



THE NAIL AND ITS DISORDERS

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ABSTRACT:

Nails look shiny and have a same color. As peoples are aged ,they may have vertical bumps, or their nails may become a little brittle, but this is harmless. Some of the chemicals used in the nail cosmetics effect the nail. Some other conditions can lead to change in the physical appearance of nail structure . However, it is very hard to explain in few paragraphs. The appearance of nail is not enough to assess the disease of the patient ,but it is one of the symptom which is useful for diagnosis by physical examination. Some of the disease can caused by the medications.It shows symptoms like changes in color, thickness, and shape of nails, brittle nails, hollow nails, bleeding around the nails, swelling and redness around the nail, pain around the nails, exfoliation of the fingernail from the skin. These changes in nails can be occurred due to several conditions. This review concentrates on each and every physical change observed in nails, physiological changes in body due to which these disorders occur and prevention to some common disorders.

KEY WORDS :

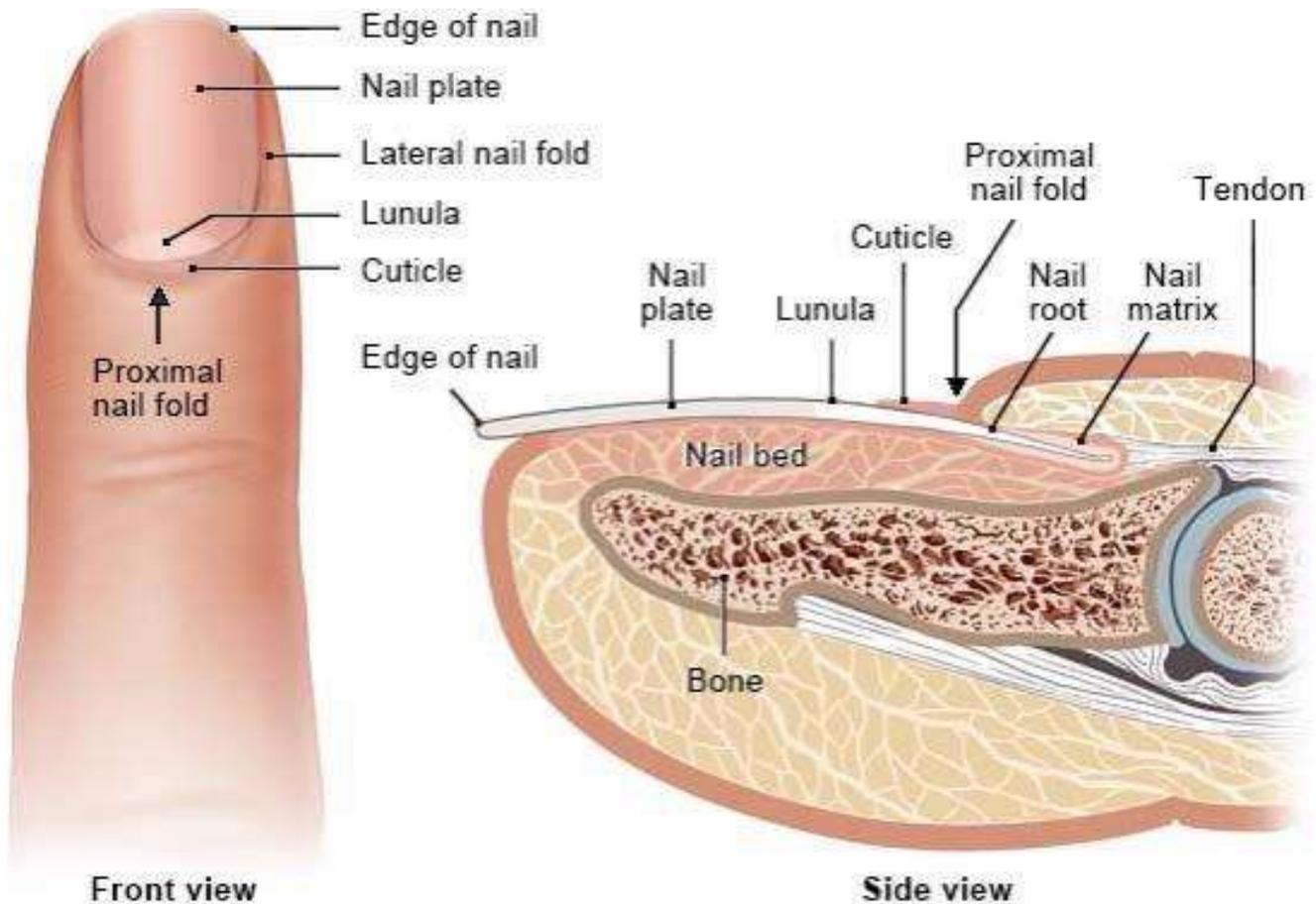
Nail ,Nail disorders,IBD,AIDS, Jaundice, keratinous, Translucent .

