

NAIL DISORDERS

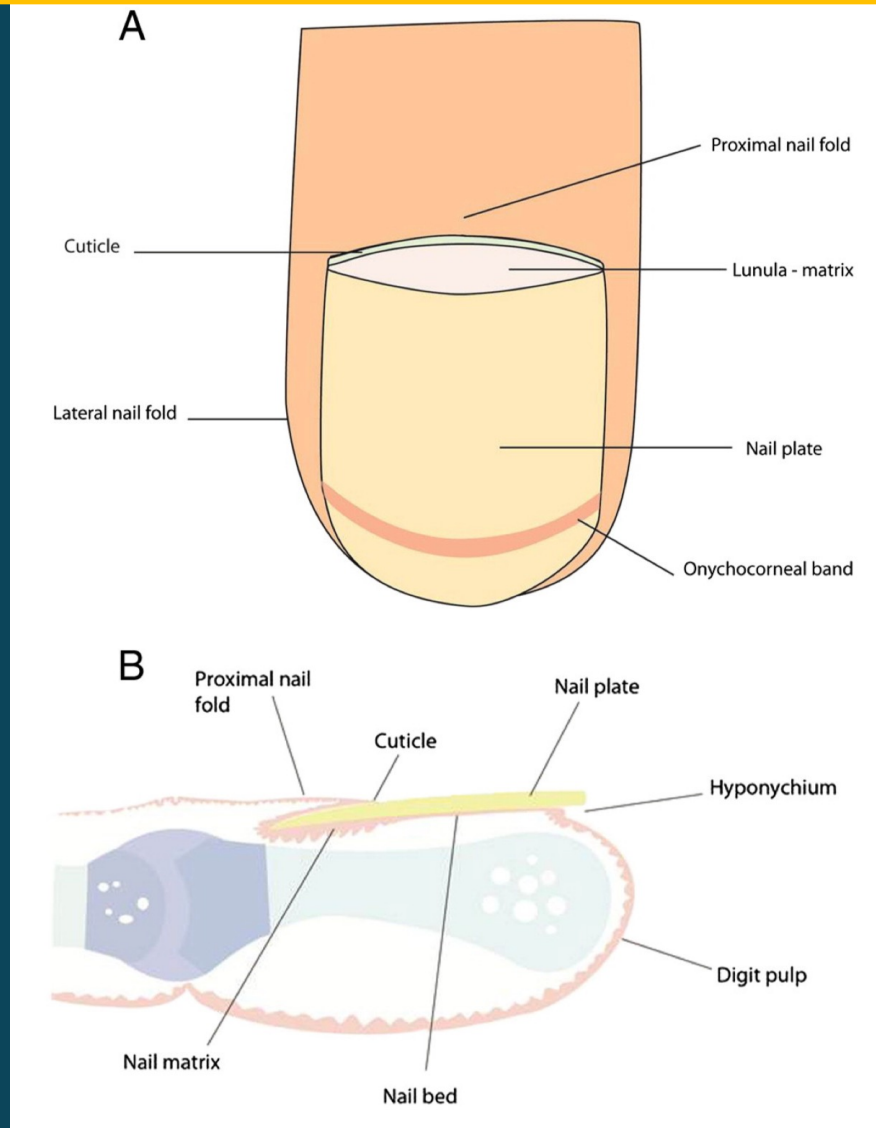
MARTA SAR-POMIAN

Department of Dermatology

Medical University of Warsaw, Poland



STRUCTURE OF THE NAIL APPARATUS



DIAGNOSTICS

ONYCHOSCOPY



MYCOLOGY



Sensitivity – 20%

X-RAY



INFECTIOUS DISEASES

PERIUNGUAL WARTS

- HPV 1, 2, 4, 27, 57
- Most commonly toenails
- Incubation period: weeks-months
- Most commonly lateral nail fold



PERIUNGUAL WARTS – TREATMENT

- Salicylic acid
- Lactic acid
- Monochloroacetic acid, trichloroacetic acid
- 5-fluorouracil
- 5% imiquimod
- Kriosurgery
- CO2 laser
- PDL
- PDT

GREEN NAIL SYNDROME

Pseudomonas aeruginosa (pyoverdine and pyocyanine)

Fingernails -80.8%- thumbnail 45.5%

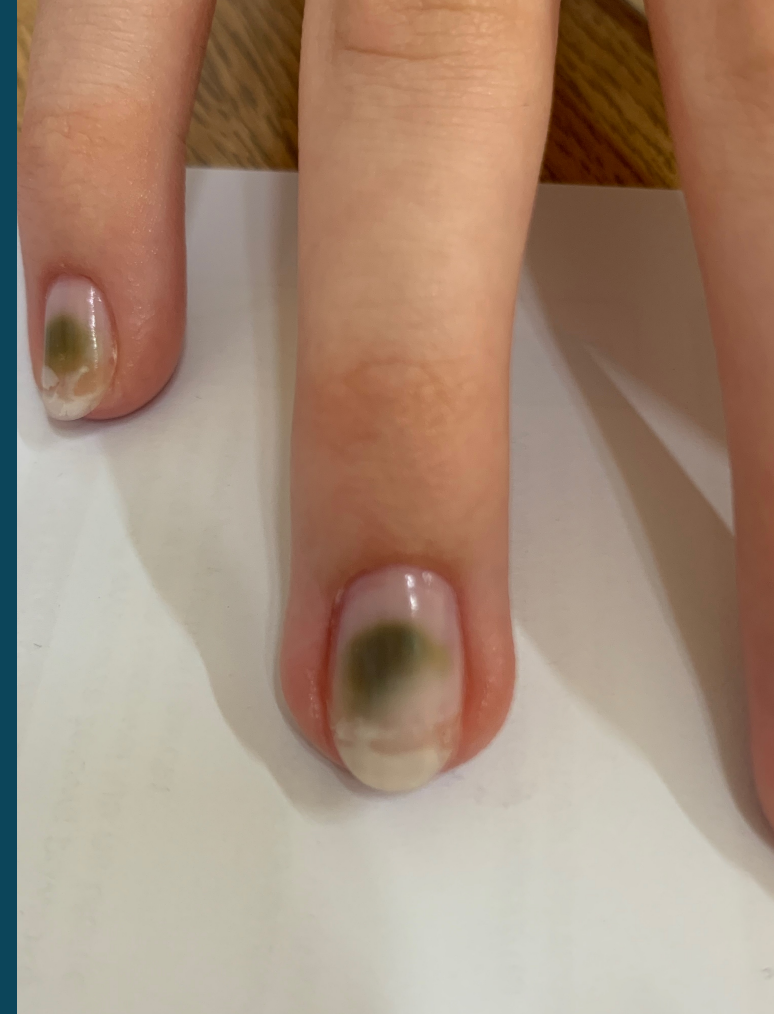
73% pts one nail involved

Green color (38.5%) or brown-green (30.8%), brown 5%, green-yellow 11%, green-black 3.8%

