

Nakha Pariksha In Doshaja Prakriti: A Conceptual Ayurvedic Review with Special Reference to Calcium Deficiency

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Abstract—Ayurveda, the traditional system of Indian medicine, emphasizes individualized healthcare through the concept of Prakriti, which determines an individual's physical, physiological, and psychological characteristics. Among the various diagnostic approaches described in Ayurvedic classics, Nakha Pariksha (nail examination) is an important non-invasive clinical method that reflects the condition of Dosha, Dhātu, Agni, and overall health. Nails (*Nakha*) are considered closely associated with Asthi Dhātu, and their morphology reflects the quality of tissue nourishment. Modern medicine also recognizes nail changes as valuable indicators of systemic diseases and nutritional deficiencies, including calcium deficiency. Calcium is an essential mineral involved in bone mineralization, keratinization, neuromuscular activity, and cellular signaling. Chronic calcium deficiency commonly presents with brittle, rough, thin, and fragile nails, which closely resemble the nail characteristics observed in Vata Prakriti and Asthi Dhātu Kshaya. This conceptual review critically analyzes classical Ayurvedic descriptions of Nakha Pariksha in Doshaja Prakriti and correlates them with modern knowledge of calcium metabolism and deficiency. Relevant information was collected from Ayurvedic classics and contemporary scientific literature. The review highlights the potential of Nakha Pariksha as an economical, non-invasive, and clinically useful tool for identifying constitutional predisposition to calcium deficiency and Asthi Dhātu depletion. Integrating Ayurvedic diagnostic principles with modern nutritional assessment may improve preventive healthcare and promote personalized medicine.

Index Terms—Nakha Pariksha, Prakriti, Asthi Dhātu, Calcium Deficiency, Ayurveda, Vata, Pitta, Kapha, Nail Examination.

I. INTRODUCTION

Ayurveda is a holistic medical science that aims to preserve health and prevent disease by maintaining the equilibrium of Dosha, Dhātu, Mala, and Agni. One of its most distinctive concepts is Prakriti, the unique constitutional makeup established at conception. Prakriti influences an individual's morphology, metabolism, disease susceptibility, psychological traits, and response to treatment. Therefore, constitutional assessment is fundamental to Ayurvedic diagnosis and personalized healthcare.

Classical Ayurvedic texts describe numerous methods of clinical examination, including Dashavidha Pariksha, Ashtavidha Pariksha, and Trividha Pariksha. Among these, examination of external body structures such as the skin, eyes, tongue, hair, and nails provide valuable information regarding internal physiological status. Nakha Pariksha is one such observational method that reflects the condition of Dosha, Dhātu, and nutritional status.

According to Ayurveda, nails originate from Asthi Dhātu and therefore indicate the quality of skeletal tissue. Proper nourishment of Asthi Dhātu results in healthy, smooth, lustrous, and strong nails, whereas inadequate nourishment or tissue depletion leads to

brittle, rough, and fragile nails. Classical descriptions of nail morphology in different Doshaja Prakriti provide important clues regarding constitutional characteristics and pathological tendencies.

Modern medicine also considers nails to be indicators of systemic health. Nail abnormalities are associated with nutritional deficiencies, anemia, endocrine disorders, autoimmune diseases, liver disease, renal disorders, and mineral deficiencies. Among these, calcium deficiency has received considerable attention because of its effects on bone metabolism and epithelial tissues. Although calcium constitutes only a small proportion of the nail plate, chronic calcium deficiency affects keratinization, tissue integrity, and nail strength.

Interestingly, the nail characteristics associated with calcium deficiency resemble the features described in Ayurvedic literature for Vata Prakriti and Asthi Dhatu Kshaya, suggesting a conceptual relationship between traditional Ayurvedic observations and modern biomedical understanding. Exploring this relationship may strengthen the scientific basis of Ayurvedic diagnostics and facilitate integrative approaches to preventive healthcare.

