



Scope of Kashyapa Samhita and Samudra Shastra in Enhancing the Utility of Examination of Nails in Children

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Abstract: Nails have aesthetic, functional, protective and predictive value. The uniqueness in structure and growth process of the nail is what makes them suitable for fulfilling these objectives. With a whole life ahead, examination of nails in childhood itself can provide parents and society a prolonged opportunity of ensuring that the child grows up in right direction. While modern science focuses on the medical aspects of nails, the Jyotish based literature as Samudra Shastra focuses on its future predictive aspects. In between these two lie the Ayurvedic literatures, especially the Lakshanadhyaya of Kashyapa Samhita, which offer the goodness of these two. A novel approach of simultaneous analysis of the features of nails in childhood on modern, Ayurvedic and Jyotish parameters can mutually compensate for their deficient areas in examination of nails with respect to health and future prediction. This review presents a unified examination plan of childhood nails in the aforesaid manner.

Key Words: Ayurveda, Children, Future prediction, Health, Kashyapa Samhita, Lakshanadhyaya, Nails, Samudra Shastra.

1. INTRODUCTION:

Nails are a mirror of the general health and carry signs of health and disease for prolonged periods. In addition to this, the nails in early childhood carry signs of intrauterine well being.¹ Vedic literatures also predict the future on the basis of presence of certain features in nails. All this and nail's easy accessibility makes them an ideal candidate for clinical examination in childhood.

The health of an individual can have a significant influence on their social footprint. The Vedic sciences also believe that the deeds of previous birth (*Poorva Karmas*) have an influence on the fate of the individual. In fact, Veda based literatures as Kashyapa Samhita (Lakshanadhyaya chapter) and Samudra Shastra have identified certain features of nails to be predictive of adopting a particular profession or fitting into a particular section of the society. With a whole life ahead, examination of nails in childhood itself can thus provide parents and society a prolonged opportunity of ensuring that the child grows up in right direction. While modern science exhaustively describes the signs of health and disease in nails, it is almost silent on the future predictive ability of these signs. On the other hand Jyotish based literature as Samudra Shastra focus heavily of the future prediction on the basis of some specific signs.² In between these two lie the Ayurvedic literatures, especially the Lakshanadhyaya of Kashyapa Samhita, which touches both these aspects.³ A concurrent use of modern science and ancient wisdom in the aforesaid manner can thus greatly help in harnessing the potential of the future citizen in the best possible in accordance with their physical, mental and natural predispositions (*Poorva Karmas/Prarabdha*). However no such study on unified approach has been done yet.

2. AIMS:

As said above, simultaneous analysis of the features of nails in childhood on modern and Vedic parameters can thus mutually compensate for their deficient areas in examination of nails with respect to health and future prediction. Hence an attempt has been made here to present a unified examination plan of childhood nails on the basis of various descriptions in modern science and some Veda based literatures, with an aim to identify important signs and pointers of health, disease or future, right in the early phase of human life.



3. METHODOLOGY:

For the present study, the focus was on features of pediatric nails and the literatures consulted belonged to three broad groups- the modern medicine, Ayurveda and Jyotish Shastra. The literatures of modern medicine included Gray's Anatomy, Nelson Pediatrics and various research journals. The literature of Ayurveda was mainly the chapter Lakshandhyaya of Kashyapa Samhita whereas the literature of Jyotish was specifically the Samudra Shastra. As per the aim of this study, the important clinical features of the nails have been taken from the aforementioned modern literatures, whereas the future predictive elements have been taken from ancient literatures, Lakshanadhya and Samudra Shastra. Also, wherever possible an attempt has been made to correlate these with each other so that a holistically useful and mutually inclusive clinical examination of pediatric nail can be achieved.