INTRODUCTION :

In the anatomy of humans nails grow on the back of each finger and toe at its outer end .

These nails are plate like keratinous,translucent structure that consists of highly specialised epithelial cells.

These nails grow from a deep groove in dermis of skin.



STRUCTURE :

Nail matrix is the active tissue that generate cells,it is also known as matrix unguis,keratogenous membrane / onychostroma.matrix produces cells that become nail plate.the matrix will continue to produce cells as long as it receives nutrition and remains in healthy condition.

Nail plate cells are made ,they push older nail plate cells forward ,in this way older cells become compressed ,flat and translucent.this makes the capillaries in nail bed below visible resulting in a pink colour.

The lanula is visible part of matrix which is whitish crescent shaped base of visible nail.the lanula can best be seen in thumb and may not be visible in little finger .these appears white due to reflection of light at a point where nail matrix and bed meet .Nail bed is beneath the nail plate nerves and blood vessels found here supply nourishment to entire nail unit.It is made up of two types of tissues one is dermis and other is epidermis.

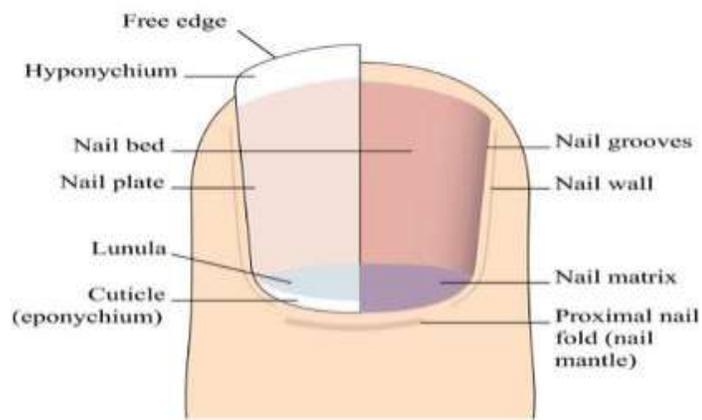
The epidermis is attached to dermis by tiny longitudinal grooves called matrix crests,in old age nail plate becomes thinner and grooves becomes more visible .

The nail sinus is where nail root is i.e., base of nail underneath the skin. It originates from actively growing tissue below matrix. The nail plate sometimes referred to as nail body is visible hard nail area from nail root to free edge and made translucent keratin protein.

Several layers of dead compacted cells causes nail to be strong and flexible. The nail plate is strongly attached to nail bed and does not contain any nerves or blood vessels. The free margin / distal edge is anterior margin of nail plate corresponds to abrasive or cutting edge of nail. The hyponychium is epithelium located beneath nail plate at junction between free edge and skin of fingertip. It forms a seal that protects nail bed. The onychodermal band is seal between nail plate and hyponychium. In that portion of nail where nail bed ends and can be recognised in fair skinned people by its glassy, greyish colour. It is not visible in some individuals where it is highly prominent on others.