Aim

To review the Ayurvedic concept of Nakha Pariksha in Doshaja Prakriti and conceptually correlate it with calcium deficiency.

Objectives

- To understand the Ayurvedic concept of Prakriti.
- To review the characteristics of Nakha in different Doshaja Prakriti.
- To explain the relationship between Nakha and Asthi Dhatu.
- To review calcium metabolism and deficiency.
- To establish a conceptual correlation between Ayurvedic nail examination and calcium deficiency.

II. MATERIALS AND METHODS

This review is based on classical Ayurvedic literature, including the Charaka Samhita, Sushruta Samhita, Ashtanga Hridaya, Ashtanga Sangraha, and Bhavaprakasha, along with published articles retrieved from PubMed, Google Scholar, Scopus, and AYUSH Research Portal. Keywords such as *Nakha*

Pariksha, *Prakriti*, *Asthi Dhatu*, *Calcium Deficiency*, *Nail Disorders*, and *Ayurveda* were used for literature retrieval. Information from classical and modern sources was critically reviewed and integrated to establish conceptual correlations.

Concept of Prakriti

The word Prakriti denotes the inherent constitution of an individual. It is determined by the predominance of Vata, Pitta, and Kapha Doshas at the time of conception and remains unchanged throughout life. Ayurveda considers Prakriti to be the basis of individualized medicine because it influences growth, metabolism, immunity, disease susceptibility, and longevity.

Individuals are classified into seven constitutional types:

- Vataja
- Pittaja
- Kaphaja
- Vata-Pittaja
- Pitta-Kaphaja
- Vata-Kaphaja
- Sama Prakriti

Understanding Prakriti enables physicians to predict physiological tendencies and plan preventive as well as therapeutic measures.

Nakha in Ayurveda

Nakha (nails) are regarded as indicators of internal health. They reflect the nourishment of Asthi Dhatu, which itself depends upon proper digestion and tissue metabolism. Healthy nails are smooth, strong, pinkish, lustrous, and firmly attached, whereas unhealthy nails become dry, rough, brittle, ridged, discolored, or deformed.

Ayurvedic physicians evaluate:

- Colour
- Texture
- Thickness
- Surface
- Lustre
- Growth
- Brittleness

These observations help assess constitutional characteristics and pathological changes.

III. NAKHA CHARACTERISTICS IN DOSHAJA PRAKRITI

Vata Prakriti

Due to the predominance of dry and rough qualities, individuals with Vata Prakriti usually possess:

- Thin nails
- Dry nails
- Brittle nails
- Cracked nails
- Rough surface
- Slow growth

These features resemble nail changes seen in chronic nutritional deficiencies.

Pitta Prakriti

Pitta-dominant individuals generally have:

- Pink or reddish nails
- Soft texture
- Warm nail bed
- Smooth surface

Inflammatory nail conditions and yellowish discoloration may be more common.

Kapha Prakriti

Kapha individuals typically possess:

- Thick nails
- Strong nails
- Smooth surface
- Good lustre
- Moist appearance

These characteristics indicate adequate tissue nourishment and stability.

Asthi Dhatu and Nakha

Asthi Dhatu provides structural support to the body and is responsible for maintaining bones and related structures. Nails are considered products associated with Asthi Dhatu, making them useful indicators of skeletal health. Proper nutrition, balanced Agni, and efficient tissue metabolism promote healthy nail growth, whereas Asthi Dhatu depletion leads to brittle and fragile nails.

Calcium Deficiency

Calcium is the most abundant mineral in the human body and is essential for bone formation, muscle contraction, nerve conduction, blood coagulation, and

cellular signaling. Inadequate dietary intake, vitamin D deficiency, malabsorption, hormonal disorders, aging, and chronic illnesses can result in calcium deficiency.

Clinical manifestations include:

- Bone pain
- Osteoporosis
- Muscle cramps
- Fatigue
- Brittle nails
- Hair loss
- Dry skin
- Dental problems

Nail abnormalities often appear early and may indicate chronic nutritional imbalance.