4. REVIEW AND DISCUSSION:

4.1 Importance of examination of nails

It has recognized that many features of nail can provide a critical insight into the health of an individual.⁴ However, the Vedic sciences have also identified those features of the nails which can predict the future of an individual. A careful study of various features along the length and breadth of the nail can provide a historical record of local and systemic health.⁵

4.2 Higher importance of toe nails than finger nails

The finger nails take 3-6 months to re-grow completely, whereas the same requires 12-18 months for toe nail. So toe nails carry signs of past health for a more prolonged period of time.⁶ The toe nails are subjected to more harsher physical conditions, making them better reflectors of endurance of nails than the finger nails. This may have been the reason behind the focus of Lakshanadhya on the nails of lower limbs.

4.3 Importance of examination of nails in children

Healthy nails in an infant suggest a healthy prenatal life which is the foundation to living a happy and healthy life. Apart from this, the Vedic literatures believe that some predictive signs in nails may be observed right in the childhood, owing to the influence of *poorva karmas* too. A critical observation of these features may indicate that some physical and mental characteristics may make a child naturally tuned for a particular future role or profession in the society. Modern studies have recognized that the rate of variations in nails in children may range from 3%-11%,⁷ which may be genetical, congenital, acquired or a normal variant.

4.4 The normal nails

4.4.1 Modern perspective

4.4.1.1 Parts of a nail

The 'nail unit' of a finger comprises of a nail plate (nail body), nail bed (sterile matrix), germinal matrix and the skin/soft tissue surrounding the four sides of a nail. This junctional region of germinal and sterile matrix is also visible, peculiarly as a whitish crescent shaped area, the 'Lunula'. However it may sometimes not be visible even in healthy people.

4.4.1.2 Determinants of the health of nail

Genetics, nutrition, healthy metabolism and freedom from diseases are the major factors which determine the health of nails.

Dominance of nail matrix in determining the health and physical characteristics of nail

'Nail matrix' has blood vessels, lymphatics and nerves and is the only active part of a nail. It can be subdivided into two parts, germinal matrix and sterile matrix. The major function of germinal matrix is to generate new cells for production of nails whereas that of sterile matrix is to provide nutrition to the nail plate and keep the nails attached firmly to the underlying tissue. A permanent damage to matrix terminates the growth of nails, but with a less severe injury, the matrix heals and the new nail appears after several weeks. Minor damage to matrix produces transient growth disturbance leading to temporary alterations in the features of nail, which appear in forms as transverse lines/ridges across the nails (e.g. Mee's/Muehrcke's/Bee's lines), pitting, bruising, unevenness.⁸

4.4.1.3 Two important reflectors of nail health

The health of a nail is reflected in the following two major domains-

i) The 'growth rate' of nails

The health of matrix is the chief determinant of the healthy growth of nails. However the effective rate of growth of a nail is dependent upon a sum total of many factors as age (faster in younger ones), gender, season, exercise, nutrition and genetic factors, all of which influence nail matrix the most.⁸

ii) Physical characteristics of a healthy (normal) nail

The health of a nail is reflected in following features of nails-

Shape and contour: The surface and free margin are shiny, smooth and uniform, i.e. has no cracks, fissures or pits. The free edge projects slightly beyond the nail bed and has a slight upward convexity.⁶



The built: The cuticle, nail folds and nail plates are intact, healthy and well attached. Healthy nails are encircled by health skin.

The color: The nail (nailbed) is pale-pink colored and devoid of any persistent spots or markings. However the free margin of nail is white.⁹

4.4.2 Healthy nails in perspective of Lakshanadhyaya and Samudra Shastra

Relation between bones and nails is well accepted by modern science. Ayurveda considers nail as *Mala* of *Asthi* (bone). Hence firmness is the most important property of nails too and a sign of *Asthi Sara Purusha* which reciprocates with long life.¹¹ Conversely, splitting, breaking, excessive dryness or fall of nails is considered as a sign of *Asthi Dhatu Kshaya*. From *doshic* point of view, splitting or cracking of nails (*Nakhbheda*) has been considered as a *Vata nanatmaja* disorder. Ayurveda considers that *Vata dosha* resides in *Asthi*.²¹ Hence its vitiation plays important role in health and diseases of bones and nails. Abnormalities in nails are a manifestation of abnormalities in *Asthivaha Srotas*.¹²