Risk factors: onycholysis (75%) and paronychia

Excessive soaking of hands (25%)

Treatment eyedrops with gentamycin for 3 months



ONYCHOMYCOSIS

- Prevalence 23%, increases after 60 years of age
- 18% to 40% of all nail disorders,
- 90% of all nail infections
- 30% of all fungal infections



ONYCHOMYCOSIS - AETHIOLOGY

- *Trichophyton rubrum* and *T. mentagrophytes* -60-70% cases, less commonly *Epidermophyton floccosum*
- Molds - *Scopulariopsis brevicaulis*, *Acremonium spp.*, *Aspergillus spp.*, *Fusarium spp.*, *Neoscytalidium*.
- Yeasts - *Candida spp.*, fingernails, moist environment

ONYCHOMYCOSIS - TYPES

- distal and lateral subungual onychomycosis (DLSO)
- superficial onychomycosis – white or black
- endonyx onychomycosis
- proximal onychomycosis
- mixed type
- totally dystrophic onychomycosis
- secondary onychomycosis
- paronychia (with or without nail plate involvement)

DLSO

Most commonly *T. rubrum*, *T. mentagrophytes*, *Candida albicans*, *Fusarium spp*, *Neoscytalidium spp*, *Scopulariopsis brevicaulis*



ONYCHOMYCOSIS – CLINICAL PICTURE

discoloration (yellow, white, brown)

onycholysis

Nail crumbling

Subungual hyperkeratosis

Nail ridging

Ingrown nails



ONYCHOMYCOSIS – DIAGNOSTICS

- culture
- PCR
- histology with PAS staining

ONYCHOMYCOSIS – TREATMENT

- Topical: azoles- imidazole, triazole, amorolfine, cyclopirox
- Systemic: terbinafine, itraconazole, fluconazole

INFLAMMATORY DISEASES

NAIL PSORIASIS

- 50% of patients with psoriasis vulgaris
- 90% of patients with psoriatic arthritis
- 1-5% of patients with isolated nail psoriasis



NAIL PSORIASIS

Matrix	Nail bed
nail pitting	onycholysis
leukonychia	splinter haemorrhages
red spots in lunula	oil (salmon) spots
nail plate crumbling	subungual hyperkeratosis

NAIL PITTING

MATRIX

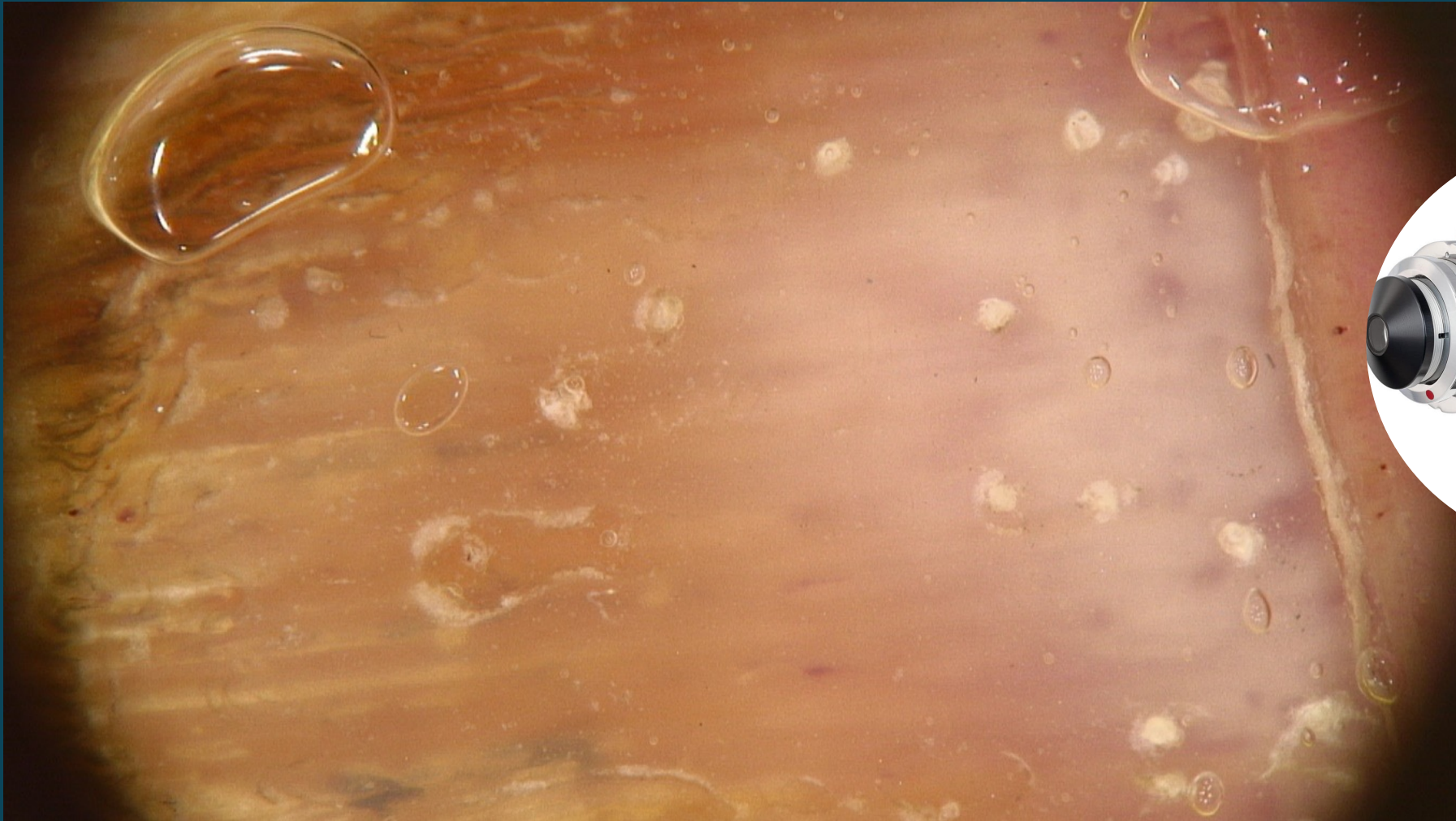
- result of parakeratotic columns in the nail matrix
- can be also observed in alopecia areata, lichen planus and atopic dermatitis
- 1-5% patients with nail psoriasis – isolated nail pitting



