

Dermatoscopy 101

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GPCME



Tristram Clinic



This workshop

- Intended for beginner / intermediate dermatoscopists
- Aims to reduce unnecessary excision of benign pigmented skin lesions
- Content includes:
 - Pre-test
 - Introduction to dermatoscopy
 - Clinical features of pigmented skin lesions
 - Dermatoscopy of pigmented skin lesions
 - Interactive exercises

This workshop

- Is not intended to make you an expert
- Expects you to take a history & examine your patient from head to foot
- Content does not include:
 - Non-pigmented skin lesions
 - Rare tumours

Pre-test

- 10 images of pigmented skin lesions
- Decide if each one is benign or malignant
- Select a diagnosis
- 10 seconds for each case

Lesion 1

Benign or Malignant?

- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 2

Benign or Malignant?

- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 3

Benign or Malignant?

- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 4

Benign or Malignant?

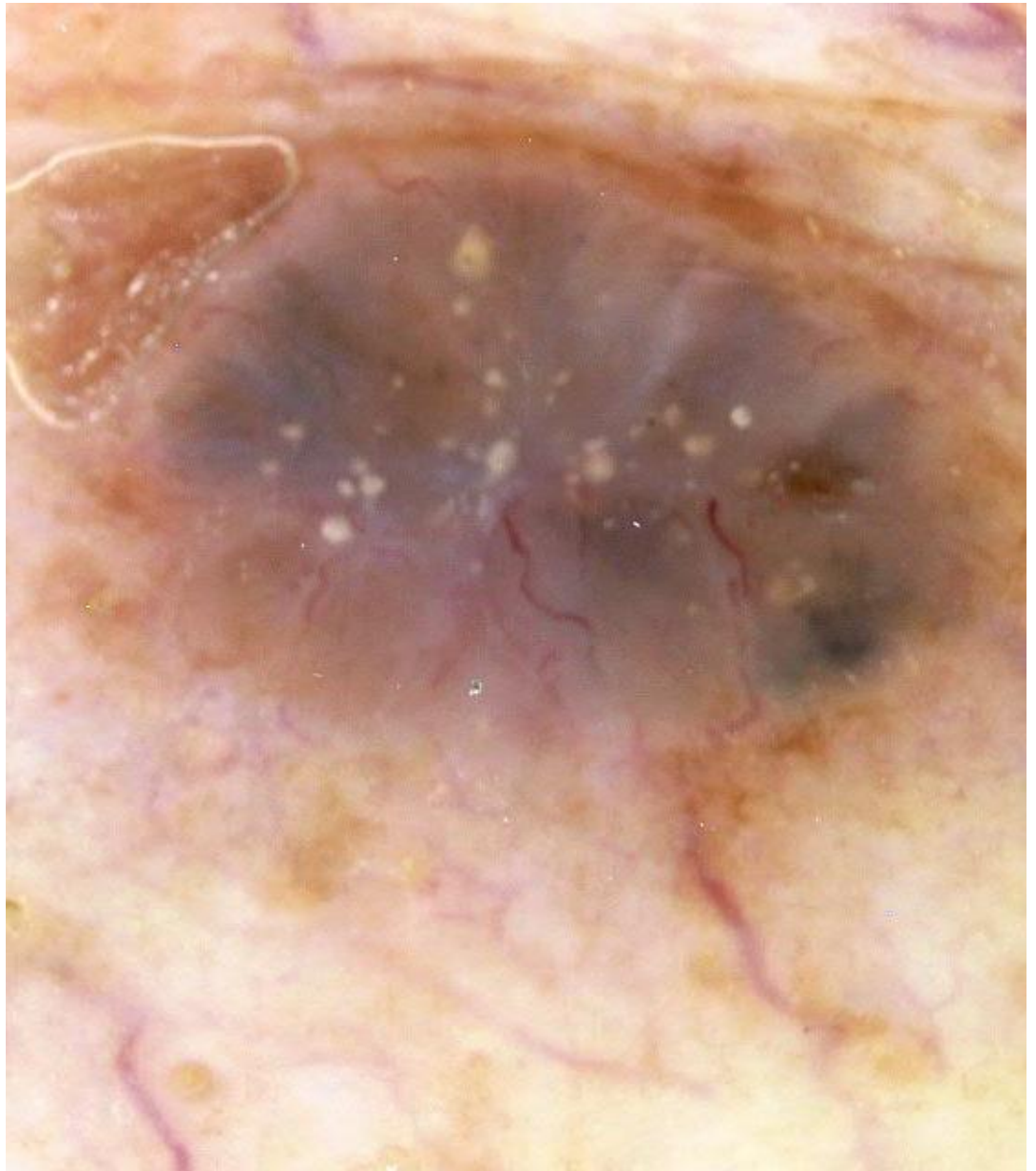
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 5

Benign or Malignant?

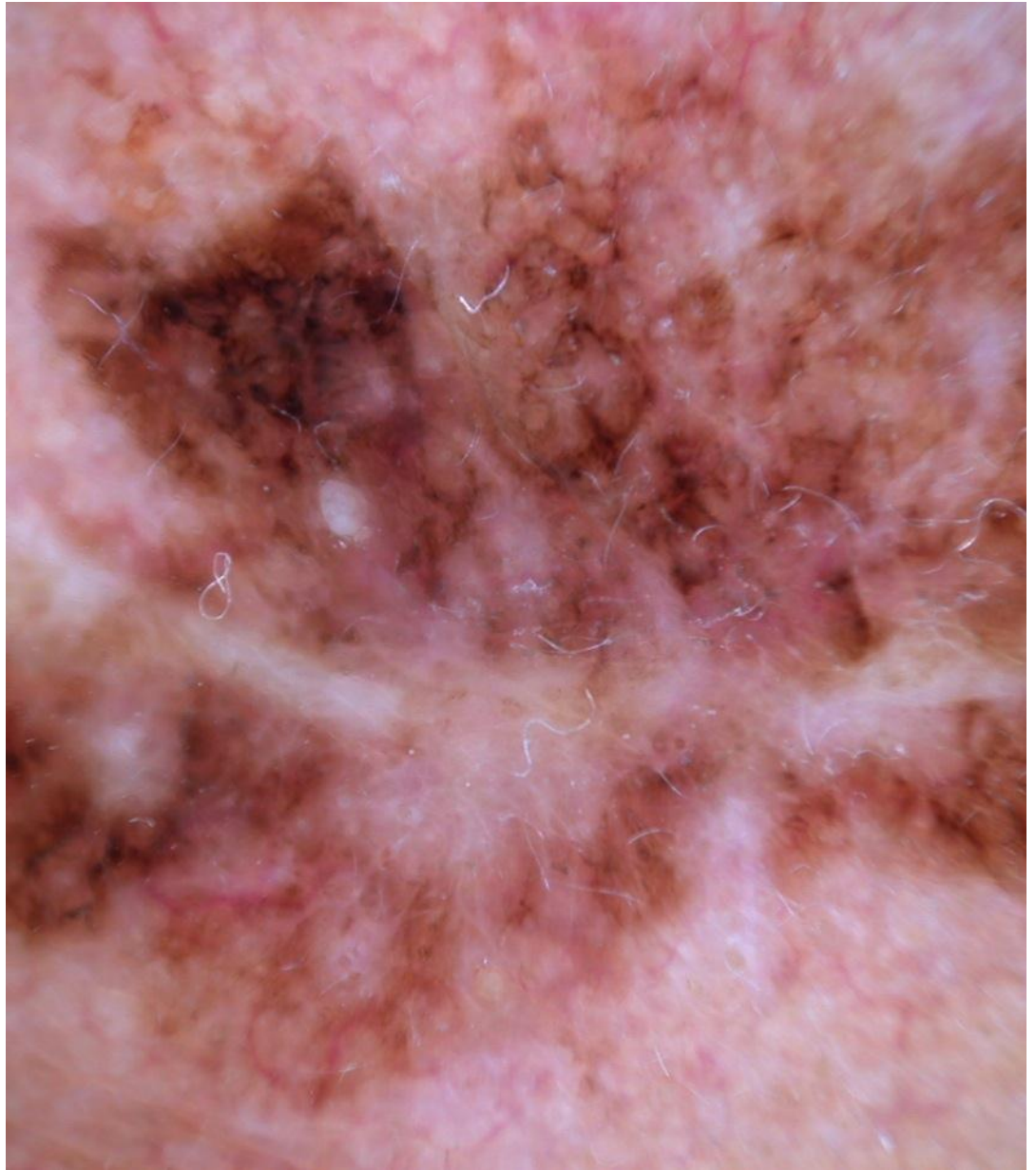
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 6

Benign or Malignant?