Healthy nails thus increase the likelihood of a happy life ahead. Lakshanadhyaya and Samudra Shastra have specifically identified those features of nails which are predictive of a reputed status in society, happy or long life.

i. Features predictive of future as a Kinghood

An overall good health makes one naturally fit to handle leading positions in society. Healthy nails are a good indicator of health and vigor, in turn suggestive of a longer lifespan. Hence Lakshandhyaya and Samudra Shastra have equated healthy nails broadly with a future of eminence in society (the highest one in ancient times being the King) and long life.

As per Lakshanadhyaya: Nails which are shiny-smooth in consistency, thin (not excessively) and coppery colored suggest future as a ruler or a high rank administrator.¹³

As per Samudra Shastra: Coppery nails are predictive of future as a King.¹⁴

ii. Features predictive of future as a mentor

A healthy mind and body is also required to become a successful mentor. Hence after kinghood, the next best healthy nails can be expected to be possessed by a child worthy of emerging as a successful mentor.

As per Lakshanadhyaya: Well built nails suggest future as a mentor.¹³ As said above, well built (*sthula*) nails suggest *Asthi sarata* which equates with longevity and energetic, active and resilient personality, making one fit for the role of a mentor.

iii. Features predictive of long life

As per Lakshanadhyaya: Striped and long nails suggest a long life.¹³ Here it is important to note that some amount of longitudinal stripes are commonly visible in healthy nails because of tiny longitudinal grooves which bind epidermis to dermis and also because of continuous growth of keratinocytes in nail plate. Also, only a healthy nail can project beyond the free margin of nail bed while maintaining its normal features.

iv. Features predictive of a happy life

As per Lakshanadhyaya: Nails which are properly developed (*samunnata*), tapering at margins (*nipidanta*) and small (not excessively) suggest a happy life ahead.

As per Samudra Shastra: A person whose five specific body parts are small in size (*panchashookshma*), leads a happy and long life. Nail is one of them.¹⁴ In general, their being small sized means in comparison to other body parts.

Kashyapa Samhita and Samudra Shastra, both have thus emphasized on the small size of nails which suggests that such a child has normal genetic configuration and is living in a reasonably good environment, which translates well into a happy, healthy and long life. Large sized nails are found in clubbing (cardiovascular diseases), onychomycosis and some nail dystrophies.

4.5 The abnormal nails

Onychodystrophy (dystrophic nail) is a blanket term for all the abnormalities of nails, i.e. abnormalities in shape, texture, color or growth due to various etiologies.²⁶ However conventionally it does not include the onychomycosis.

4.5.1 The domains of abnormality in nails

i. Shape of nail: The arch, flatness and hooking of the nails are decided by the shape of the tip of terminal phalanx which is in turn determined genetically and environmentally.

ii. Hardness and flexibility of nails: It is mainly due to the compressed layers of keratin. Water content of the nail plate also has a small role. Normal water content in a healthy nail is 18%, but if this reduces to less than 16% the nail becomes brittle and if it rises above 25% nail becomes soft. Calcium has a minimal role in it as calcium content of nail plate is less than 0.2%.¹⁵

Perspective of Lakshanadhyaya on dry nails

Dry nails suggest a unhappy life ahead. A recurrent state of dehydration may be seen in diseases as non-celiac gluten sensitivity, IBS and conditions causing adipsia or hypodipsia such as congenital or acquired abnormalities of brain especially involving hypothalamus/pituitary/corpus callosum. The repeated tendency to dehydration predisposes them



to altered renal functions, renal stones, hypertension and reduced mental performance.¹⁶ Such a child is naturally predisposed to lead a miserable life.

iii. Translucency of nails: The newly generated cells from matrix push up and compress the older cell layers of nail plate, eventually making them flat and translucent.