IV. CONCEPTUAL CORRELATION OF NAKHA PARIKSHA IN DOSHAJA PRAKRITI WITH CALCIUM DEFICIENCY

Ayurveda and modern medicine differ in terminology but share a common objective of understanding the body's physiological and pathological changes. Ayurveda evaluates constitutional health through Prakriti, while modern medicine assesses biochemical and structural alterations. The concept of Nakha Pariksha bridges these two systems because nails provide visible evidence of internal nutritional and metabolic status.

In Ayurveda, Nakha are closely related to Asthi Dhatu, the tissue responsible for providing structural support to the body. Proper nourishment of Asthi Dhatu depends upon efficient Jatharagni, balanced Doshas, and sequential nourishment of Dhatus. Any disturbance in digestion or metabolism leads to impaired tissue nutrition (*Dhatu Kshaya*), which is reflected by changes in nails.

Modern medicine recognizes that chronic calcium deficiency affects bone remodeling and keratinocyte differentiation. Although nails contain only trace amounts of calcium, inadequate calcium metabolism indirectly influences nail quality through impaired skeletal health, protein synthesis, and cellular function.

The classical descriptions of Vata-dominant nails—dry, rough, brittle, and cracked—closely resemble the nail manifestations commonly observed in chronic calcium deficiency.

Asthi Dhatu Kshaya and Calcium Deficiency

According to Ayurveda, Asthi Dhatu is the sixth body tissue responsible for maintaining bones, teeth, and associated structures including nails. Proper nourishment of Asthi Dhatu depends upon healthy digestion and balanced tissue metabolism.

When Agni becomes impaired, tissue nourishment is disturbed, resulting in Asthi Dhatu Kshaya.

Clinical manifestations described in Ayurveda include:

- Weak bones
- Bone pain
- Joint instability
- Fragile nails
- Hair fall
- Weak teeth

Modern medicine describes similar findings in chronic calcium deficiency, osteopenia, and osteoporosis.

Thus, Asthi Dhatu Kshaya may be conceptually correlated with chronic disturbances in bone mineral metabolism.

Samprapti (Pathogenesis)

Ayurvedic Pathogenesis

Improper Diet and Lifestyle

↓

Agnimandya

↓

Incomplete Digestion

↓

Poor Dhatu Nourishment

↓

Asthi Dhatu Kshaya

↓

Vata Vriddhi

↓

Nakha Vaikrita

↓

Dry, Brittle, Fragile Nails

Modern Pathogenesis

Low Calcium Intake

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Vitamin D Deficiency / Malabsorption

↓

Reduced Calcium Absorption

↓

Bone Demineralization

↓

Altered Keratinocyte Function

↓

Brittle and Fragile Nails

V. COMPARATIVE CORRELATION

Ayurvedic Concept	Modern Correlation
Asthi Dhatu	Skeletal System
Asthi Dhatu Kshaya	Osteopenia / Osteoporosis
Nakha	Nail Plate
Nakha Vaikrita	Nail Disorders
Vata Vriddhi	Tissue Degeneration
Agnimandya	Impaired Metabolism
Dhatu Kshaya	Nutritional Deficiency
Ruksha Guna	Dry Nails
Khara Guna	Rough Nails
Bhagna Nakha	Brittle Nails

Nail Characteristics in Different Prakriti and Their Correlation

Parameter	Vata	Pitta	Kapha	Calcium Deficiency
Texture	Rough	Smooth	Smooth	Rough
Moisture	Dry	Normal	Moist	Dry
Thickness	Thin	Moderate	Thick	Thin
Strength	Weak	Moderate	Strong	Weak
Brittleness	High	Mild	Rare	High
Growth	Slow	Moderate	Normal	Slow
Lustre	Poor	Moderate	Good	Poor

Diagnostic Importance of Nakha Pariksha

Nakha Pariksha offers several advantages:

- Completely non-invasive
- Economical
- Easily performed during routine examination
- No sophisticated equipment required
- Useful for early identification of nutritional disturbances
- Helpful in constitutional assessment
- Supports preventive healthcare

It may assist physicians in identifying individuals who require further biochemical evaluation of calcium and vitamin D status.