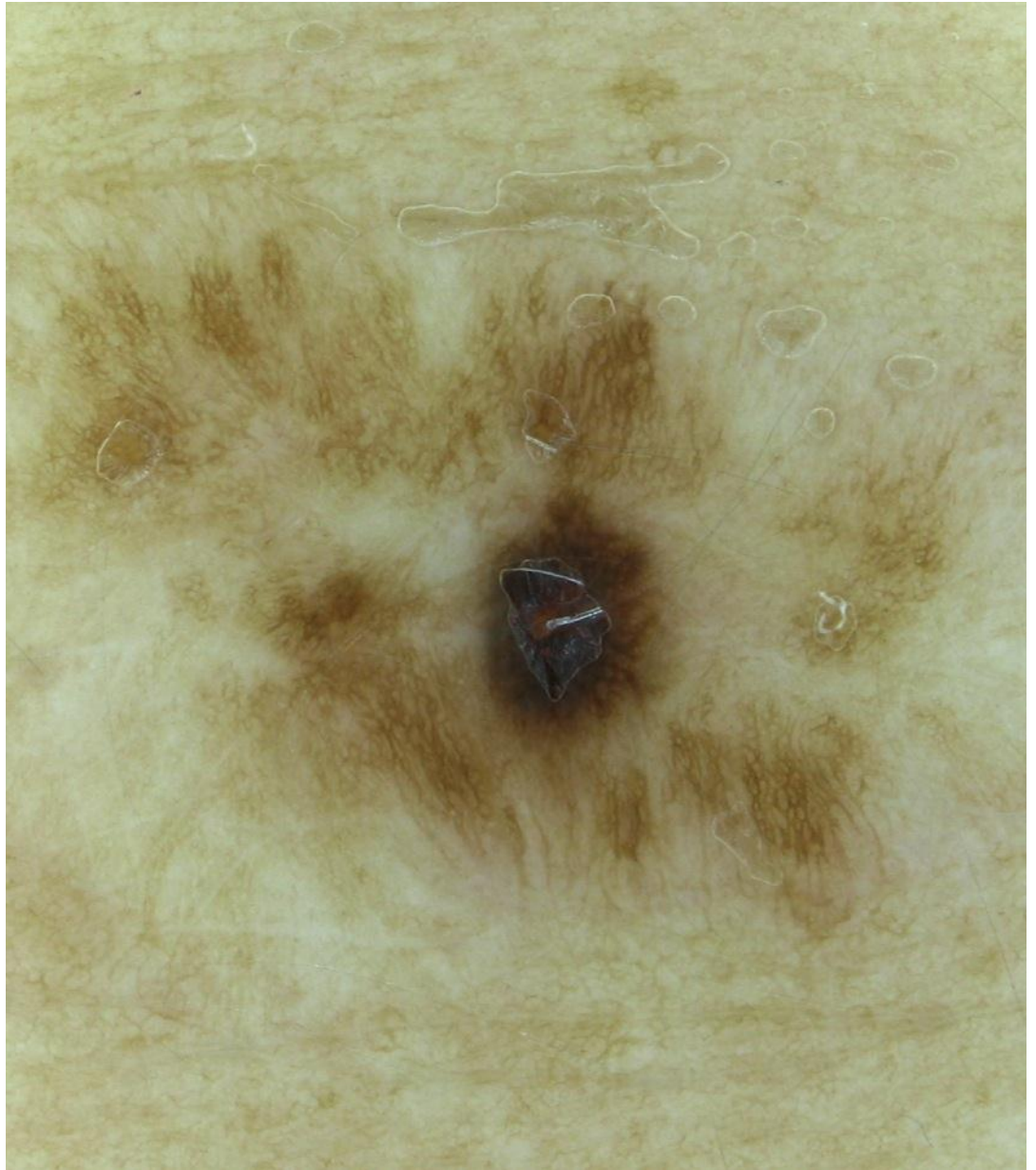
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 7

Benign or Malignant?

- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 8

Benign or Malignant?

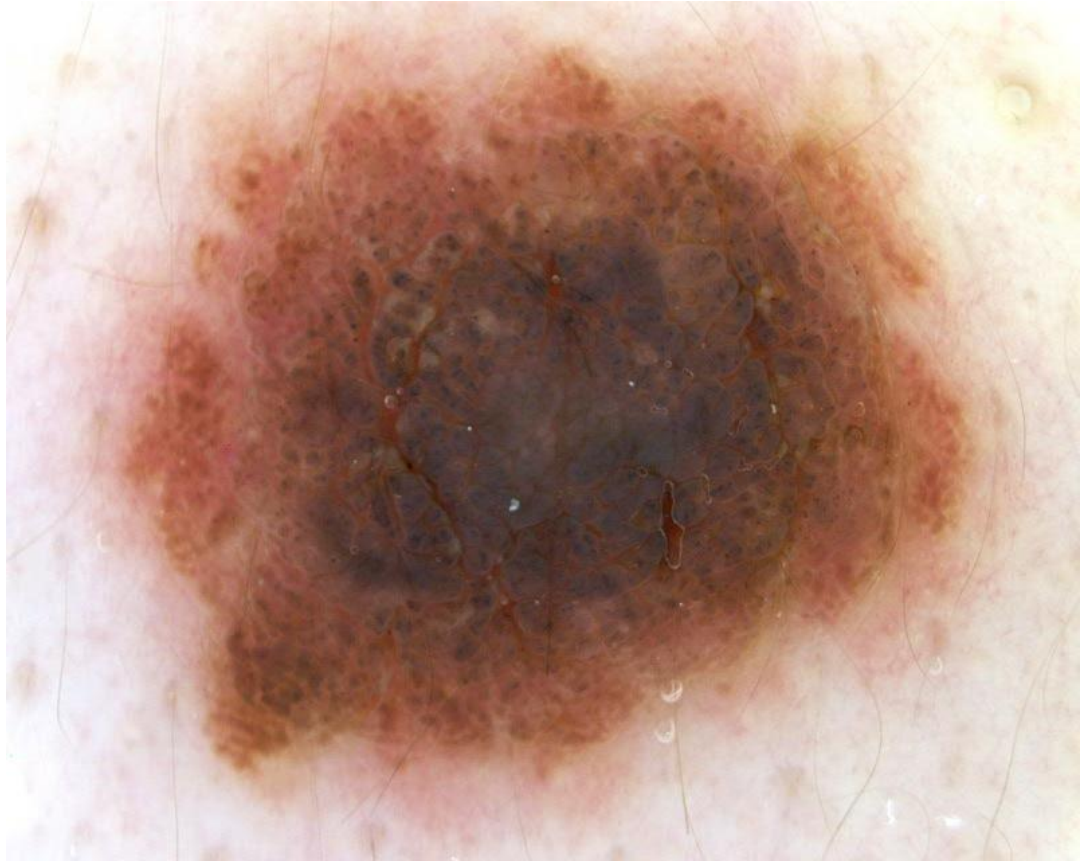
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 9

Benign or Malignant?

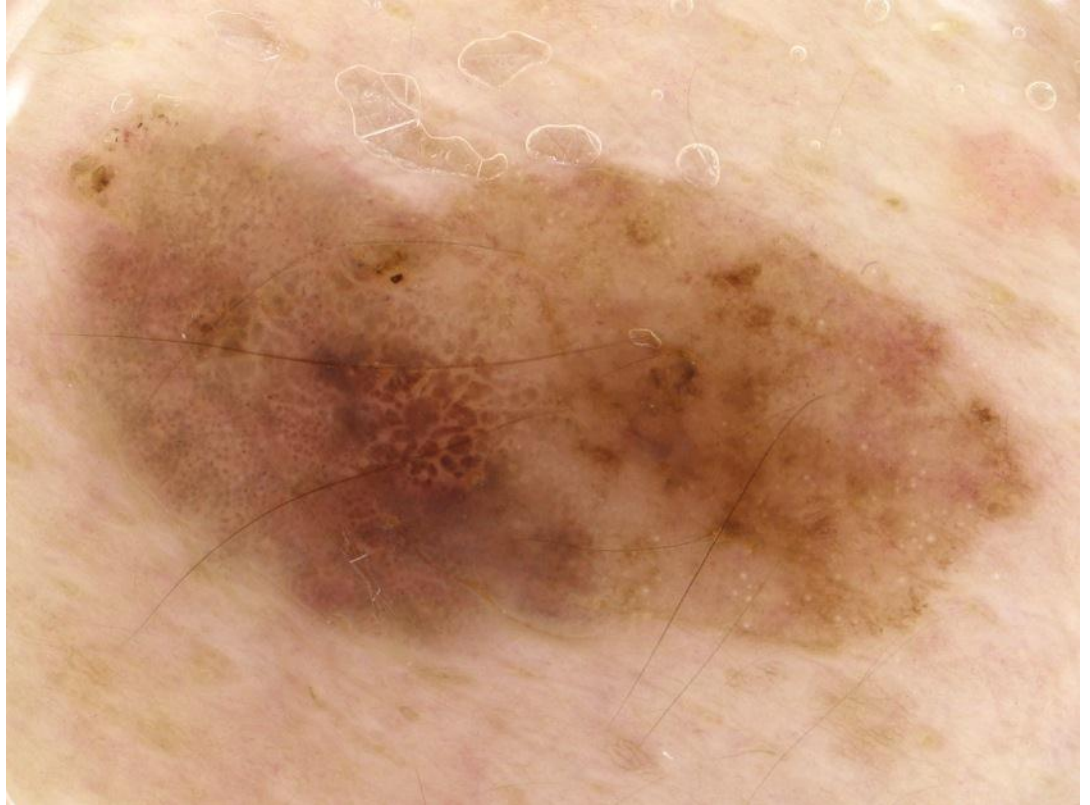
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 10

Benign or Malignant?

- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?

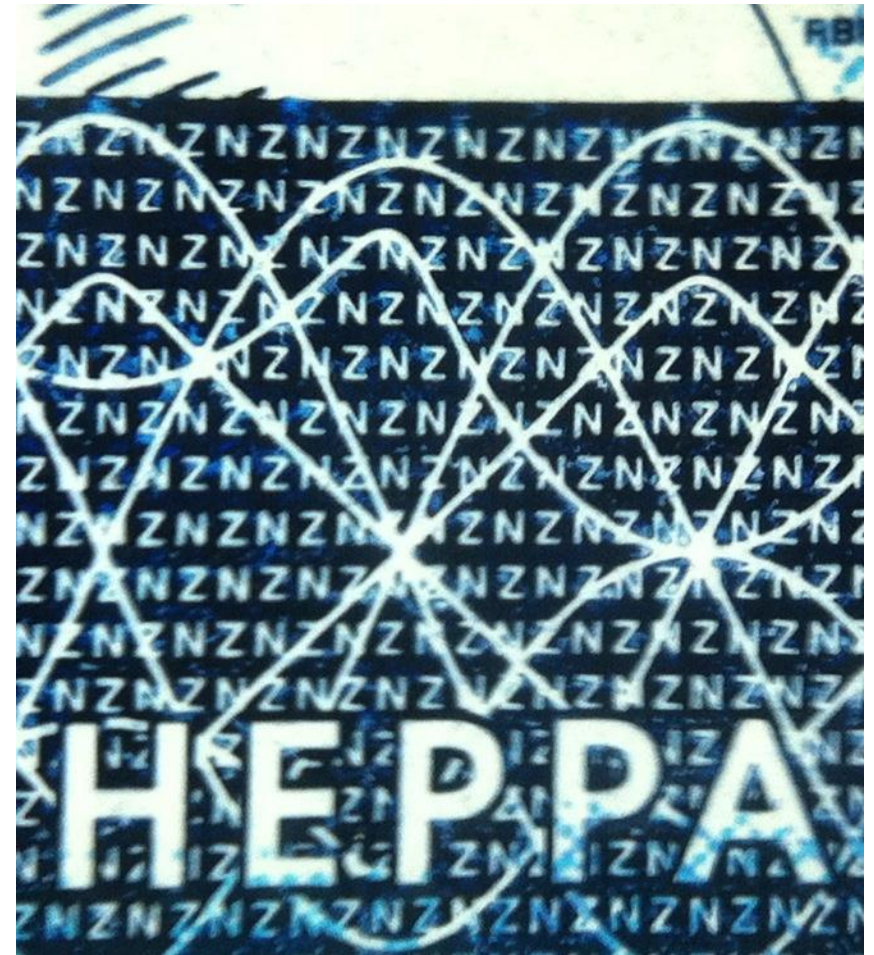


Introduction to dermatoscopy

What is dermatoscopy?