42-58%

NAIL PITTING

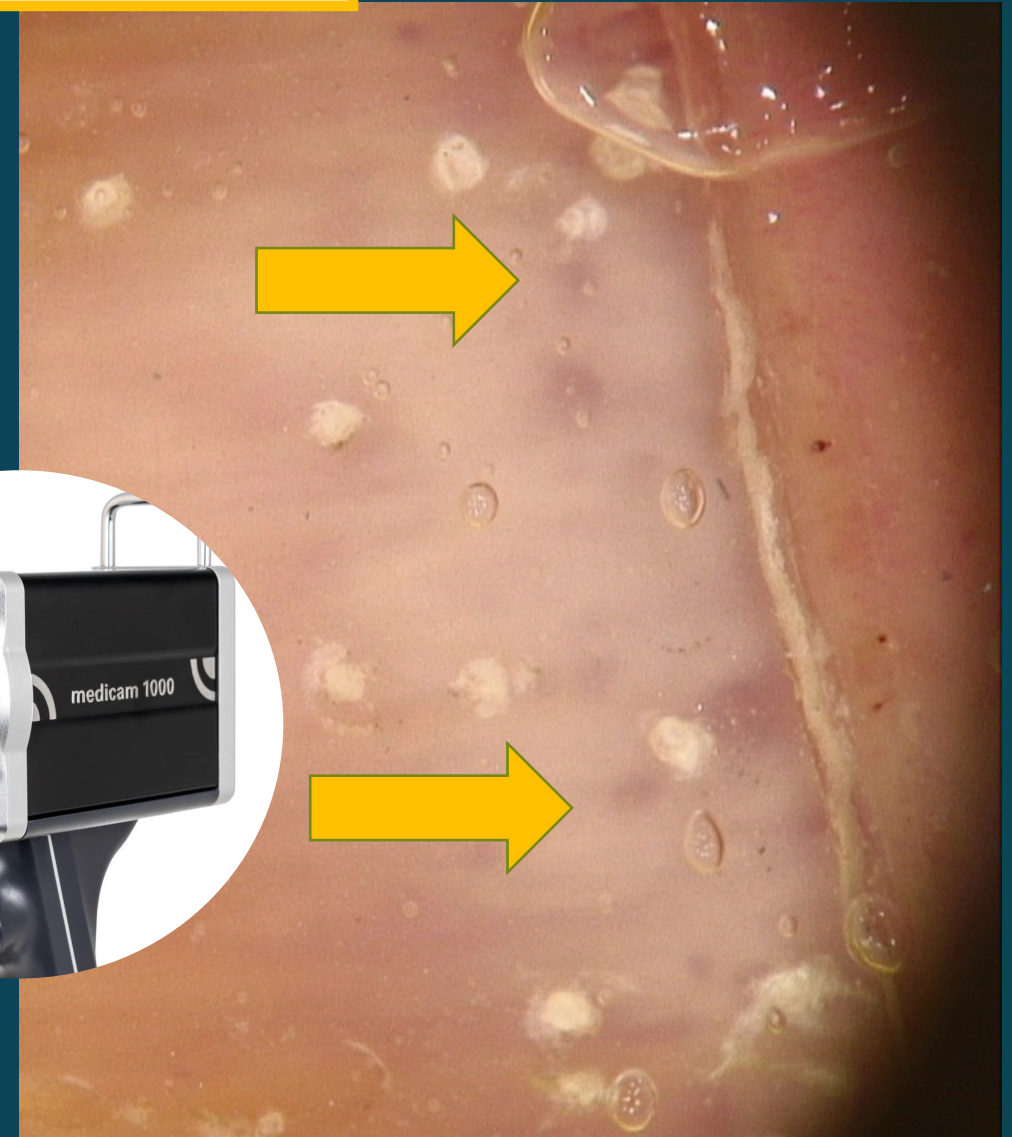
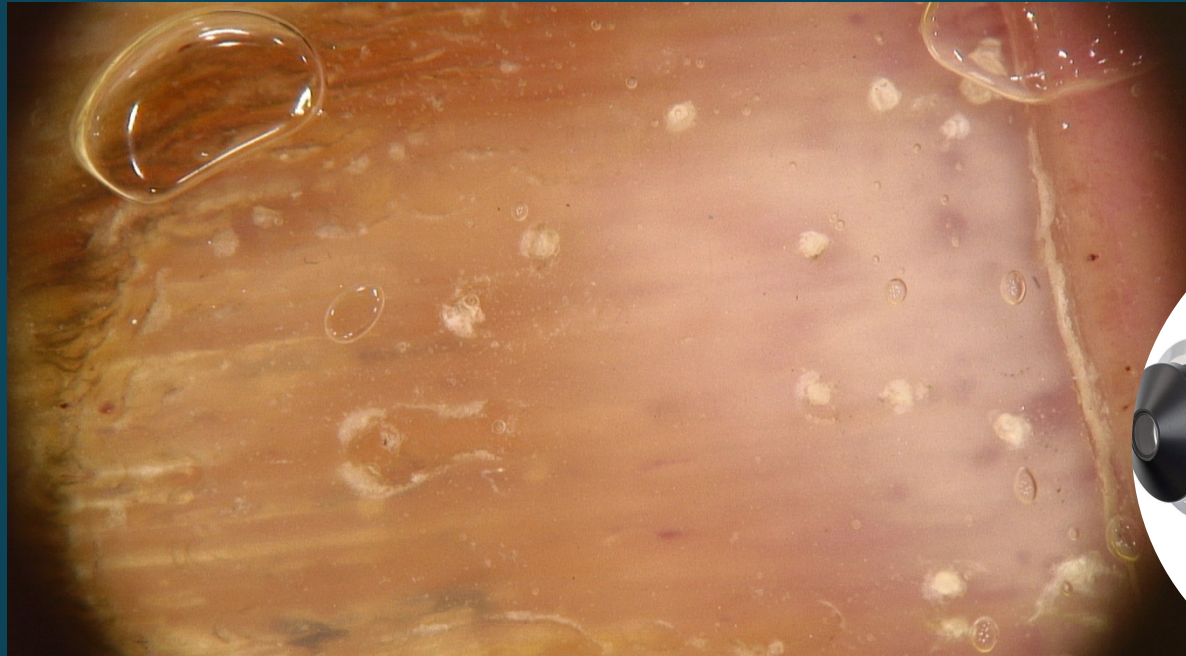
MATRIX



