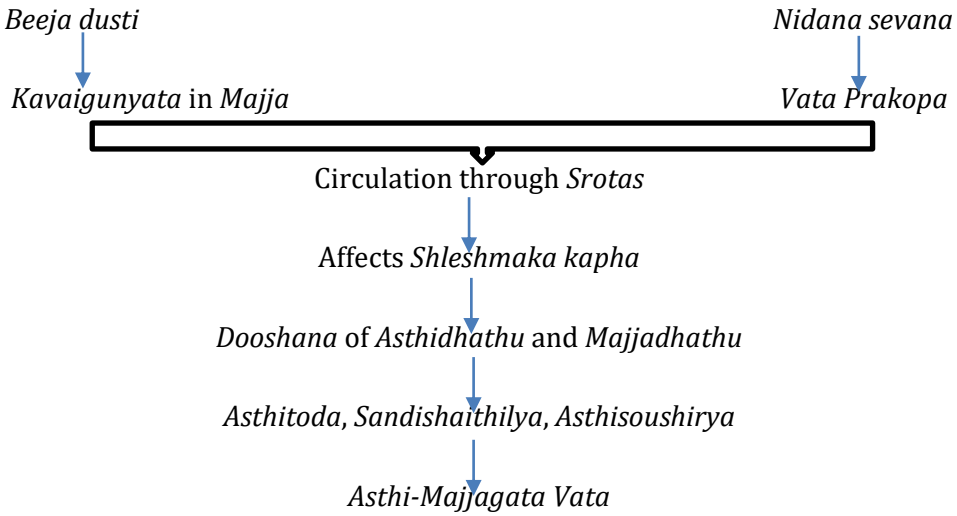

Table 5: *Samprapti ghataka*

Dosha	*Vata (Vyana), Kapha (Shleshmaka)*	*Udbhavasthana*	*Pakwashaya*
Dushya	*Asthi, Majja*	*Sancharasthana*	*Sarvashareera*
Agni	*Dhatwagni*	*Vyaktasthana*	*Asthi, Majja, Sandhipradesha*
Agnidushti	*Dhatwagni Mandya*	*Vyadhi swaroopa*	*Chirakari*
Srotas	*Asthivaha, Majjavaha*	*Rogamarga*	*Madhyama*
Srotodushti	*Atipravritti, Sanga*	*Sadhyasadhyata*	*Yapya*

Table 6: Treatment protocol adopted

Panchakarma	***Shamana Oushadhis***
• *Sarvanga mridu Abhyanga* with *Kanaka taila* f/b *Dashamoola kayaseka*- for 5 days (06/05/25 – 10/05/25) • *Asanadi + Panchatikta Kashaya basti – Kala* pattern • Physiotherapy - SLR Static quadriceps ROM of lower limb Twisting Bridging	• *Lakshadi guggulu* 1 tab TID AF • *Panchatikta kashya + Ashwagandha + Shatavari Ksheerapaka* 20 ml BD BF • *Sanjeevani vati* 1 tab BD AF

Asanadi + Panchatikta Kashaya basti

Makshika	80ml
Saindava	10 gm
Panchatiktaka gritha	80ml
Asthishrunkala + Arjuna + Ashwagandha + Shatapushpa kalka	30gm
Asanadi + Panchatiktha kashaya	300ml
Total	500ml

***Anuvasana basti* with *Panchatikthaka ghritha* – 60ml**

11/5	12/5	13/5	14/5	15/5	16/5	17/5	18/5	19/5	20/5
		N	N	N	N	N	N		
A	A	A	A	A	A	A	A	A	A

OBSERVATION AND RESULTS

Table 8: Observation and Results

Treatment	Observation
Sarvanga mridu Abhyanga with *Kanaka taila* f/b *Dashamoola kayaseka*	Pain reduced moderately ROM improved
Asanadi + Panchatikta Kashaya basti	Pain reduced completely On examination- Tenderness over left hip joint - Absent ROM improved

Table 9: Showing overall assessment before and after treatment

	Before treatment	**After *Sarvanga mridu Abhyanga* f/b *Kayaseka***	**After *Basti***
Pain	Severe	Reduced by 50%	Reduced by 80%
ROM	Restricted	Improved by 10%	Improved by 60%
Right lateral pelvic tilt	Present	Improved by 50%	Absent
HbA1c	8.5% (08/05/2025)		6.8% (28/08/2025)

DISCUSSION

Paget's disease

- Paget's disease of bone (osteitis deformans) is a chronic skeletal disorder marked by excessive, disorganized bone remodelling. It typically arises in individuals over 50 and involves excessive osteoclastic resorption followed by rapid and chaotic osteoblastic bone formation. The resulting bone is enlarged, structurally weak, highly vascular, and prone to deformity and fracture. Affected sites most commonly include the pelvis, spine (especially lumbar), skull, femur, and tibia[1].
- Clinically, many patients remain asymptomatic and are diagnosed incidentally on imaging. Symptomatic cases present with bone pain, deformities such as bowing of the legs or enlarged skull, fractures, hearing loss, and joint complications. On examination, affected bones may feel warm due to increased blood flow. Diagnosis is based on X-ray findings of thickened cortex and coarse trabeculae, elevated serum alkaline phosphatase levels, and bone scans showing increased uptake[6].
- Management depends on symptoms and disease severity. Asymptomatic patients may not require treatment, while bisphosphonates such as alendronate or zoledronic acid are the mainstay in active cases to reduce bone turnover. Pain relief with NSAIDs, physiotherapy, and surgical correction of fractures or deformities may also be required. Rarely, the disease can progress to osteosarcoma, making early recognition and appropriate management important[7].