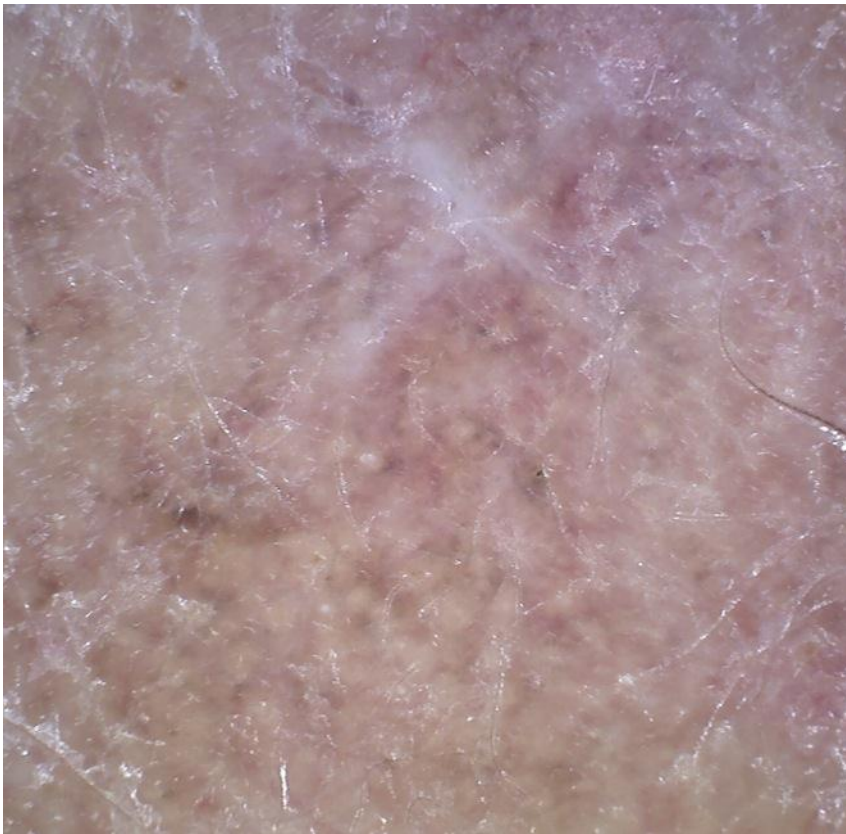
- = Dermatoscopy, epiluminescent microscopy
- Skin examination using:
 - Magnification
 - Good light
 - Means to reduce surface reflection
 - Contact fluid film
 - Polarising filter
- Improves diagnostic accuracy in expert hands
 - Confirmed by numerous clinical trials

Why magnify?



Why reduce surface reflection?

No polarisation



Polarisation



Dermatoscopes



Training requires:

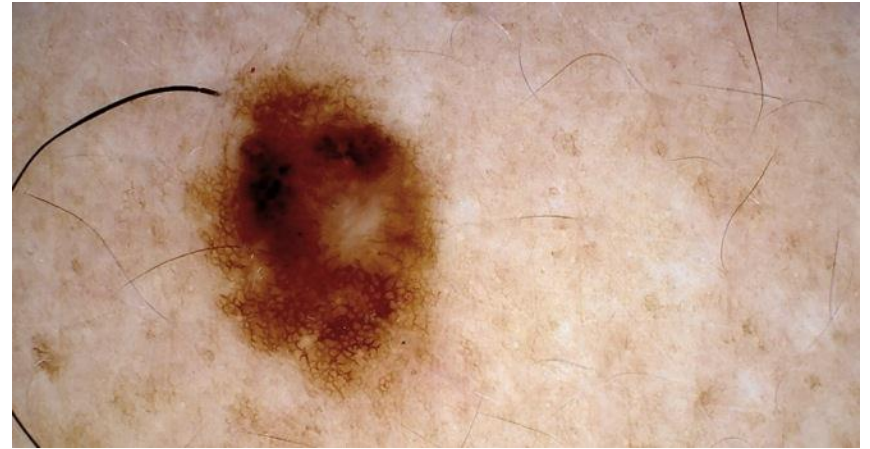
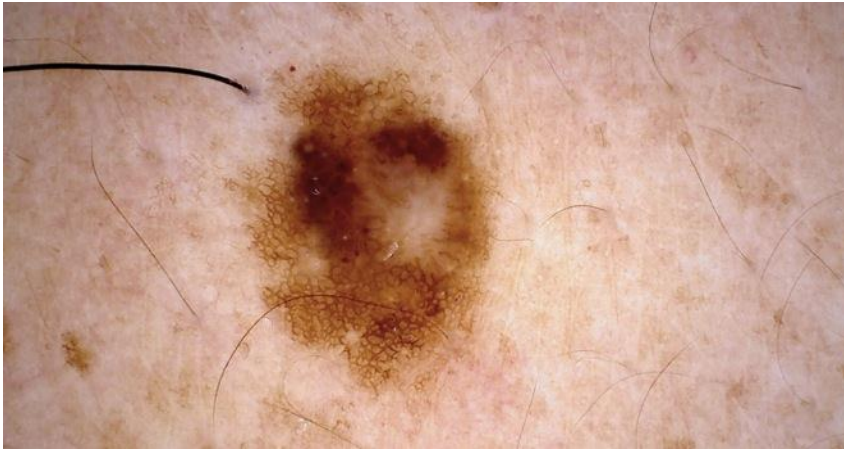
- Experience in skin history / examination
- Elementary course e.g., today's
- Reference books, articles, online resources
- A dermatoscope immediately to hand
- A camera to record lesions of interest
- Continual practice

Polarised devices

- Speedy review of entire skin surface
- Different features highlighted compared to liquid interface



Polarised vs liquid interface



Training in dermatoscopy

- Online modules:
<http://www.dermnetnz.org/doctors/>
- iPhone app: see iTunes
- Textbooks:
Amazon lists >12 titles
- International Diploma of Dermatoscopy
<http://www.meduni-graz.at/IDD/general.html>
- SCCANZ Australian Diploma of Dermatoscopy
http://www.sccanz.com.au/2012_calendar_of_events/australian-dermatoscopy-diploma/

When to use dermatoscopy

- All the time!
- Pigmented and non-pigmented lesions
 - Benign, malignant and of uncertain significance
- Inflammatory dermatoses
 - Psoriasis, eczema, lichen planus, lupus ...
- Infestations
 - Head lice, scabies

Photography = digital dermatoscopy

- Camera
- Adapter(s)
- Suitable dermatoscope
- Archiving system
- Software suitable for sharing images



Other photographic options

- Mole mapping
 - MoleMap NZ
 - Others
- MoleCam
 - Macro
 - Micro
 - Archive
 - Get opinion



“I’d like a skin check”

- Take a history
- Assess risk factors for skin cancer
- Identify lesion(s) of concern
 - To patient, significant other, health professional
 - Onset, duration, behaviour
 - Effect of previous treatment

Risk factors for skin cancer

- Age, esp. >50 years
- Previous melanoma
- Previous nonmelanoma skin cancer
- Many moles
- Funny moles
- Familial melanoma (2+ young, close relatives)
- Sunburns (melanoma, BCC)
- Chronic exposure to UV (AKs, SCCs)

Skin examination

- Good light & magnification
 - Whole body
- Lesion location, distribution, morphology
 - Size
 - Shape
 - Surface
 - Structure
 - Colour
- Dermatoscopy



DermLite Lumio

Pigmented skin lesions

- Melanocytic
 - Naevi + melanoma
- Epithelial
 - Seborrhoeic keratoses + BCC / SCC
- Vascular
 - Angioma + haemorrhage
- Other
 - Dermatofibroma

Benign lesions

- Rarely need excision. Exceptions:
 - If malignancy cannot be excluded
 - Significant symptoms
 - ‘Cosmetic’ reasons
- Benign lesions show symmetry:
 - Single or multiple patterns
 - Assess structure and colour (not shape)

Malignant lesions

Chaos

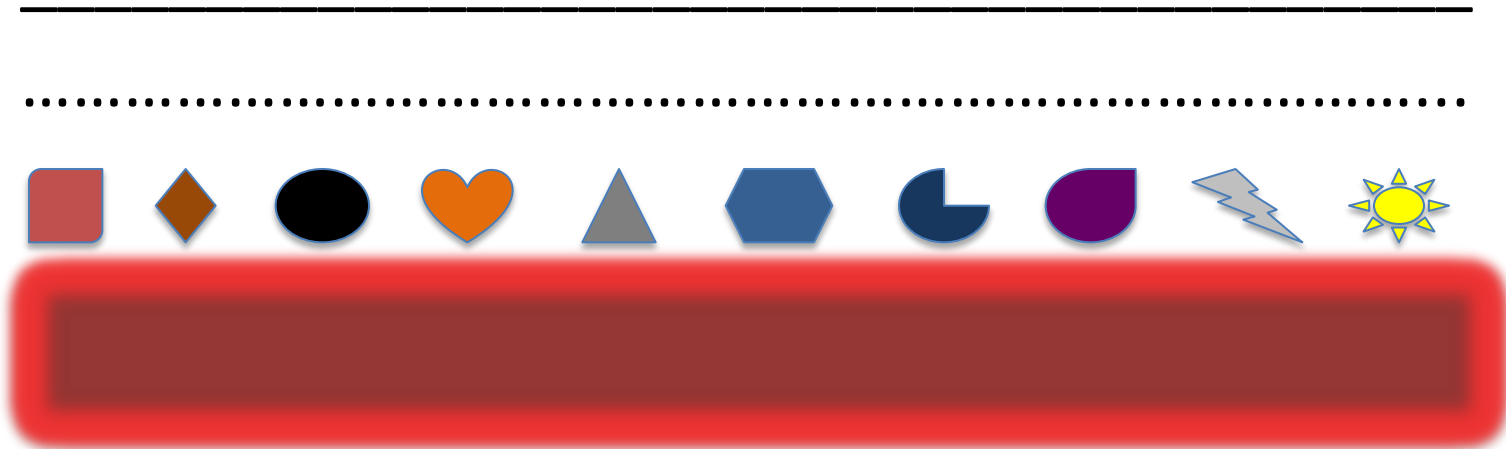
- Asymmetry of structure
- Asymmetry of colour
- More than one pattern