RED SPOTS IN LUNULA

MATRIX

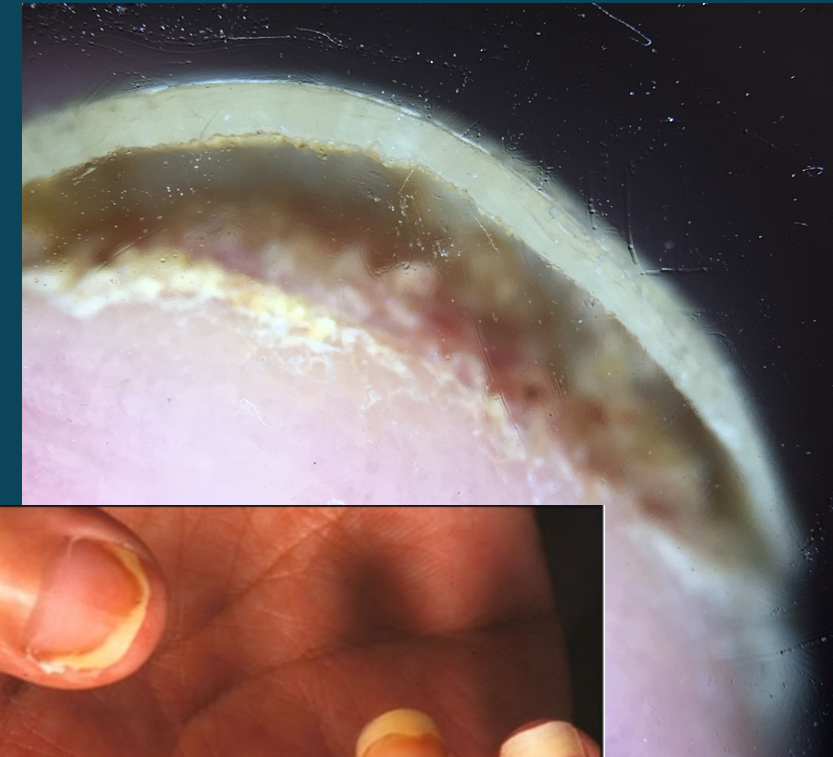
Severe psoriasis



ONYCHOLYSIS

NAIL BED

- Psoriatic abnormalities in hyponychium
- Free space between nail plate and nail bed
- Increases the risk of nail apparatus infections



Onycholysis
with erythematous border

SUBUNGUAL HYPERKERATOSIS

NAIL BED

- Keratinization disturbances and accumulation of keratinocyte
- Distally, spreading proximally
- Need to exclude fungal infection (may coexist in 48% of the cases)