VI. AYURVEDIC PREVENTIVE MEASURES

Dietary Recommendations

Foods beneficial for Asthi Dhatu include

- Milk
- Ghee
- Sesame seeds
- Ragi
- Almonds
- Green leafy vegetables
- Drumstick leaves
- Black gram
- Fresh fruits

Lifestyle Measures

- Regular exercise
- Surya Namaskara
- Yoga
- Adequate sleep
- Stress management
- Daily Abhyanga
- Exposure to morning sunlight

Ayurvedic Formulations

Depending on the patient's condition and under physician supervision, commonly used formulations include:

- Lakshadi Guggulu
- Praval Pishti
- Godanti Bhasma
- Asthiposhaka preparations
- Ashwagandha
- Shatavari
- Bala

These medicines support Asthi Dhatu nourishment and overall health when prescribed appropriately.

VII. DISCUSSION

The present review demonstrates that Nakha Pariksha is more than a cosmetic examination. Classical Ayurvedic scholars considered nails to be indicators of internal tissue health, especially Asthi Dhatu. Modern

clinical practice similarly recognizes nail changes as important markers of nutritional deficiencies and systemic diseases.

The striking resemblance between Vata-dominant nail characteristics and those observed in calcium deficiency suggests a meaningful conceptual relationship. Dryness, brittleness, longitudinal ridging, and fragility are common findings in both conditions. Ayurveda attributes these changes to Vata predominance and Asthi Dhatu depletion, whereas modern medicine explains them through impaired mineral metabolism and altered keratinization. Despite differences in terminology, both systems acknowledge the relationship between skeletal health and nail quality.

However, nail abnormalities are not specific to calcium deficiency alone. Similar changes may occur in iron deficiency, zinc deficiency, protein-energy malnutrition, thyroid disorders, chronic systemic illnesses, aging, and dermatological diseases. Therefore, Nakha Pariksha should be considered a valuable screening tool rather than a definitive diagnostic method.

Future interdisciplinary research involving Prakriti assessment, digital nail morphometry, serum calcium estimation, vitamin D levels, bone mineral density, and biochemical markers could strengthen the scientific validation of Ayurvedic observations.

VIII. FUTURE SCOPE

Future research should focus on:

- Clinical studies correlating Prakriti with serum calcium.
- Digital image analysis of nail morphology.
- Association between Asthi Dhatu Sara and bone mineral density.
- Artificial intelligence-assisted Nakha Pariksha.
- Standardized Ayurvedic nail assessment scales.
- Integrative diagnostic models combining Ayurveda and laboratory investigations.

Such studies may enhance the acceptance of Ayurvedic diagnostic principles within evidence-based healthcare.

IX. CONCLUSION

Nakha Pariksha is an important component of Ayurvedic clinical examination that provides valuable

information regarding constitutional characteristics and tissue health. Classical Ayurvedic literature describes distinct nail morphology in different Doshaja Prakriti, with Vata individuals exhibiting dry, brittle, rough, and fragile nails. These observations conceptually resemble nail abnormalities associated with calcium deficiency in modern medicine.

The relationship between Nakha and Asthi Dhatu further strengthens the conceptual link between skeletal health and nail quality. Although calcium deficiency cannot be diagnosed solely through nail examination, Nakha Pariksha may serve as an economical, non-invasive screening tool for identifying individuals at risk of nutritional deficiencies and Asthi Dhatu depletion.

Integrating Ayurvedic constitutional assessment with modern biochemical investigations has the potential to improve preventive healthcare, facilitate early diagnosis, and promote personalized medicine. Well-designed clinical and observational studies are warranted to validate these conceptual correlations and establish evidence-based integrative diagnostic protocols.

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