+ One of the following clues:

1. Eccentric structureless zones of any colour
2. Gray circles, lines, dots, clods
3. Black dots or clods at periphery
4. Focal pseudopods or radial lines at periphery
5. White lines
6. Thick reticular lines
7. Polymorphous vessels
8. Parallel lines on the ridges (acral lesions only)

Take home message

- Skin lesions are made up of structures:
 - lines, dots, clods & structureless zones of varying colours

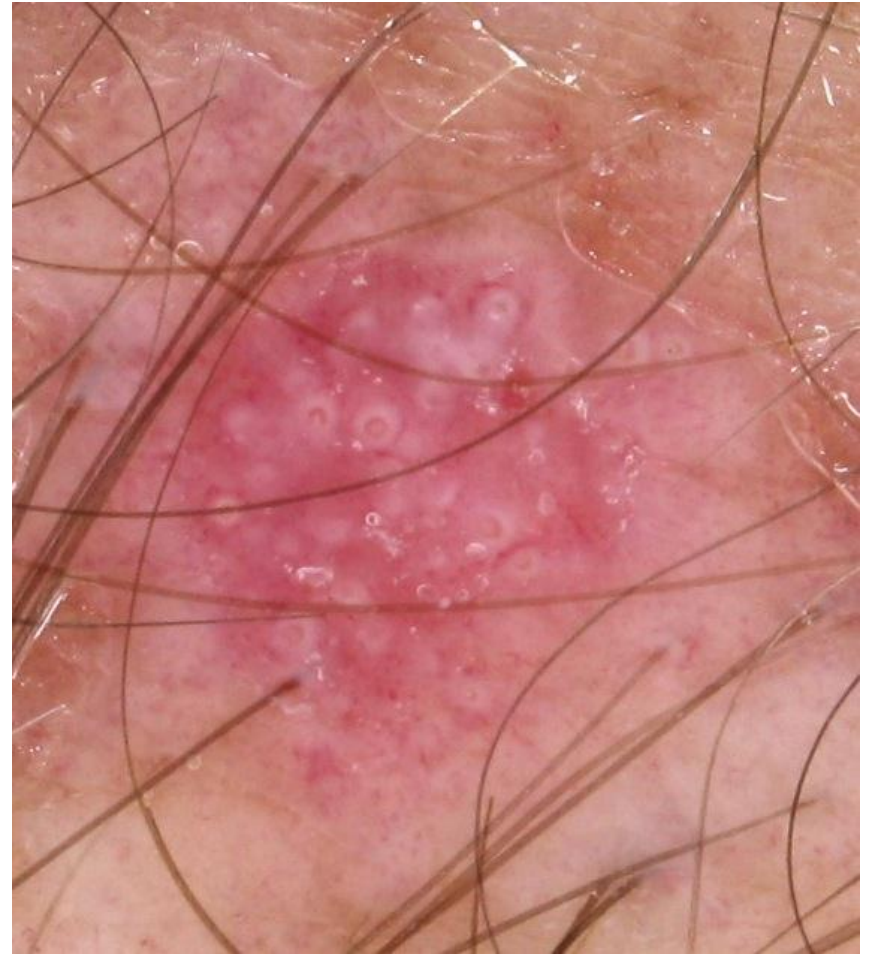
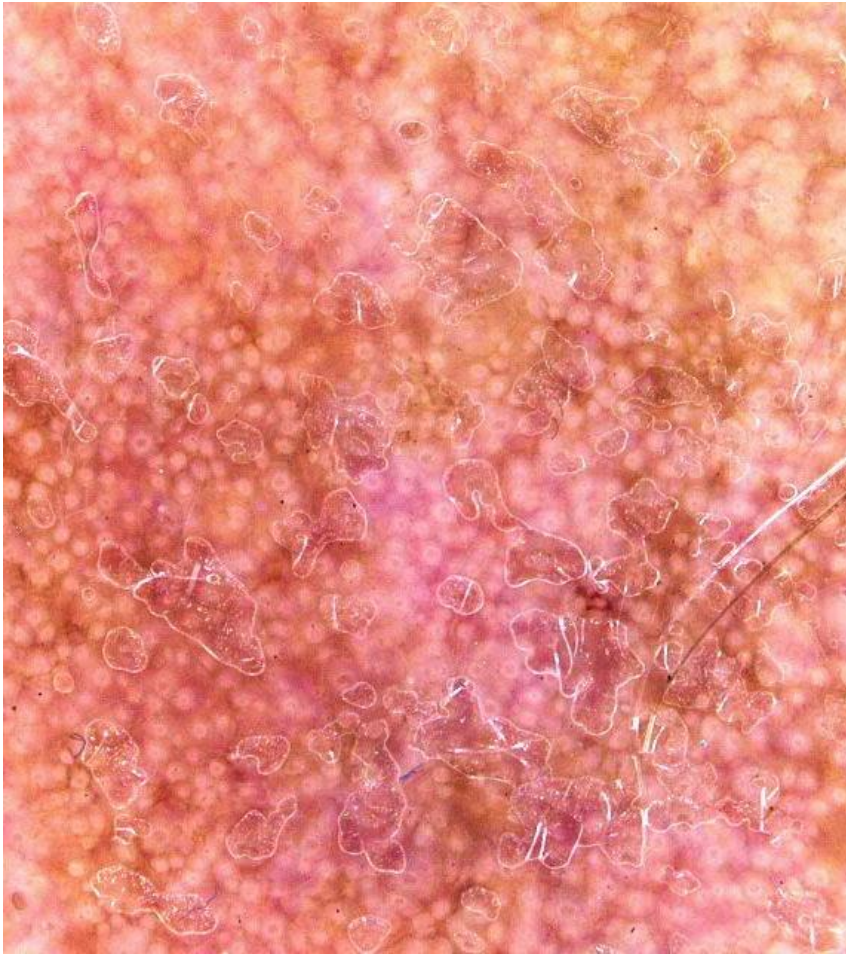


- These structures form neat patterns in naevi
- Disordered and chaotic structures = cancer