iv. Permeability of the nails: Nails are more permeable than skin. Hence water, urea and many chemicals can permeate it.¹⁷

v. Adhesiveness of nail plate to nail bed: A healthy nail plate remains tightly adhered to the highly innervated nail bed making removal of nail plate severely painful. Like skin, the nail bed also has two layers, dermis and epidermis. Epidermis is bonded to dermis by means of tiny longitudinal grooves which become more visible in conditions where the nail plate thins out, e.g. in old age, progeria, severe PEM.

vi. Color of nail: Nail plate itself is avascular, so its pink color is basically due to the capillaries in the underlying nail bed. White or lighter shades of pink are seen in low haemoglobin levels. Whereas oxygen deprived nail bed looks bluish purple, which is a sign of peripheral cyanosis.¹⁸

4.5.2 The causes of abnormal nails

4.5.2.1 The common environmental factors influencing the health of nails

The abnormalities of nails may be due to some local pathology of nail or due to some systemic disease. As per Vedic sciences, the *Poorva Karmas* can also lead to abnormal nails.

i. Role of nutrients in health of nail

Nutrients ensure the health of nails by playing important roles in the functioning of the nail matrix.¹⁹ Deficiency of some nutrients may also cause nails to become dry and brittle. Protein deficiency is the main culprit in this regard because keratin is a protein in itself. Deficiency of some micronutrients may also have a role, e.g. Iron, Calcium, Biotin, Vitamin B12, folic acid, Vitamin A, Vitamin D, Omega 3 fatty acids and other essential fatty acids especially the linoleic acid (causes splitting, flaking). Iron deficiency can lead to flattening, concavity and vertical ridging. B12 insufficiency onychodystrophy is characterized by excessively dry, dark and curve edged nails. Due to effect on production of RBC and oxygenation, discoloration of nails is seen both in deficiency of B12 and folic acid.

ii. Role of infections in health of nail

Germinal matrix is protected from bacteria, germs and dirt by a protective seal like barrier of thin layers of dead skin, the cuticle. Infections usually act by altering the normal structure and function of the nail matrix, but they can affect the nail plate directly also. Hence peeling, drying, ridging, malformation, breaking and discoloration of nails can also be a manifestation of infection of nail.²⁰

The fungal infection of nails, onychomycosis, is the commonest cause of infections of nails which must be suspected if nails develop thickening, discoloration or brittleness/crumbling. It usually affects the toe nails, accounting for almost half of abnormal toenails. Onychomycosis is basically a chronic low grade inflammation and changes occurring due to production of keratinases by these organisms.²¹

iii. Nails in different diseases

Abnormalities may also appear in nail in some chronic illnesses and psychological disorders. E.g., telangiectasia, koilonychia or pitting of nails suggests a probability of connective tissue disorder.²²

4.5.2.2 The genetical causes

Onychodystrophy may be a component of some genetical diseases, the commonest one being ectodermal dysplasias (EDs). The alterations in nail are non-specific.²³ EDs usually do not affect the longevity, however as the child grows he may get confounded and dispirited by his ugly look and out of frustration may resort to unsocial activities.

4.5.2.3 Age related changes in nail

A well grown nail at birth is a good indicator of the fetal intrauterine health. At 4-6 weeks, most infants develop a single transverse groove at PNF owing to metabolic changes after delivery, which eventually vanishes out distally with the growth of nails. In early infancy it is normal to see transient physiological onychoschizia with transverse and lamellar splitting, especially on big toe and thumb.¹ The nail plate is relatively thin during first one to two years of life because of which slight spooning is normal in this age. In some newly born babies physiological clubbing may be seen due to tendency of the nail to curve over the finger tip towards the pulp. After nine years age, the nail plate thickens and such changes resolve spontaneously. With ageing, it is normal for the nails to develop some longitudinal ridging and beading.²⁴