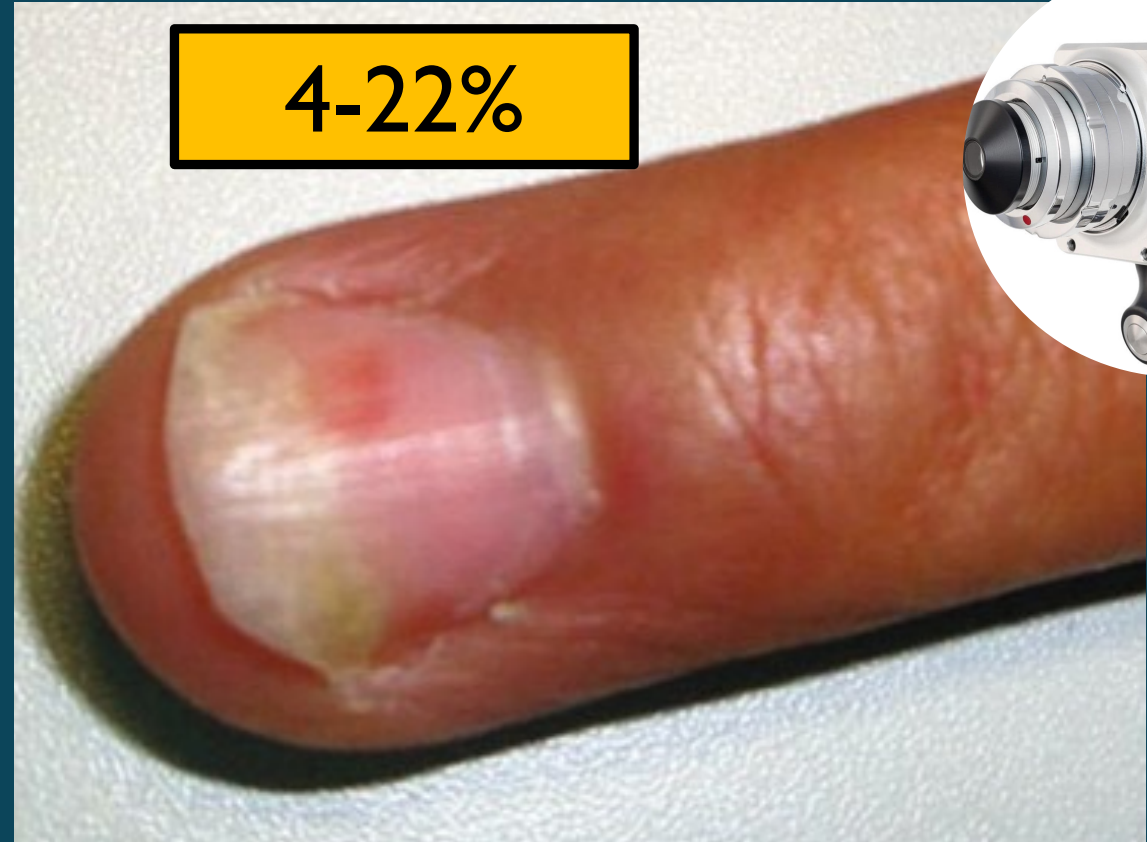


OIL (SALMON) SPOTS

NAIL BED

- Result of parakeratosis and acanthosis in the nail bed

4-22%



SPLINTER HAEMORRHAGES

NAIL BED

- Destruction of the nail bed capillaries
- May also occur after trauma, in endocarditis, eczema, antiphospholipid syndrome, rheumatoid arthritis, systemic lupus erythematosus

11-73%



DOTTED VESSELS

PERIONYCHIUM



NAIL PSORIASIS - TREATMENT

- >3 nails or decreased QoL
- **acitretin** 0.2-0.4 mg/kg 6 months or till moderate improvement
- **Cyclosporine** – short treatment, dose 3-5 mg/kg
- **methotrexate** 15 mg weekly

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- **methotrexate** 15 mg weekly
- Biologics infliximab, etanercept, adalimumab, golimumab, ustekinumab, secukinumab, ixekizumab, apremilast, tafacitinib, certolizumab pegol, guselkumab

NAIL LICHEN PLANUS

- 10-25% of patients with lichen planus has nail involvement
- Abnormalities in nail matrix +/- nail bed
- More commonly on the fingers
- Permanent changes in 4% of patients



PTERYGIUM



ANONYCHIA



NAIL MATRIX AND BED



**NLP FEWER THAN
3 NAILS INVOLVED
MILD - MODERATE**

**Matrix
involvement**

**Intra Lesional
TRIAMCINOLONE
ACETONIDE
5 – 10 mg**

**Intra Muscular
TRIAMCINOLONE
ACETONIDE
0,5 – 1 mg/kg**

**Oral ACITRETIN
0,2 - 0,3 mg/kg
ALITRETINOIN
30mg**

**Bed
involvement**

**Intra Muscular
TRIAMCINOLONE
ACETONIDE
0,5 – 1 mg/kg**

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**NLP FEWER THAN
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MILD – MODERATE
Matrix & Bed involvement**

**Intra Lesional
TRIAMCINOLONE
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ALITRETINOIN
30mg**

**AZATHIOPRINE
CYCLOSPORINE
MYCOPHENOLATE**

**NLP FEWER THAN
3 NAILS INVOLVED
SEVERE**

±

**Intra Muscular
TRIAMCINOLONE
ACETONIDE
0,5 – 1 mg/kg**

**NLP MORE THAN
3 NAILS INVOLVED
ANY PRESENTATION**

TRACHYONYCHIA

LONGITUDINAL NAIL BIOPSY

„sandpaper nails”,
„twenty nail dystrophy”

2 types:

- opaque
- shiny

Starts between 3-12 y.o.

Lasts 6 years



TRACHYONYCHIA

Skin conditions	
Alopecia areata	Pigment incontinence
Lichen planus	Congenital cutaneous candidiasis
psoriasis	Darier disease
Ichthyosis vulgaris	
vitiligo	
Atopic dermatitis	
Pemphigus vulgaris	