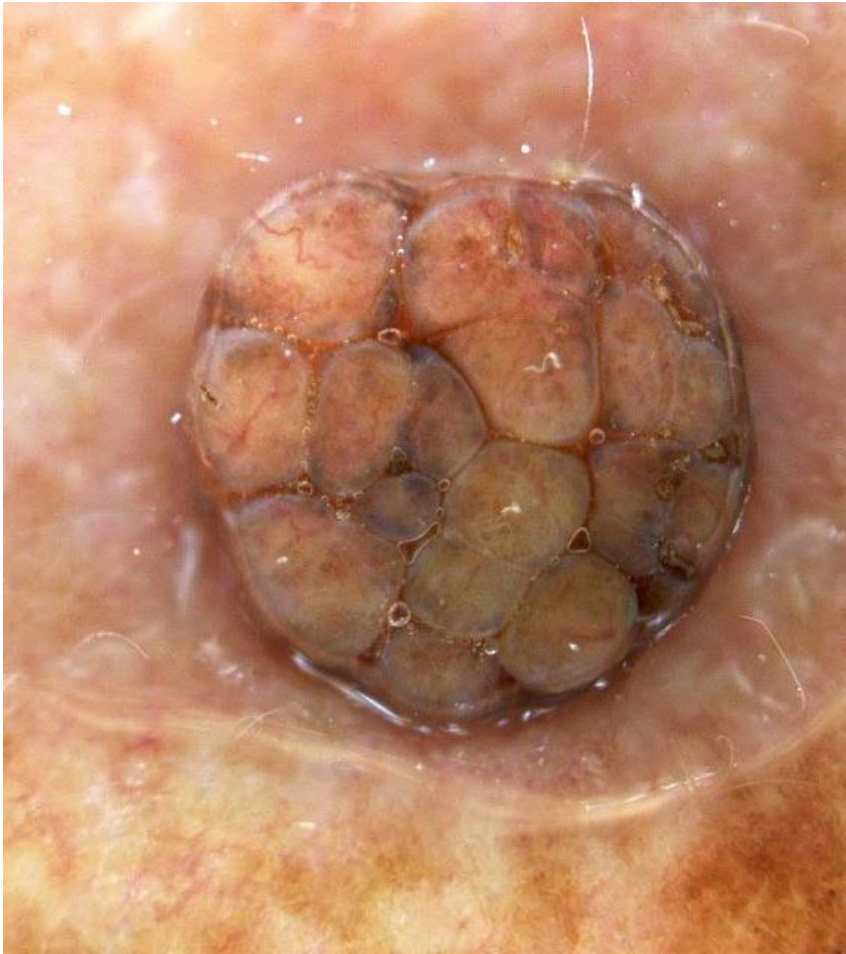
Lines



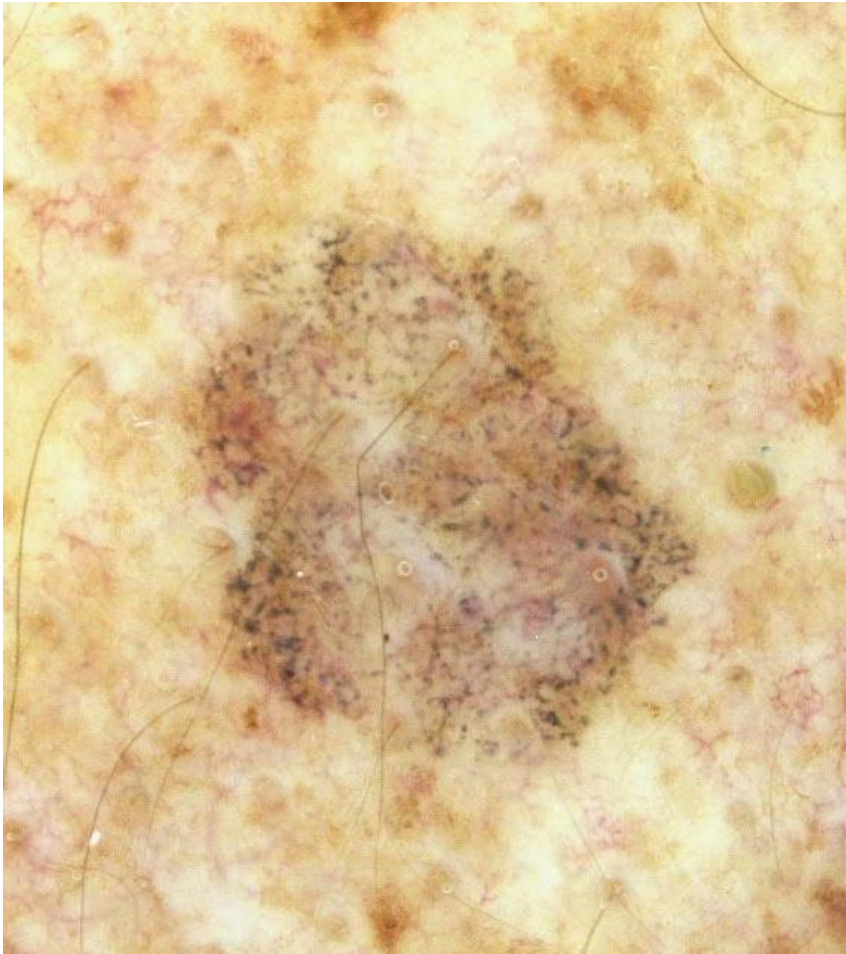
Circles



Clods



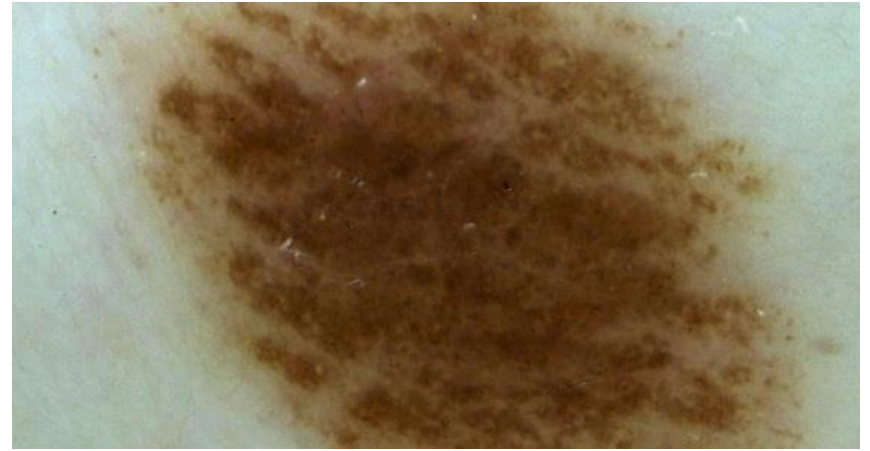
Dots



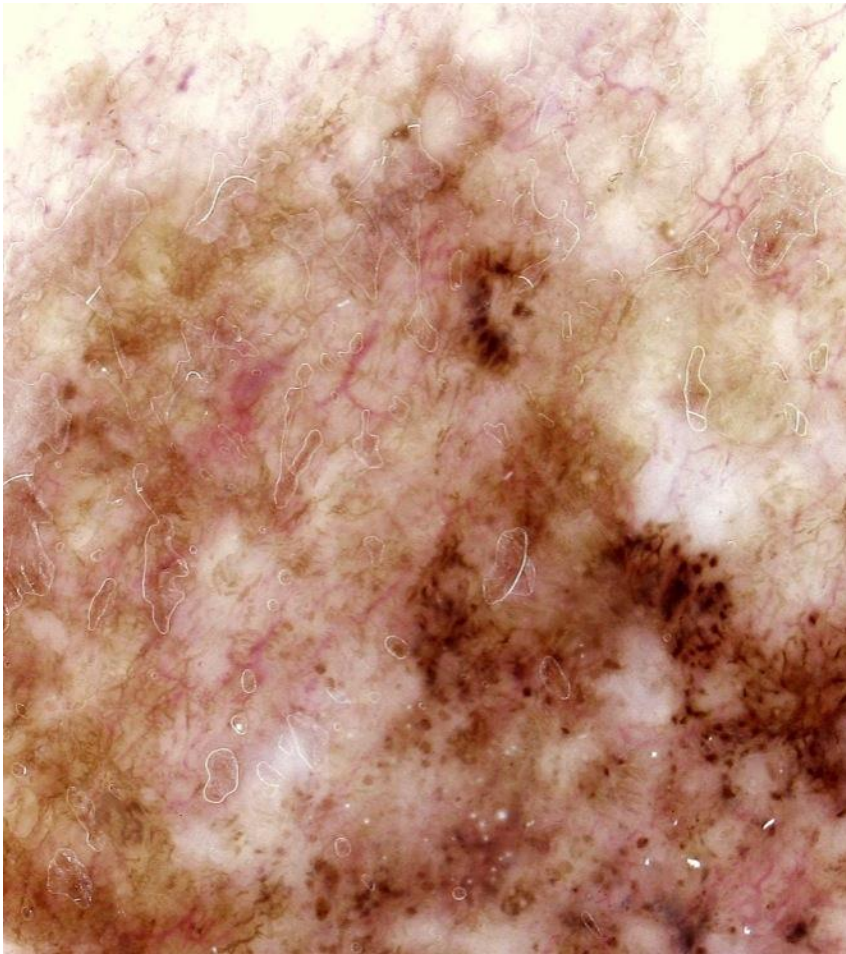
Structureless



Ordered pattern in naevi



Disordered pattern in melanoma



Clinical features of melanocytic lesions

Naevi

Lentigines

Melanocytic naevi

- Benign proliferation of melanocytes
 - Naevocellular naevus
 - Forming nests, chords, strands
- Congenital or acquired
- Histological classification (Ackerman)
 - Congenital (superficial, superficial and deep), blue, combined, dermal / Unna / Miescher, halo / Sutton, recurrent, Clark, Spitz, Reed
 - Junctional, compound, dermal

Congenital naevi

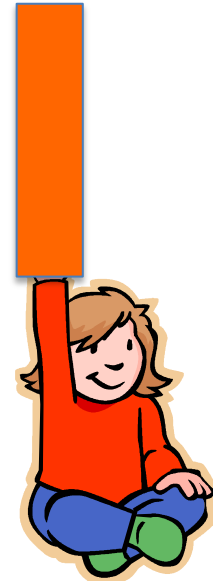
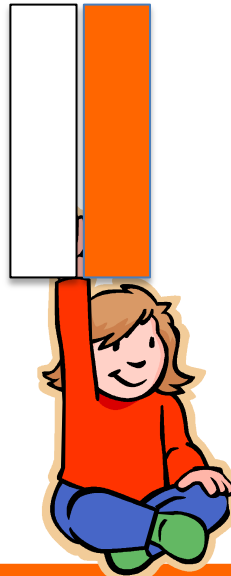
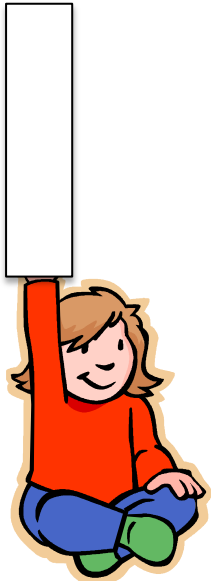
- True congenital naevus
 - Giant, large, medium, small
 - Mostly remain similar lifelong
- Childhood onset 'congenital' naevi
 - Appear before 10 years and evolve

This workshop is interactive

- Option 1

- Option 2

- Option 3



- ?

- ?

- ?

Which lesion is congenital?

A



B



• A?

• B?

• Both?

Both are true congenital naevi

- Large, distinctive lesions
- Present at birth
- 'A' medium-sized
 - >1.5 cm & <10 cm
- 'B' giant-sized
 - >20 cm

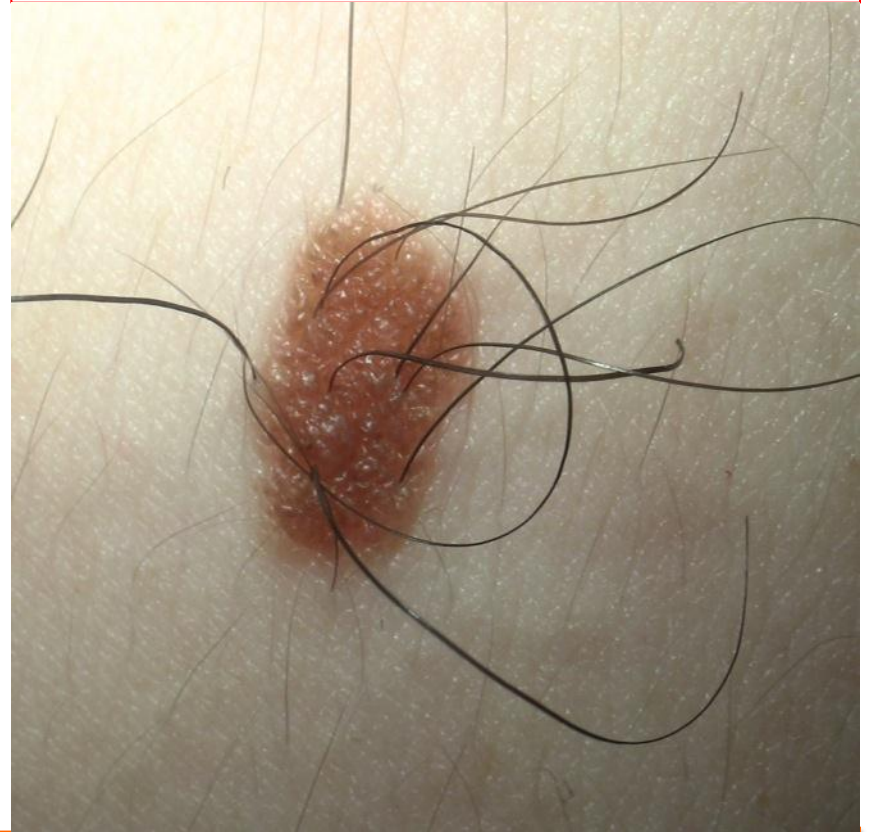


Which lesion is congenital?

A



B



• A?

• B?

• Both?

A is 'true' congenital naevus

- A was present at birth
- B appeared during childhood as a flat mole and evolved to become a nodule
- Both have terminal hair



Dermatoscopy

True congenital naevus



- Structureless pattern

Childhood-onset 'congenital' naevus



- Clods pattern (globular)

True congenital naevi

- Often, terminal hair
- Flat or elevated or both
- Pink, brown, black, mixed
- Often odd shapes and large size



Histology of congenital naevus

- Superficial (Ackerman)
- Superficial and deep (Zitelli)



Childhood-onset 'congenital' naevus

- Often, terminal hair
- Flat or elevated or both
- Pink, brown, black, mixed
- Often symmetrical shape and structure
- Similar histology to true congenital naevus



Which lesion is childhood-onset?