4.5.3 The two major categories of abnormal nails

4.5.3.1 Abnormality in shape and texture

i. Beau's lines: Nails may develop transverse linear ridges which are called as Beau's lines. These are representative of temporary shutdown of nail matrix causing a temporary arrest of formation of nail plate. It can be seen any disease which is severe enough to interrupt the normal growth of nail. E.g., in zinc deficiency (including acrodermatitis



enteropathica), chronic fever, long standing/severe illness, cold exposure in Raynaud's disease, pemphigus, measles, mumps, occasional trauma etc.¹⁹

ii. Onychorrhexis: It is the name given to the longitudinal ridges running all the way from cuticle to tip of nail. Although seen normally with ageing, they may also occur in malnutrition, endocrinal imbalances (as hypothyroidism), skin disorders, serious systemic illnesses and congenital nail dystrophy.²⁴

iii. Dystrophy, roughness and coarse pitting of nails: They can be seen together in dermatitis, especially the atopic dermatitis.

iv. Soft and thin nails: Commonly seen in diseases as Kwashiorkor.

v. Thick, hard, curved, discolored nails: They are seen in conditions as onychomycosis, onychogryphosis, etc.

vi. Brittle nails: It may occur from a wide variety of reasons, especially in states of poor nourishment, e.g. PEM, anorexia nervosa, deficiency of micronutrients [as zinc, magnesium, iron, biotin, calcium, vitamin A (important for tissue differentiation), vitamin D], brittle nail syndrome (BNS), etc.¹⁹

Perspective of Lakshanadhyaya and Samudra Shastra on cracked or flat nails

As per Lakshanadhyaya: Cracked (*sphutita*) nails suggest a life dependent on others, as of a slave.¹³ Presence of cracked nail in a child suggests inadequate health of nail matrix probably due to a prolonged state of intrauterine malnutrition, reflecting a significantly low socioeconomic status. Malnutrition of such a magnitude can lead to compromised physical and mental growth, reducing the person's ability to live a happy, healthy and independent life.

As per Samudra Shastra: Presence of flat and/or cracked nails is predictive of poverty.¹⁴ Flat nails are seen in the initial stages of clubbing, nutritional deprivation, ectodermal dysplasias, etc. Cracked nails are seen in BNS. Presences of such signs in a child indicate that such a child is likely to grow and develop in a compromised environment, eventually leading a miserable life.

vii. Pitting in nails: It is seen in psoriasis, Reiter's disease, alopecia aerata, incontinentia pigmenti, etc.

viii. Fissured nails with impaired growth of nails: They are seen in diseases as Marasmus, deficiency of vitamin A and B.

ix. Clubbing: It is seen in disorders of various organ systems, e.g. pulmonary (80% cases of clubbing), cardiovascular, gut, hepatic, metabolic (e.g., in cretinism). In general, it is suggestive of poor *Prana shakti*. It is mainly the change in periosteal vessels which bring about clubbing.⁴ Two types of clubbing are seen, the parrot beak type and the commoner drum stick type.

x. Parrot beak shaped nails suggest chronic cough. In general, it is suggestive of deranged *Kapha*.

xi. Spoon shaped nails (Koilonychia): It is believed to occur because of a relatively low set distal matrix relative to proximal matrix which eventually causes nail plate to grow downwards while growing towards the nailbed.¹⁹ Iron deficiency is its commonest cause. It can be genetic, environmental (e.g., nutritional, endocrine disorders as hypothyroidism) or idiopathic (e.g. in newborn).

xii. Trachyonychia: Trachyonychia is a distinguished onychodystrophy in which the nails become thin, brittle, rough (eventually like a sandpaper), lustreless, opaque and characteristically full of accentuated longitudinal ridges. It can occur in one or more nails and the severity may vary in different cases and nails. Trachyonychia in all the 20 nails is specifically termed as 'Twenty nail dystrophy'. Trachyonychia is more common in children, with peak at 3 to 12 years. Its pathogenesis is unclear and is believed to be an immunological and/or inflammatory response to nail matrix.²⁵

Perspective of Lakshanadhyaya on dystrophic nails which are voluminous/protuberant, white and uneven