EPONYCHIUM :

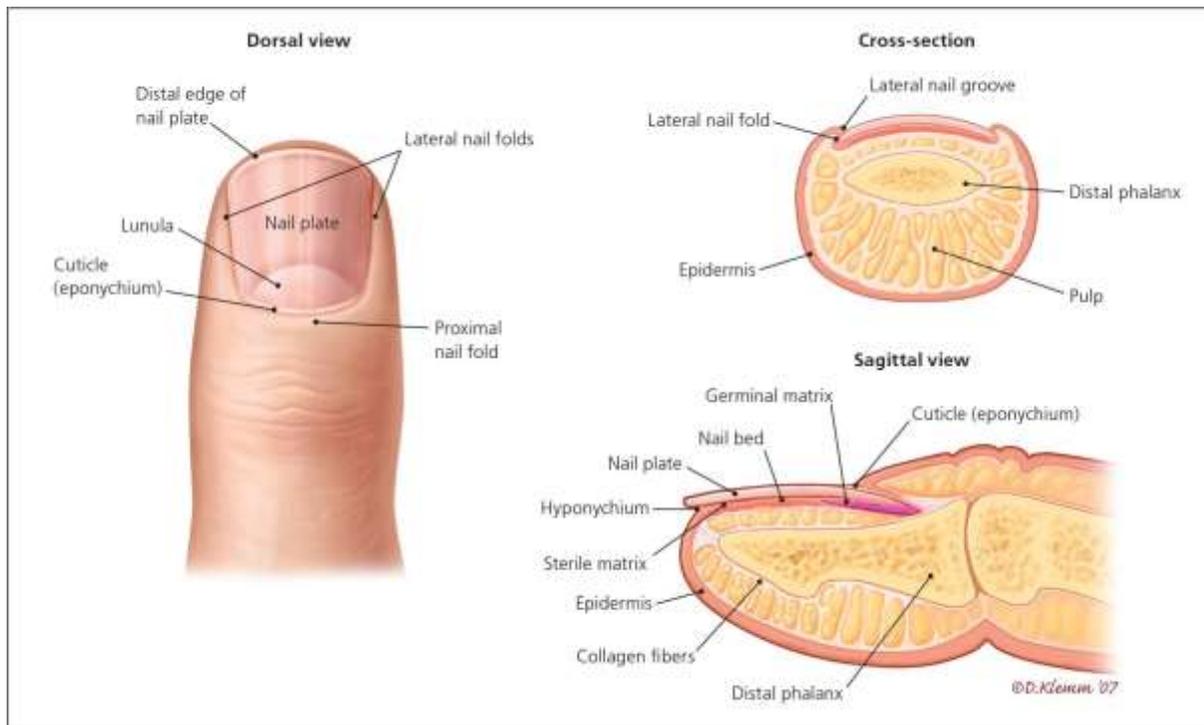
Together the eponychium and the cuticle form a protective seal. The cuticle is semicircular layer of almost invisible dead skin cells that ride out on and cover back of visible nail plate. The eponychium is the fold of skin



cells that produces cuticle. This is cuticle that is removed during manicure but living part should not be touched due to risk of infection. This extends from posterior nail wall onto base of nail. The nail wall is cutaneous fold overlapping the sides and proximal end of nail. The lateral margin lies between the nail wall on sides of nail and the nail groove or fold are cutaneous slits into which lateral margins are embedded.

PARONYCHIIUM :

The paronychium is a soft tissue border around nail and paronchia is an infection in this area.this is the skin



that overlaps onto sides of nail plate also known as paronychial edge.

HYPONYCHIUM:

This is the area of epithelium particularly thickened portion underlying free edge of nailplate.

NAIL FUNCTIONS:

A healthy finger nail has function of protecting fingertip and surrounding soft tissues from injuries acts as a counter force when end of finger touches an object, thereby enhancing the sensitivity of finger tip. finally, the nail functions as a tool enabling so called extended precision grip .

GROWTH :