A



B



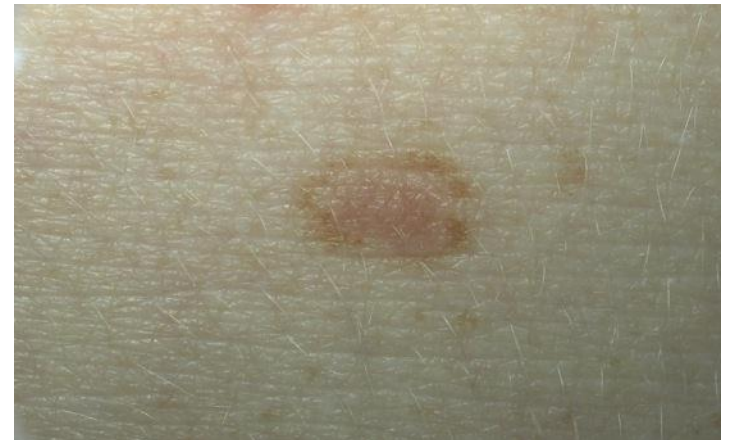
• A?

• B?

• Both?

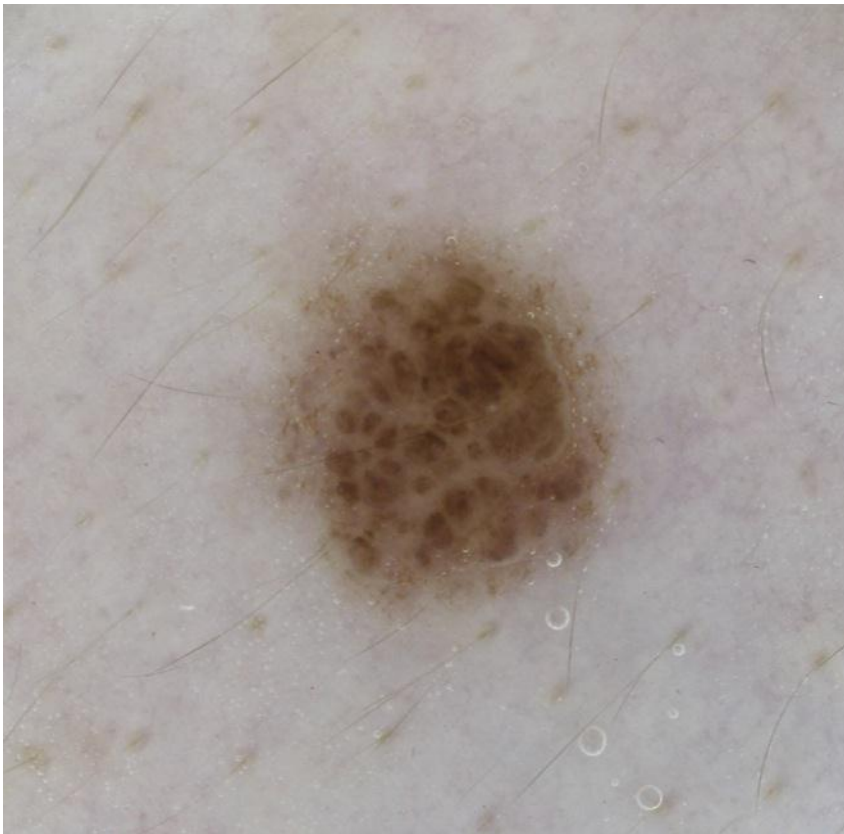
Both are childhood-onset naevi

- Onset prior to puberty
- Unrelated to sun exposure
- 'A' is common mole
- 'B' is annular or 'eclipse' naevus



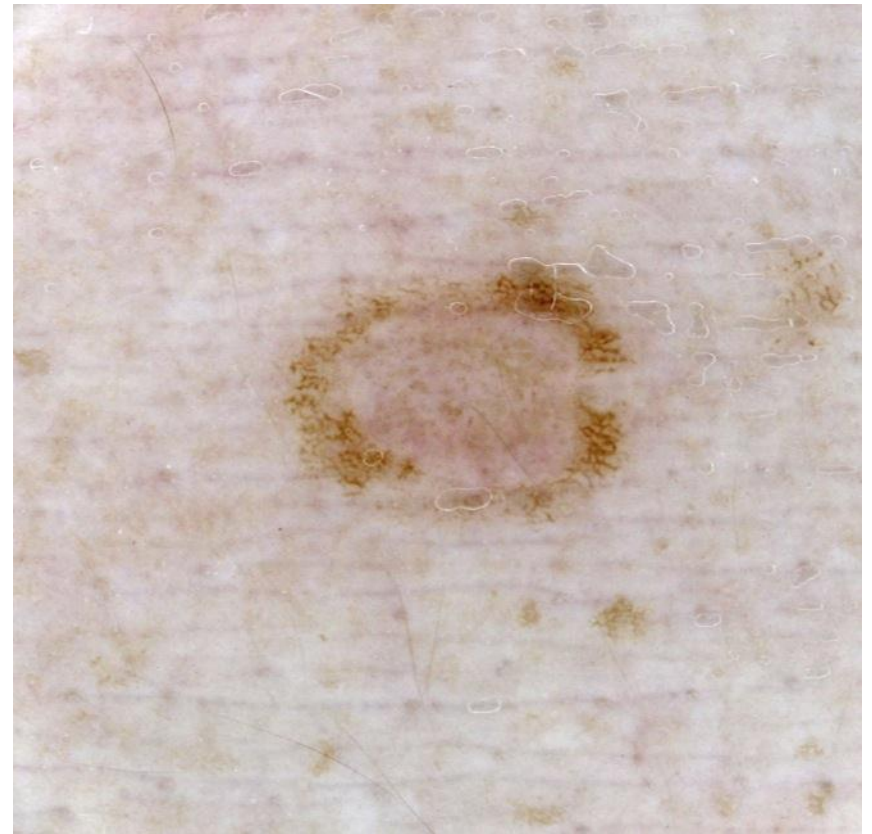
Dermatoscopy

Common mole



Globular naevus

Annular / eclipse naevus



Rim of pigment network

Blue naevus

- Often deep blue
 - May be grey, skin-coloured, brown
- Dermal spindle-shaped dendritic melanocytes
- Common or cellular histological subtypes



Which is blue naevus?

A



B



• A?

• B?

• Both?

B is blue naevus

Haemangioma

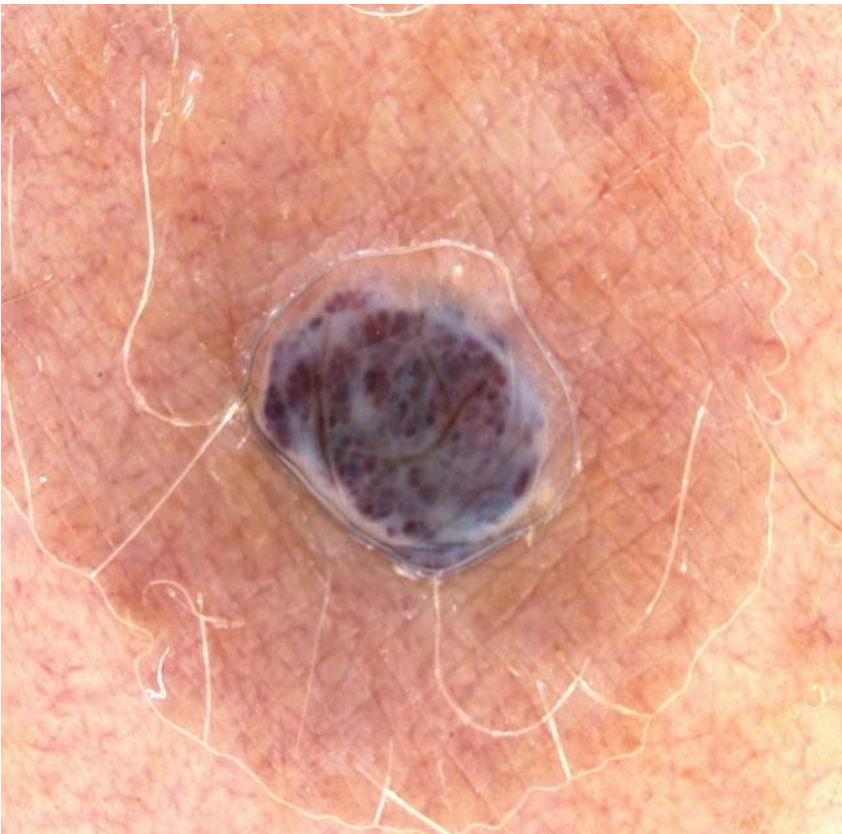


Blue naevus



Dermatoscopy

Haemangioma



- Clods pattern (lacunar)

Blue naevus



- Structureless pattern (homogeneous)

Combined congenital naevus

- Brown (compound) + blue (dermal) cpnts
- Histology:
 - 2 distinct cell types
 - Brown: small, round
 - Blue: spindle-cell



Papillomatous dermal naevus (Unna)

- Often on trunk
- Soft, protruding mole
- Skin-coloured, brown, black
- Appears later in life



Nonpapillomatous dermal naevus: (Miescher)

- Dome-shaped nodule on face
- Skin coloured to dark brown
- May have terminal hair
- Histology: dermal melanocytes



Halo (Sutton) naevus

- Congenital type naevus
- Halo of hypopigmentation
- Naevus may disappear
- Immune reaction, like vitiligo
- May lead to vitiligo



Which is dermal naevus?

A



B



• A?

• B?

• Both?