+ idiopathic

TRACHYONYCHIA

Other conditions

Immunoglobulin A deficiency

Autoimmune thrombocytopenic purpura

Autoimmune hemolytic anemia

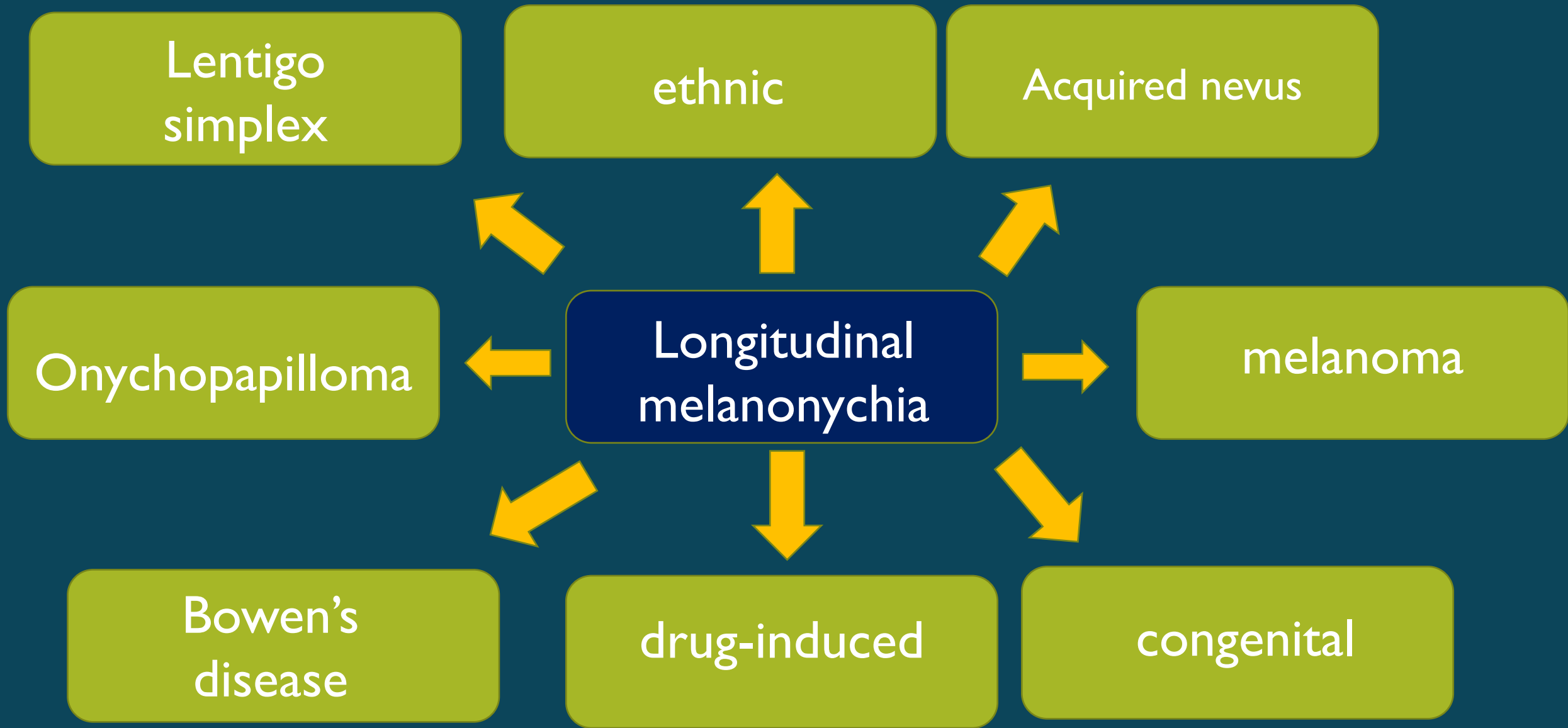
amyloidosis

sarkoidosis

Down syndrome

+ idiopathic

LONGITUDINAL MELANONYCHIA



Lentigo simplex

ethnic

Acquired nevus

Onychopapilloma

Longitudinal melanonychia

melanoma

Bowen's disease

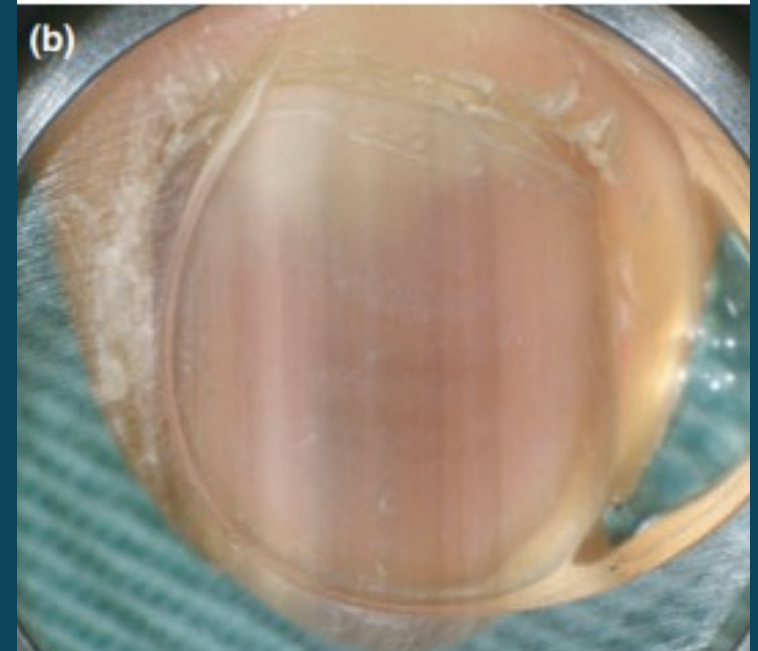
drug-induced

congenital