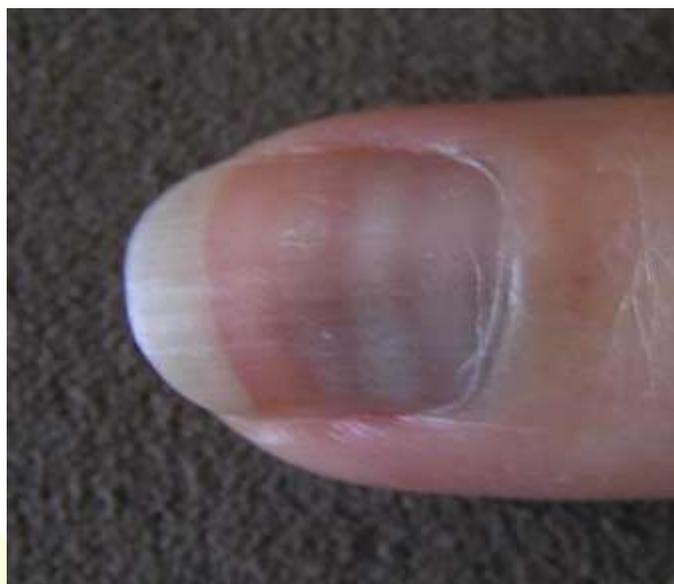
The growing part of nail is under the skin at nail, proximal end under epidermis, which is only living part of a nail .In mammals the growth rate of nails is related to the length of terminal phalanges .In humans the nails of index finger grows faster than that of little finger.

NAIL AND HEALTH :

The health condition of the body is regularly linked to gateway through the nails they may be different in shape and size because of systemic issues that manipulates the natural growth .A tiny piece of white here ,clots in the skin could all be symptoms of ill.Symptoms shown by your liver,lung,or ,heart can reveal by your nails.

ALDRICH- MEES LINES :

Aldrich mees line is a white cross hair .It could be an indication of arsenic poisoning .Aldrich mees lines also known as leukonychia striata ,are white lines of discoloration across the nails of the fingers and toes .As the nail grows they move towards the end ,finally disapper when they cut.Mees lines looks alike to injury to



the nail.Mees lines was appear after an episode of

poisoning with arsenic ,thallium,selenium,opioid MT-45 and also appears when the person is suffering with kidney failure .

PITTING :

Pitting refers to small pits in the nails. It is commonly seen in people with psoriasis,that makes the skin dry,red and inflamed .



CLUBBING :

When clubbing ,nails are thickens and bend around fingertips .This may cause lack of oxygen in the blood .It can cause the diseases like cardiovascular ,IBD,liver diseases,lung diseases and AIDS .



LEUKONYCHIA :

The uneven spots and lines on the nails are known as leukonychia.This may arise due to mild trauma but not noxious to healthy people as time to time leukemia caused by poor health or malnutrition.risk factors can be infections ,metabolic disorders ,systemic disorders and some drugs .



Research Through Innovation

BEAU LINES :

The lines that cross the nail is known as beau lines .It is a symptoms of malnourishment others are measles ,mumps,high body temperature,scarlet fever ,peripheral vascular disease ,pneumonia ,diabetes,a crunch



of zinc .

KAILONYCHIA :



It is defines based on the shape of nails .This nails bend like a spoon. The causes are malnourishment and auto immune disorders .

ONYCHOLYSIS:

When the nail plate stepbacks from the nail bed , a white discoloration occurs known as onycholysis .It can caused by sepsis,products used to nail like nail cosmetics and psoriasis and thyroid disease .

YELLOW NAIL SYNDROME :

The nail become thicker and doesnot show any growth as usual .sometimes the fingernails do not contains cuticle and even stepbacks from the nailbed .The causes may be internal malignant tumor lymphedema,swelling of the hands ,pleural effusion ,fluid retention between the lungs and chest , respiratory diseases and arthritis .

TERRY NAILS :

The presence of a dark band on the tip of each nail is known as Terry nail.It caused by ageing ,it can cause congestive heart failure ,diabetes ,and liver diseases .

RIDGES IN FINGER NAILS :

The finger nails is arrangement of living skin cells of finger .Some of the conditions like eczema can cause bulging of nails . Deficiency of protein,calcium , zinc,vitamin A can cause ridges in finger nails .These ridges may be horizontal or vertical.

BLACK LINES ON THE NAILS:

The thin black nails forms vertical lines under the nailare known as splinter haemorrhage .This condition is bleeding of dead particles / debris due to damage to the blood vessels under the nails.

PERIUNGUAL WARTS:

These are formed around the fingernails or toe nail.It appears like cauliflower and grows like cluster.It often attacks children and young adults .