Both are dermal naevi

Unna naevus

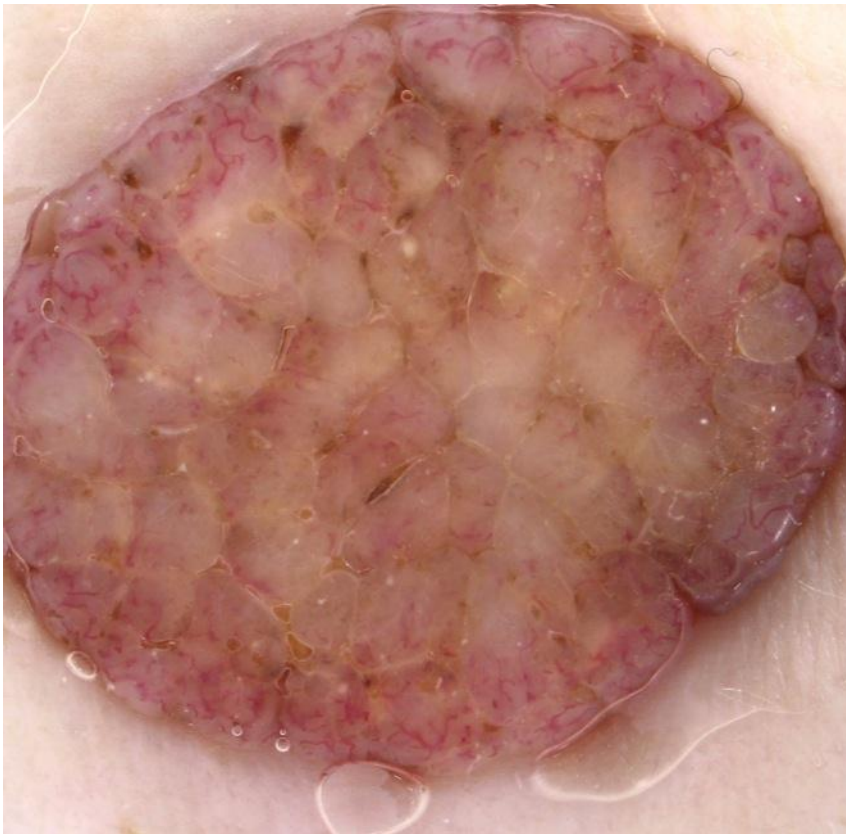


Miescher naevus



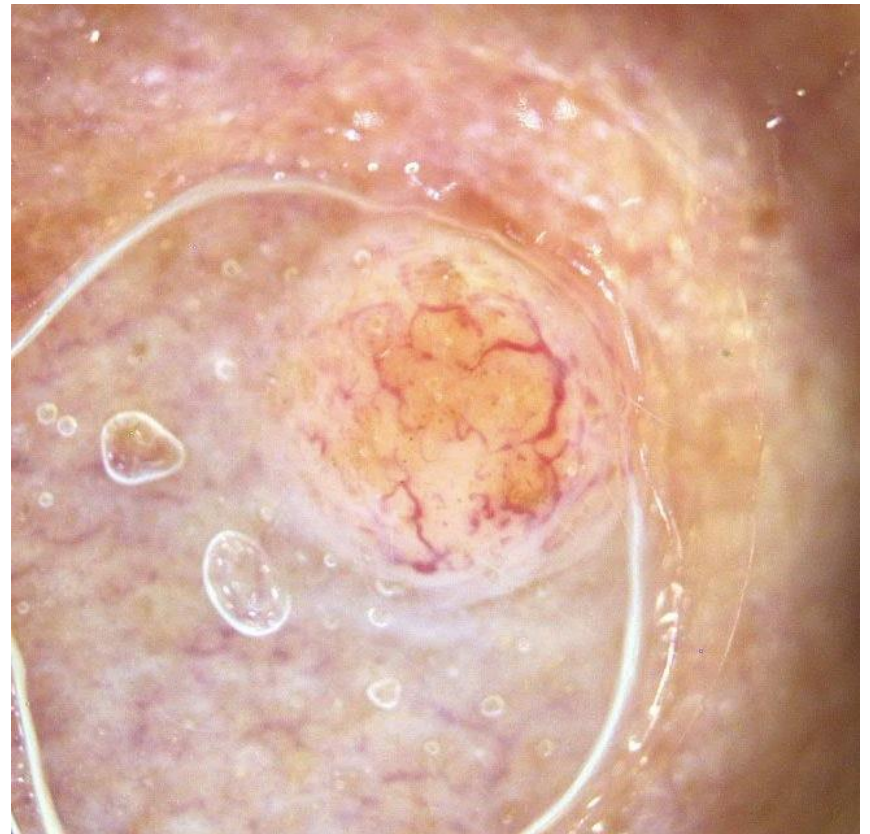
Dermatoscopy

Unna naevus



- Cobblestone pattern (clods)

Miescher naevus



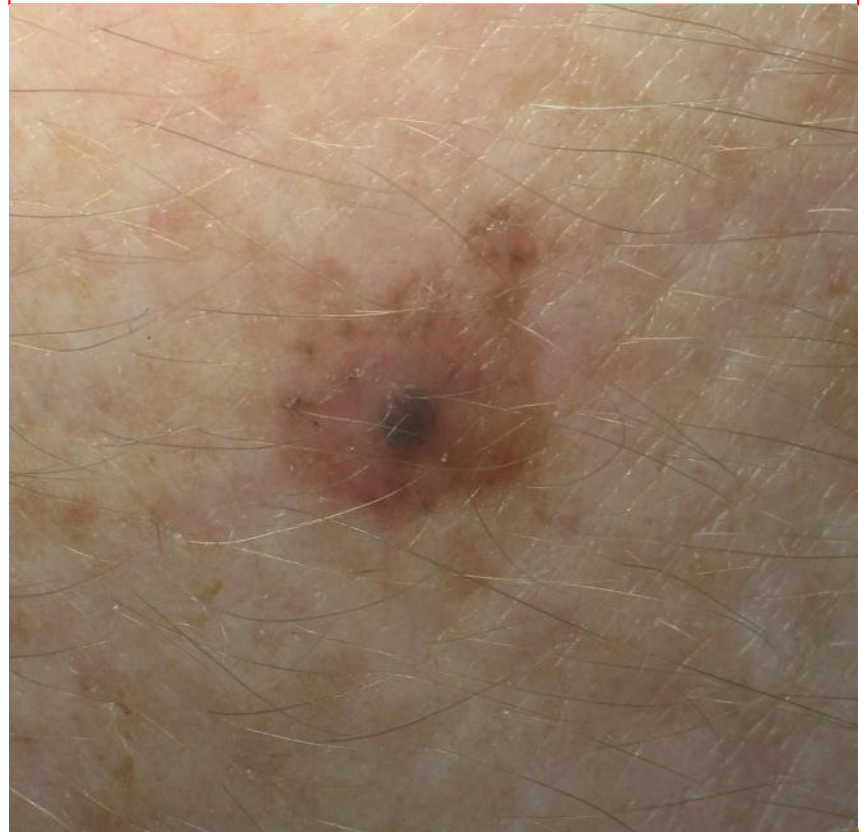
- Structureless pattern (+ vv)

Which is combined naevus?

A



B



• A?

• B?

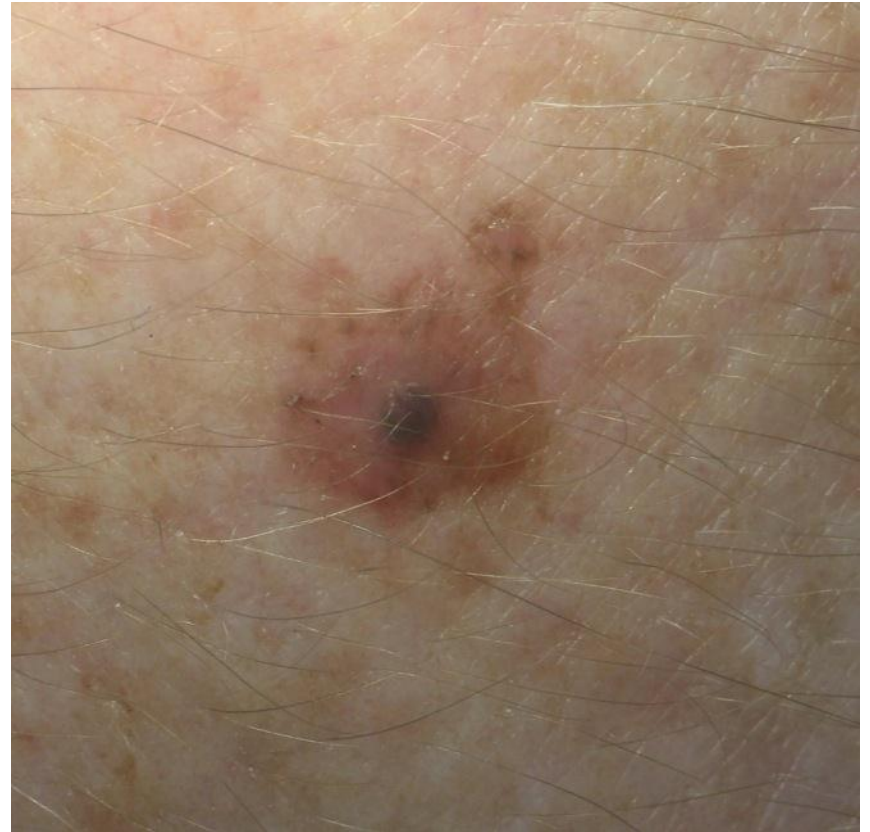
• Both?

B is combined naevus

Collision of 2 naevi



Combined naevus



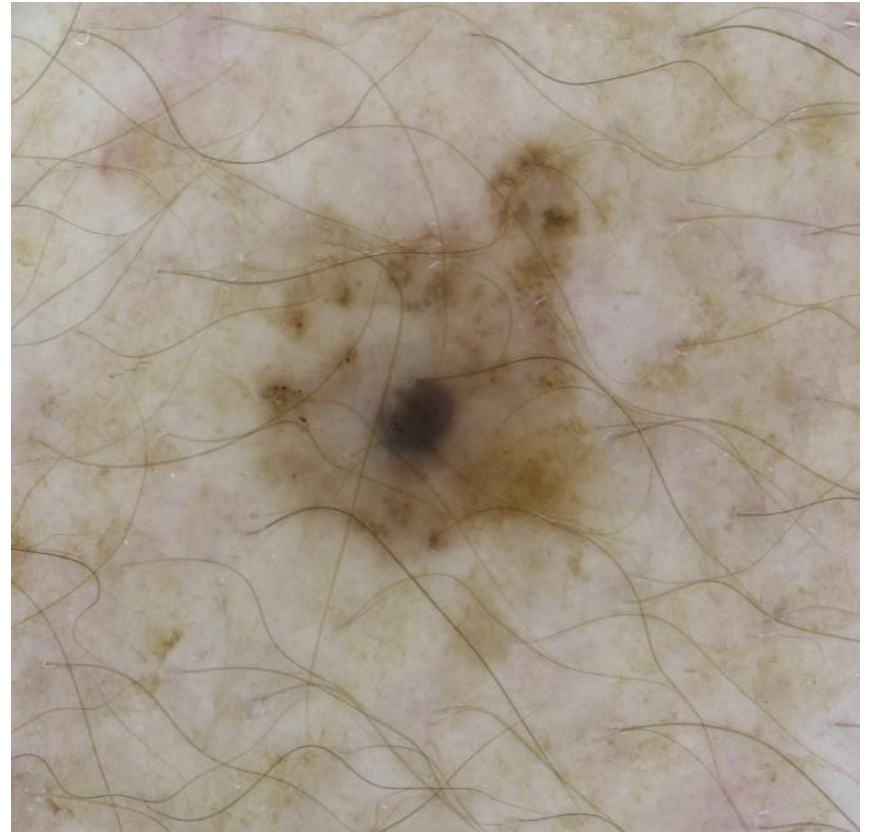
Dermatoscopy

Collision of 2 naevi



- Globular + reticular patterns

Combined naevus



- Structureless pattern (2 colours)

Which is congenital naevus?