Ayurvedic view

Acharya Charaka and *Vagbhata* describe *Asthi Dhatu* as being nourished sequentially in the *Dhatu Parinama* process. Any disturbance in *Asthi Dhatvagni* or *Kshayaja Vikriti* leads to reduced quantity/quality of bone. Increased *Vata Dosha*, due to its *Ruksha, Khara, Laghu* qualities, consumes and dries up *Asthi Dhatu.*

Vagbhata states

"**यद्धि वायोर्वर्धनं रूक्षादि, तदस्थ्नः क्षपणम्**[8]"– With increase of *Vata*, there is depletion of *Asthi dhathu*.

Thus, Paget's disease, where bone becomes fragile, painful, and deformed, aligns with *Asthi Kshaya* due to *Vata vruddhi* and *Asthi Dhatvagni dushti*. Even symptoms of *Asthi dhathu kshaya* closely resembles that symptoms of Paget's disease such as - *Sandhi Shula, Stambha, Toda, Asthi Daurbalya, Akunchana* & *Vakrikarana, Danta Vikara.*

Chikitsa focus on pacifying *Vata* and nourishing *Asthi Dhatu*:

- *Tikta Rasa Dravyas*– Enhance *Asthi dhatvagni*, promote bone tissue quality.
- *Ksheera & Ghrita*– *Brimhana*, rich in calcium-like properties.
- *Basti*– Considered best for *Vata* disorders; regulates *Vata* at its root and supports *Asthi Dhatu* regeneration.
- *Taila Abhyanga*– For pain relief and prevention of stiffness.
- *Rasayana chikitsa*- For strengthening bones.

Treatment Protocol

Abhyanga* f/b *Parisheka- *Sarvāṅga Abhyanga* with *Kanaka Taila* nourishes and lubricates, pacifying *Vāta*, while *Dashamula Parisheka* cleanses and dries excess *Kapha* and *Ama*. Their combination creates a balanced approach: softening rigidity, reducing pain, improving circulation, and restoring mobility in *Stambha* conditions caused by *Vāta–Kapha* vitiation.

Asanadi + Panchatikta Kashaya basti

Aspect	*Asanadi Kashaya*	*Panchatikta Kashaya*	Combined Effect
Main Ingredients	*Asana* + other *Vata–Kapha-hara* herbs	*Nimba, Vasa, Patola, Guduchi, Kantakari*	Synergy of *Pramehaghna + Asthivardhana*
Rasa	*Tikta, Kashaya*	*Tikta*	Strong *Tikta–Kashaya* → *Deepana, Pachana*
Guna	*Laghu, Rookṣha*	*Laghu, Rookṣha, Tikta Pradhana*	Targets *Kapha* and *Asthi*
Dosha Action	*Kapha–Meda-hara, Vata–Pitta-shamaka*	*Vata–Kapha-hara, Ama-pachana*	Corrects *Kapha–Meda* + pacifies *Vata* simultaneously
Dhātu Effect	Regulates *Meda* & *Mamsa* metabolism	Promotes *Asthi Dhātu* formation *("Tiktam rasam asthivardhanam")*	Supports both *Meda* correction & *Asthi* regeneration
In Diabetes	Hypoglycemic, reduces *Kapha–Meda*, prevents	Detoxifies, anti-inflammatory, prevents	Regulates blood sugar +

(*Madhumeha*)	*Prameha* complications	infections & ulcers	prevents complications
In Paget's Disease (*Asthi Kṣhaya*)	Improves *Dhātu* metabolism, prevents *Kapha avarana*	Direct *Asthi Dhātu vardhana,* reduces inflammation & stiffness	Nourishes bone tissue + reduces pain, stiffness & fragility
Overall Role	*Pramehaghna, Kapha–Meda hara*	*Asthiposhaka, Vāta–Kapha-hara*	Holistic management of metabolic + bone disorders

Kalka dravyas

- ***Asthishrunkala* (*Cissus quadrangularis*)**- *Asthi Sandhānakara* (bone healing, fracture union, mineralization).
- ***Arjuna* (*Terminalia arjuna*)**- *Asthi dhātu poshana*, strengthens bone matrix, calcium retention.
- ***Ashwagandha* (*Withania somnifera*)**- *Balya, Rasāyana*, reduces Vāta, supports osteoblast activity, and prevents bone loss.
- ***Shatapushpa* (*Anethum sowa*/Dill seeds)**- *Deepana, Asthiposhaka*, improves calcium absorption, supports bone metabolism.

Asthishrunkala, Arjuna, Ashwagandha, and *Shatapushpa* together act as *Asthiposhaka Rasayanas*, promoting bone regeneration, mineralization, and strength while pacifying Vata, making them beneficial in Paget's disease *(Asthi Dhatu Kshaya*).

Thus, this combination of *Basti–* helps in managing both *Madhumeha* and *Asthi-kshaya* by treating the main culprit i.e*., Vata, Kapha* and *Asthi.*

CONCLUSION

Panchakarma therapy, as demonstrated in this case study, plays a significant role in improving the quality of life for patients with Paget's disease by effectively reducing pain and alleviating suffering. Through targeted interventions like *Sarvanga Abhyanga, Parisheka,* and *Tikta Ksheera Basti, Panchakarma* helps restore balance in the body, offering holistic relief and enhanced musculoskeletal function, thereby supporting better overall well-being.

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