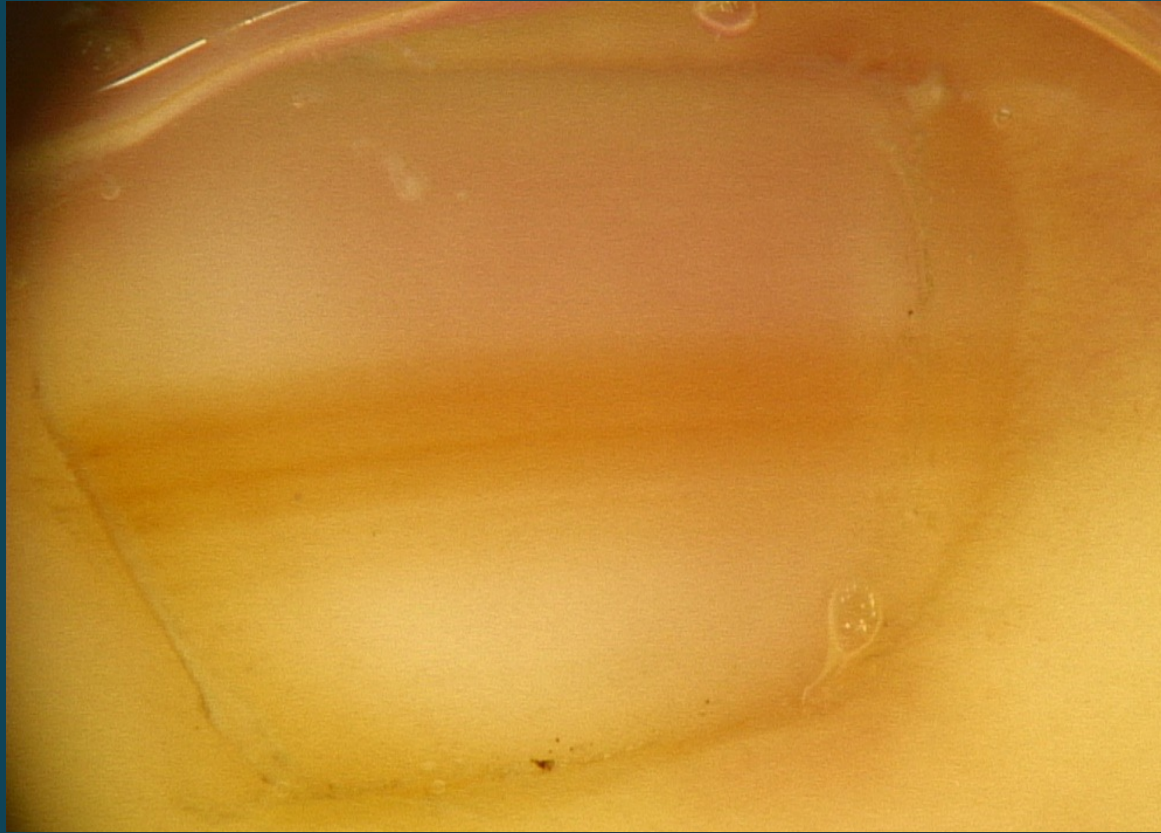
ETHNIC TYPE

❖ Several nails

❖ Grey color



ACQUIRED MATRIX NEVUS



NAIL MELANOMA



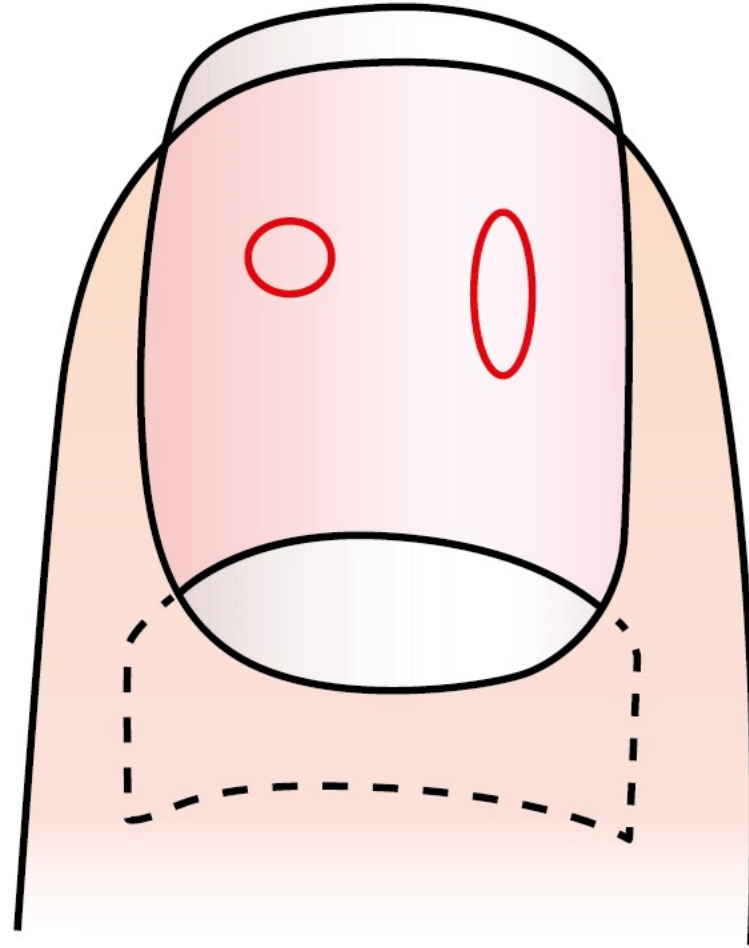
NAIL MELANOMA

INTERNATIONAL DERMOSCOPY SOCIETY:

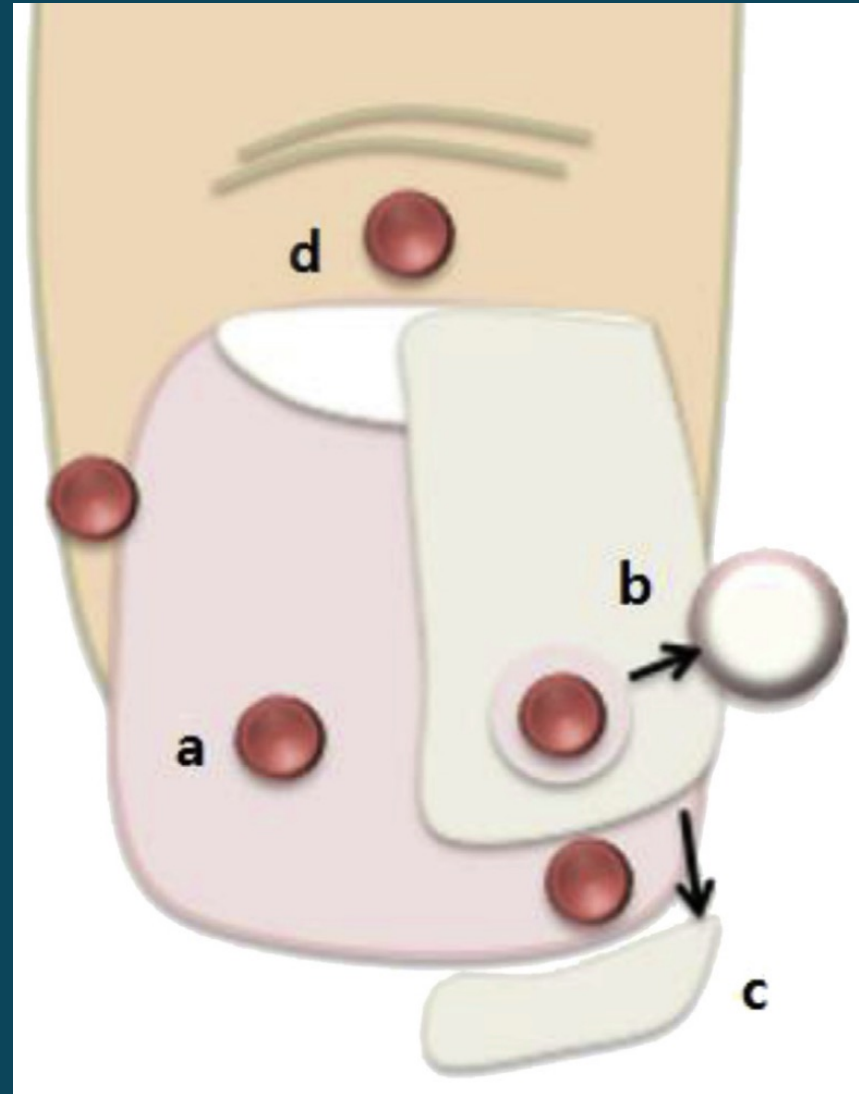
- ❖ Band's width $> 2/3$ nailplate width,
- ❖ Grey and black color,
- ❖ Irregular lines,
- ❖ Hutchinson and micro-Hutchinson sign,
- ❖ Nail dystrophy \rightarrow invasive!
- ❖ Pigmented dots