Voluminous/protuberant (*sthula*), white and uneven (*vishama*) nails are suggestive of a wandering life.¹³ This indicates a perplexed state of mind as a result of which such a child may become a monk or may be engaged in activities demanding frequent movements to different places. Trachyonychia is one such disease in which aforesaid features of nail are seen and it being a disfiguring immunological disease may keep the sufferer baffled and so he may keep on wandering from place to place in search of cure. Another set up is of a poor person who wanders in search of food and shelter and is liable to suffer from chronic malnutrition and malabsorption syndrome manifesting in the form of clubbing, pallor, leuconychia, etc. A wandering life also predisposes one to traumatic injuries to nails (especially of foot) which may lead to onychomycosis and onychodystrophy. Pinched up and rounded nails are also seen in Vitamin B12 deficiency. Hence voluminous, white and uneven nails relate to a tendency to chronic malnutrition leading to a mentally and physical compromised state.

xiii. Anonychia: It refers to absence of nail plate, with or without malformations of digits. It can be due to trauma, some congenital disorder or sometimes because of zinc deficiency.

xiv. Square nails: In general, it suggests a possibility of hormonal imbalance.

xv. Periungual fibromas: Their appearance in late childhood should alarm one for the possibility of tuberous sclerosis.



xvi. Onycholysis and Onychomadesis: Some diseases alter the adhesiveness of nail plate to nail bed, e.g. fungal infection, psoriasis or injury to nail. Separation of nail from distal nail bed (onycholysis) causes its loosening and gives it an ugly appearance. It can be seen in psoriasis, trauma, hyperthyroidism, lichen planus, candidiasis, ringworm, iron deficiency, connective tissue disorders, etc. Onycholysis may extend proximally causing a complete separation of nail plate from nail bed which is then called as onychomadesis which occurs due to temporary arrest in the function of nail matrix.²⁷ Periodic spontaneous shedding of nail can occur in chronic hypocalcemia.¹⁹

xvii. Nail patella syndrome: It is a rare autosomal dominant disorder with multisystemic involvement characterized by a classic tetrad of dysplasia of finger nails, hypoplasia/absence of patella, presence of iliac horns and deformities of elbow.²⁸

Perspective of Lakshanadhyaya on large sized dystrophic nails

Larger (than normal) nails suggest a medium life span or a mediocre life. Abnormally large nails can be seen in chronic conditions, e.g. Koilonychia, clubbing, onychomycosis, etc. All these naturally reduce the probability of leading a long and happy life.

Perspective of Lakshanadhyaya on depressed and oyster or husk shaped dystrophic nails

Such nails suggest a poor life ahead.¹³ Depressed nails, such as koilonychia, is seen in various nutritional deficiencies, hormonal imbalances, congenital syndromes, etc. 'Oyster like nails' imply broad, non-uniform, asymmetrical, grooved nails which has been clearly identified as onychodystrophy and is seen in different diseases and deficiencies as discussed above. Similarly 'husk like nails' imply thin, small, soft and brittle nails which is seen in underdeveloped nail matrix due to significant nutritional deficiencies. Such deficiencies or diseases will also negatively affect the physical and mental growth. Hence oyster like and husk like nails in childhood suggest long standing poverty, in turn suggesting misery in later life too.

Perspective of Samudra Shastra on husk shaped dystrophic nails

Husk like nails is predictive of impotency (*Kleehta*).¹⁴ Onychodystrophy can be seen in various hormonal disorders as hypothyroidism, immunological diseases as celiac disease, chronic illnesses and nutrient deficiencies. Manifestations of such disorders may make nails in husk like small sized, thin, soft and brittle, along with a widespread effect on other organ systems including reproductive system dysfunction which can be reflected in the form of infertility or impotency. Those having abnormal colored and/or ugly looking nails always look at others with bad intentions and find fault in others.¹⁴ Abnormal colored and ugly looking nails can be separately found in a large number of nutritional, hormonal, metabolic diseases and malignancies. These two are found together in onychomycosis, which is in turn indicates immunodeficiency. Such a person can be expected to remain cranky and develop an obsessively fault finding behaviour.