PEELING NAILS :

Finger nail is combination of keratin.Keratin is a protein .the medical term for nail detachment is onychoschizia.Nail peeling can cause nail injury .Nail growth takes 6 months to fully development .There is a risk of developing nail disease like genetic predisposition ,excessive exposure to water ,heat,moisture,tight shoes,chemical damage ,diabetes,skin diseases,tumors,manicure,acne ,AIDS.

DYSTROPHIC NAILS :

Frequently working on nail plate like manicures / pedicures ,bitting,rubbing can result in dystrophic nail.

EGGSHELL NAILS :

While doing manicure these nails use caution because they can easily fragile and break .If it is necessary do with gently with the delicate side of an abrasive board .

HANG NAILS:

The living skin around the nail plate rifts in this condition .Hang nails are caused due to dryness and small cuts of the nail.Dont ever cut the living skin around the nail plate no matter how dry and rough it appears.It shows symptoms like redness,pain ,swelling or pus.

MELANONYCHIA :

The pigmentation of one's finger nails or toes is melanonychia .It appears as black band inside nail plate which spreads from free edge base .Melanin is used to colour hair .

ONYCHOPHAGY:

Bite nails are caused by habit of chomping .The nails or the hard core ,damaged skin around nail plate .clients should know that regular manicures and treatment of the hardened eponychium sometimes can help them overcome this habit .

ONYCHORRHEXIS:

Brittle nails with a sequence of length wise lines gives the texture of nail plate a rough appearance .This is caused by excessive use of cuticle removers ,harsh cleaning agents ,combative filling methods .Softening the nails with a conditioning treatment resolved the problem.

NAIL PTERYGIUM GYM :

It is an unusual condition caused by stretching of skin at the nail plate .this is caused by severe injuries It is unnatural and is excaberated by harm to the nail layer .

PLICATURED NAILS:

It is usually caused by matrix injury but it can also be inherited.this condition is results in ingrown nails.

SPLINTER HAEMORRHAGES:

This damages the capillaries and allow small amounts of blood flow.

PSEUDOMONAS AERUGINOSA :

It is caused due to attack of bacteria at the site of nail plate can be identified in initial stages as a yellow green spot . Staphylococcus aureus is one of the organism which cause damage to the nail plate .

ONYCHIA :

It is caused by an inflammatory response of nail matrix .which leads to thinning of nail plate.it is due improperly sanitized nail equipment.

NAIL PSORIASIS :

It is a non infectious disease that shows actions on nail plate results in tiny pits and roughness .psoriasis is a chronic and recurrect inflammatory skin diseases that affects people .This disorder is linked to immune dysfunction interaction between genetic and environmental factors.

ONYCHOMADESIS :

The conditon of detachment of nail plate from nail bed .this can caused by matrix injuries ,or systemic illness .A major medical treatment such as chemotherapy can use .



TINEA PEDIS : It is the scientific term for fungal skin condition of the feet .which shows symptoms on the bottom of the feet often seen as a red erythematous rash between toes most commonly between fourth and fifth of the toe.



MANAGEMENT:

PITTING : elevation, compression stockings, diuretics, blood thinners, vascular surgery, dietary changes, exercises.

CLUBBING : Immune medications, such as biologics and immunomodulators, getting enough vitamin D and calcium, antithyroid medications, avoiding foods that triggers the symptoms.

LEUKONYCHIA : Trim them off with nail clippers or scissors. Take supplements or dietary changes. Stop using of products that causes allergy. avoid biting of nails. wear gloves to protect your nails. avoid using too much nail polish. keep ur nails clean and dry. use moisturizer

NAIL PSORIASIS: Keep nails short and dry. Protect nails with gloves when doing manual work. Avoid manicures at the base of the nail. Avoid false nails. Use nails varnish to cover up pitting. Avoid nail varnish remover with acetone.

CONCLUSION:-

Nail disorders can arise at any age. About half of all nail disorders are of infectious origin, 15% are due to inflammatory or metabolic conditions, and 5% are due to malignancies and pigment disturbances. Nail disorders are a common reason for dermatologic consultation. They are assessed by clinical inspection, dermatoscopy, diagnostic imaging, microbiological (including mycological) testing, and histopathological examination. Bacterial infections of the nails are rarer than fungal colonization.

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