NAIL SURGERY

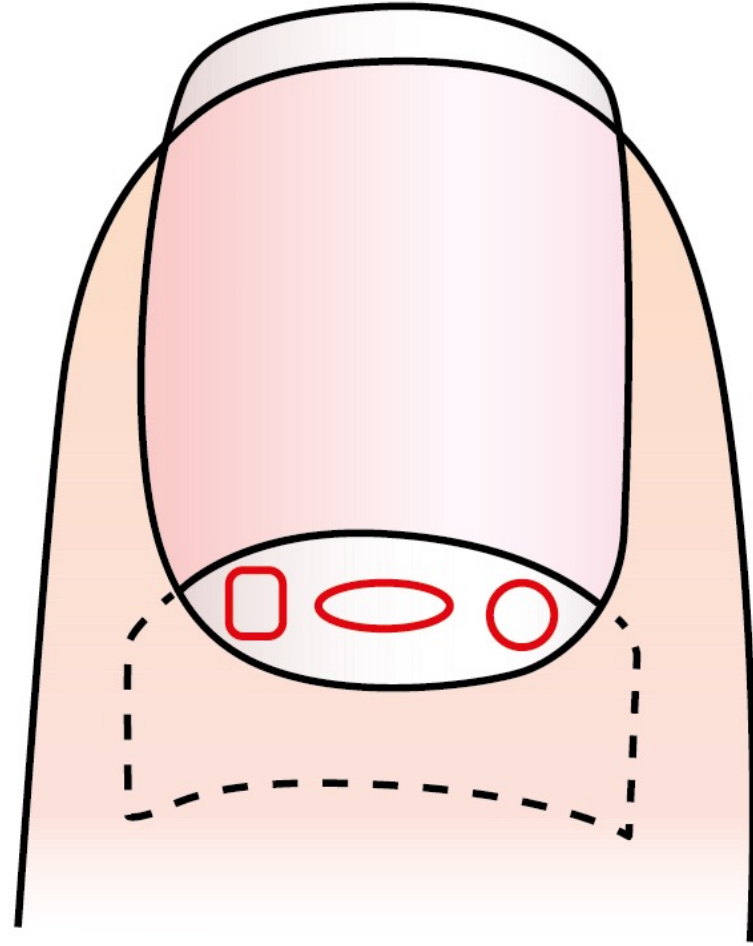
NAIL BED BIOPSY



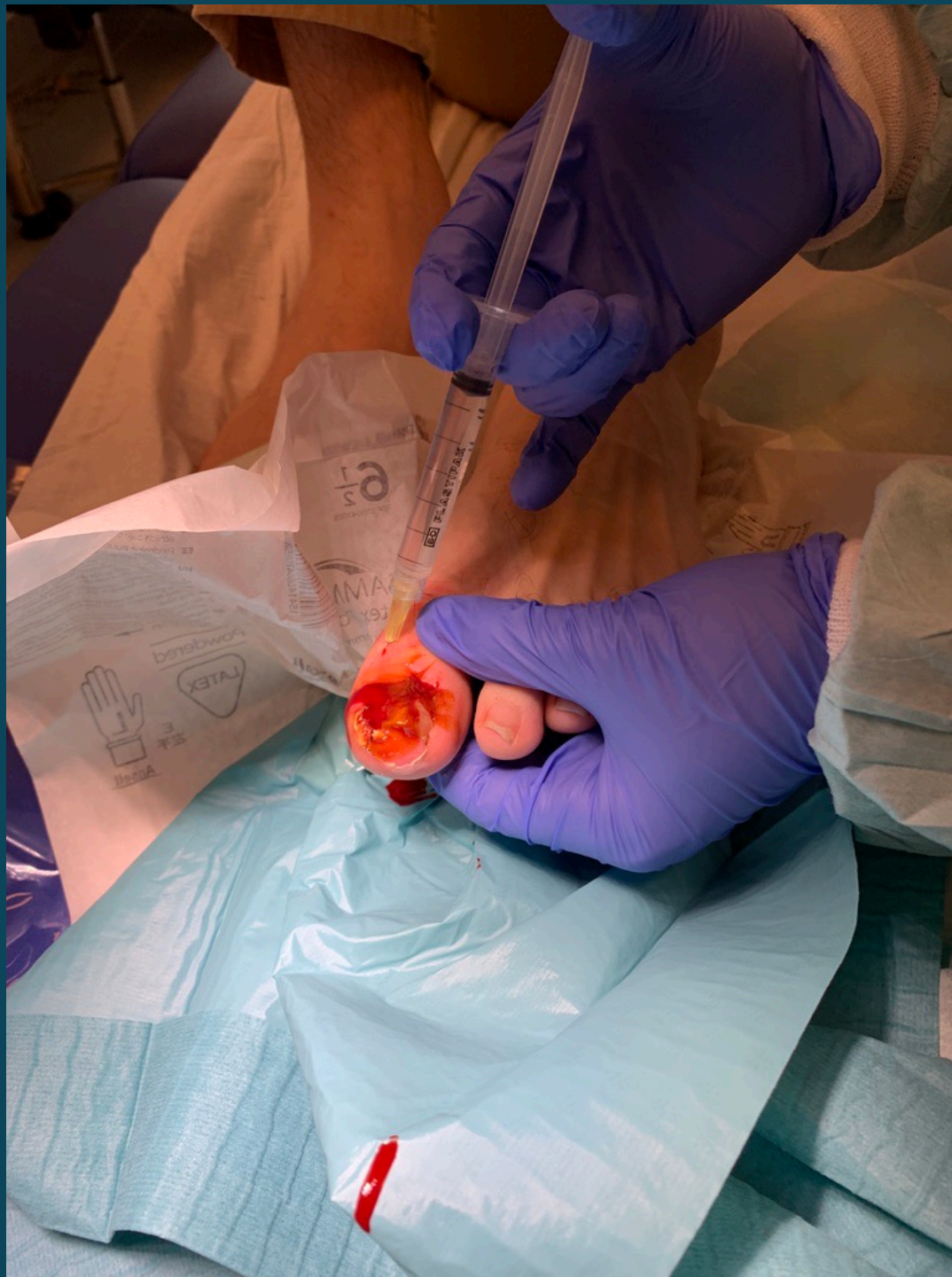
DOUBLE PUNCH NAIL BED BIOPSY



NAIL MATRIX BIOPSY



POST-BIOPSY MANAGEMENT





ANALGESIA

- Paracetamol w/o codeine
- Tramadol
- NSAIDS