Perspective of Lakshanadhyaya on flower shaped dystrophic nails

Flower shaped nails are suggestive of becoming a robber in future.¹³ Nails affected by onychodystrophy predisposes him/her to nail infections and injuries, which dystrophies the nails further. All this, along with involvement of other body parts in diseases as in EDs, predisposes the person to increasing and persistent depression, especially because of abnormal physical appearance. Such a person can resort to anti-social activities.

4.5.3.2 Abnormality in color (Chromonychia)

Chromonychia can be of multiple types, the common ones being-

i. Blue/purple nails: This happens due to congestion and/or central hypoxia because of weak lungs and/or heart.³⁹

ii. White nails: It may involve a nail completely or partly in punctuate or reticulate manner. It is normal to have one or more such spots or lines in children and adults which is then termed as leuconychia (probably due to minor trauma induced injury to proximal nail bed).²⁹ However unlike the pathognomic Mee's and Muehrcke's lines, the leuconychial spots are not always parallel to edge of lunula, are not uniform, do not involve the nail completely and do not appear at relatively same place on different nails.²⁶

Hypoalbuminemia due to any cause produces a characteristic whiteness in nails in the form of pairs of narrow parallel transverse white bands (Muehrcke's lines) extending all the way across the nail. Muehrcke's lines disappear when the hypoalbuminemia resolves. As these bands are due to abnormal vasculature in nail bed, these lines do not move with the growth of nails and fade out on application of pressure. True leuconychia does not disappear on application of pressure and is due to abnormality in nail plate itself (e.g. onychomycosis).²⁹

In severe hypocalcemia, all nails may develop transverse leuconychia (TL). TL appears as opaque white bands occurring at almost same relative position in different nails. Hypocalcemia induced digital arteriolar spasm and disorganized formations of hard keratin in nail are believed to cause such a leuconychia.³¹

In liver disease and less commonly malnutrition, CHF, diabetes mellitus and hyperthyroidism, apparent leuconychia at proximal nail bed along with a 0.5 to 0.3 mm wide band of pink to brownish discoloration at distal end. This is called as 'Terry's nails'. The whiteness is believed to be due to hyperplasia of connective tissue between bone and nails, whereas the brownish discoloration is due to many telangiectasias developing in that region.³⁰



Perspective of Lakshanadhyaya on dystrophic nails characterized by white color (leuconychia) and round shape (clubbing?)

As per Lakshanadhyaya: Such nails suggest a short lifespan.¹³ The presence of these two signs right from childhood point towards presence of bad prognostic illnesses as of cardiopulmonary system, endocrinal system, immunological disorders or even malignancy. Lakshanadhyaya further states that a child having discolored nails can be expected to become hooked to bad vices in later life.¹³ Facing ill effects of the pathology ever since childhood, such an adult is expected to be physical and/or mental frail, which in turn instills a sense of depression, ultimately falling prey to antisocial activities.

Perspective of Samudra Shastra on dystrophic nails characterized by white spots type of leuconychia

Presence of white spots in the nails is predictive of unhappy life in males and adultery in females.¹⁴ As discussed above, leuconychia can be seen in hypoproteinemia as in liver diseases, leading to reduced libido and hence a unhappy adulthood. Similarly, PEM, zinc deficiency, hypocalcemia, endocrinal dysfunctions, immunological disorders, etc may also lead to an unhappy life ahead. Even hypersexuality may be seen in a number of mental and neurological disorders as a result of neurotransmitter imbalance. Studies have shown that libido is regulated by the temporal and frontal lobes of brain and hence injuries or malfunctioning of this region can cause altered sexual behaviour.

iii. Pale nails: Its most common cause is Anemia.^{xx}

iv. Yellow nails (Xanthonychia): Common causes are lung diseases, nail infections, psoriasis, lymphedema, nephrotic syndrome, liver dysfunction, peripheral vascular disease, Raynaud's disease, progeria, diabetes mellitus, tuberculosis, thyroiditis, familial amyloidosis with polyneuropathy, contact/topical, thermal injury, AIDS, Yellow nail syndrome.³²

v. Excessively red nails: It is commonly seen in polycythemia.

vi. Red or white longitudinal streaks which cross lunula also: These are seen in Darier disease.³³

vii. Distal 20-50% brown/red/pink but proximal part is white (Lindsay nail or half and half nails) or simply brown at tip: This is almost specific for renal failure, although less commonly in pellagra and normally in some.³³

viii. Hyperpigmentation of all nails: It is seen in vitamin B12 deficiency. The probable mechanism being disinhibition of tyrosinase consequential to fall in levels of reduced glutathione.¹⁹ Brown discoloration of nail plate can also be caused by hyperthyroidism.³⁴

ix. Blackish pigmentation of nail plate (Melanonychia): In malnutrition (especially Vitamin D deficiency), longitudinal melanonychia is seen. It occurs because of enhanced melanin production in the nail matrix.¹⁹ Malignancy should be ruled out in any case of change in pigmentation.²⁹

x. Horder's line or Splinter haemorrhages: They are visible as dark red to blackish spots in nail bed. Minor trauma is the commonest cause. The other ones being scurvy, hypertension, vasculitis, antiphospholipid syndrome, SLE, subacute bacterial endocarditis, rheumatoid arthritis, chronic glomerulonephritis, cirrhosis, malignancy, psoriasis and trichinosis.³⁵

xi. Nail fold thrombi: They can be seen in conditions as scleroderma or other collagen vascular diseases.³⁵

xii. Green to bluish-black discoloration: These can occur due to the subungual debris and anthocyanin pigment produced by severe infection with Pseudomonas bacteria. Onycholysis and chronic paronychia may be also be present.³⁶

xiii. Discoloration of nail plates: It is commonly seen in Psoriasis.³⁷

xiv. Diseases causing alterations in Lunula: Lunula although normally invisible in some, may become invisible in poor nutrition or hypothyroidism. Poisoning (copper sulphate) and Wilson's disease may cause blue half moons. Dusky red half moons may be seen in conditions as cardiac failure, lupus, dermatomyositis, arthritis, alopecia aerata.¹⁸

4.6 Some important clinical insights into Ayurvedic aspects of a nail

Features as slender, thin, dusky and less shiny nails suggest a Vata dominant nail. Whereas brittle, thin, striated (e.g. in hypoalbuminemia), bitten tips (suggestive of anxiety), dry (as in severe PEM), cracked, pitted and blue or black nails are suggestive of deranged Vata (and resulting malabsorption) or affliction with Vata.

Features as medium size, soft, pink, nails suggest a Pitta dominant nail. Whereas tender, excessive redness (e.g. in polycythemia), yellow, stepped up distal (almost one third) of nail are suggestive of deranged Agni (and resulting malabsorption) or affliction with Pitta.

Features as long, broader, thick, strong and oily nails suggest a Kapha dominant nail.³⁸ Whereas parrot beak shaped nails (as in chronic cough), protuberant distal end or transverse groove (running from one side to other) [can be seen in chronic pulmonary infections] are signs of afflicted Kapha.

5. CONCLUSION:

This study can be viewed as a platform where all the important pediatric clinical features of nails have been described and wherever possible, their future implications have been made. This study also shows that the Lakshanadhyaya, stands as a bridge between the modern medical science and the Jyotish based literature as Samudra Shastra, because it carries



the goodness of both in the sense that it describes the medically important signs of nails in children and their correlation with the future too. An amalgamated examination of child taking in to account all the above three categories thus offers a broad picture of child's health, strengths, weaknesses and future too. However, a long term study is needed, firstly to verify the correlation of the future predicting ability of physical signs already described in Lakshandhyaya or Samudra Shastra and secondly to look for newer predictions that can be made in relation to various clinical signs of nails described in modern science.

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