A



B



• A?

• B?

• Both?

A is congenital naevus

Childhood onset 'congenital'



Acquired naevus



Dermatoscopy

Childhood onset 'congenital'



- Globular pattern (clods)

Acquired naevus



- Reticular pattern (lines)

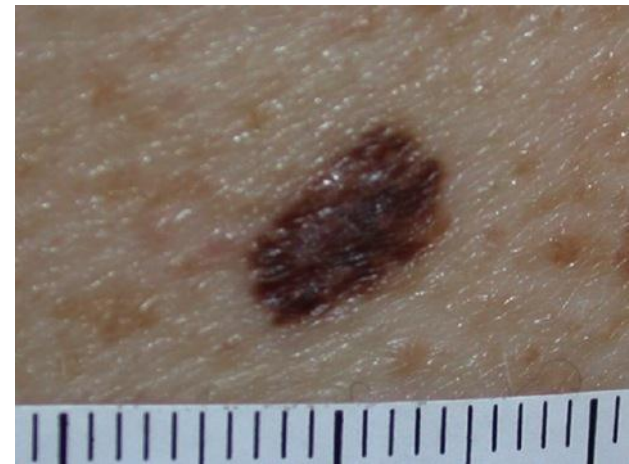
Clark naevi = acquired moles

- Most on trunk, proximal limbs
- Any colour (pink, brown, black)
- Flat
- Round or oval



Clark naevi = acquired moles

- Histology:
melanocyte nests
- Junctional naevus
- Compound naevus



Naevi in special sites

- Face
 - hair follicles
- Palms / soles
 - Ridges & furrows



Dermatoscopy

- Face
 - Hair follicles
 - White circles
- Palms / soles
 - Ridges & furrows
 - Parallel lines



Which is facial naevus?

A



B



• A?

• B?

• Both?

A is facial naevus

Facial naevus



Acral naevus (plantar)



Dermatoscopy

Facial naevus



- White holes (reticular)

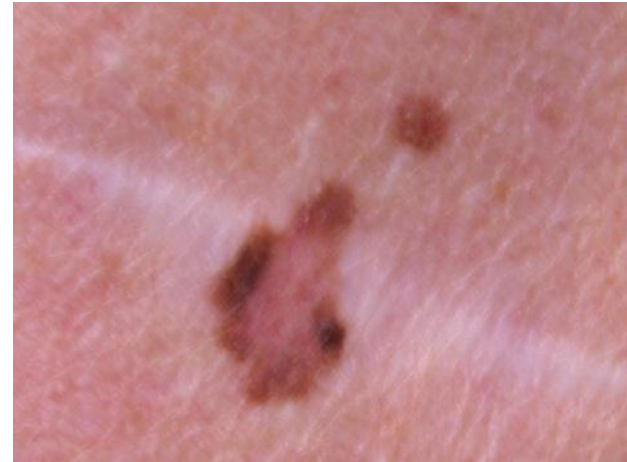
Acral naevus (plantar)



- Parallel lines (+ lattice-like)

Recurrent naevus

- Naevus in scar following incomplete excision:
 - Shave biopsy
 - Laser ablation



Which is recurrent naevus?

A



B



• A?

• B?

• Both?

A is recurrent naevus

Recurrent naevus



Recurrent melanoma

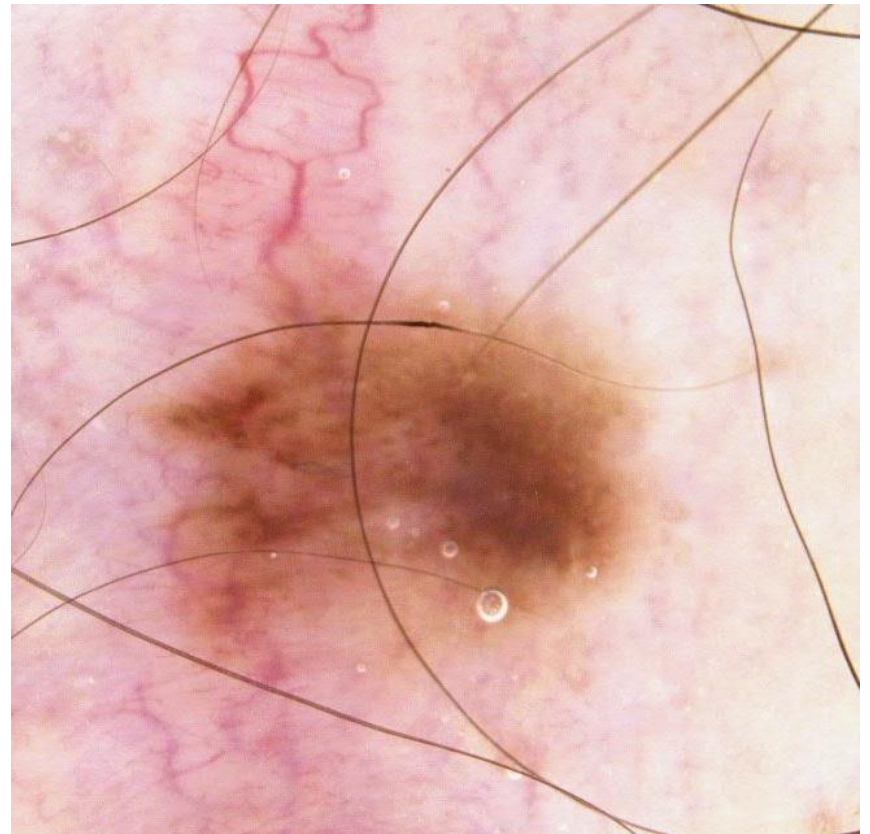


Dermatoscopy

Recurrent naevus



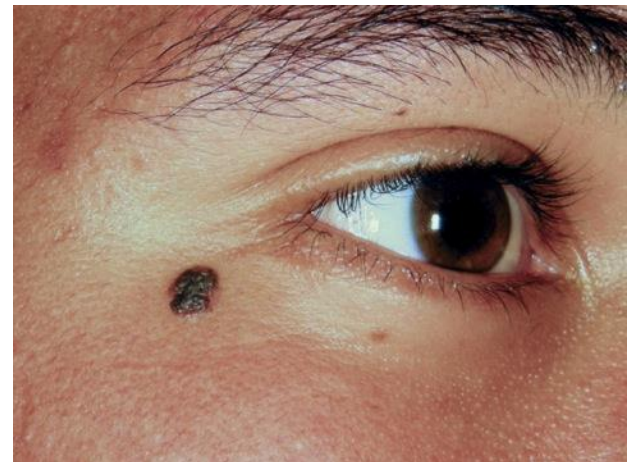
Recurrent melanoma



Both show disordered structure and complete excision for histology is imperative

Spitz naevus

- Reddish papule, often on face
- Usually a child
- Pigmented Spitz is brown to black



Reed naevus

- Dark brown to black papule
- Extremities
- Most common in children
- May disappear
- Specific histology



Which is spindle cell / Reed naevus?

A



B



• A?

• B?

• Both?

B is spindle cell / Reed naevus

Spitz naevus



Spindle cell tumour of Reed



Dermatoscopy

Spitz naevus



- Clods pattern (vascular globules)

Spindle cell tumour of Reed



- Radial lines pattern (starburst)

Which is melanoma?

A



B



• A?

• B?

• Both?

A is melanoma

Melanoma

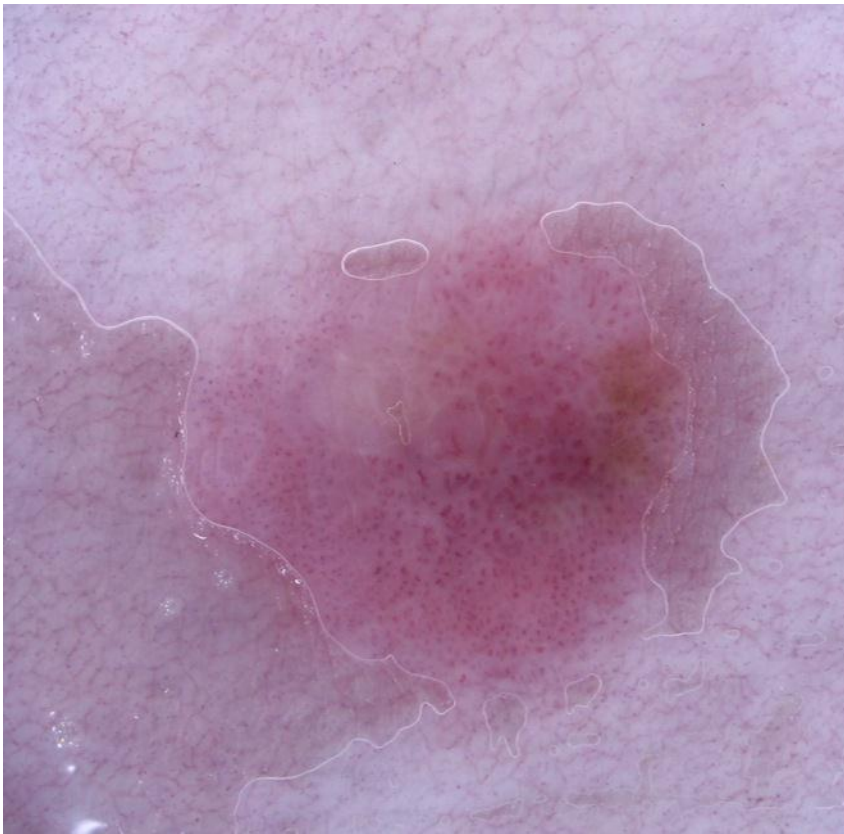


Solid pink naevus



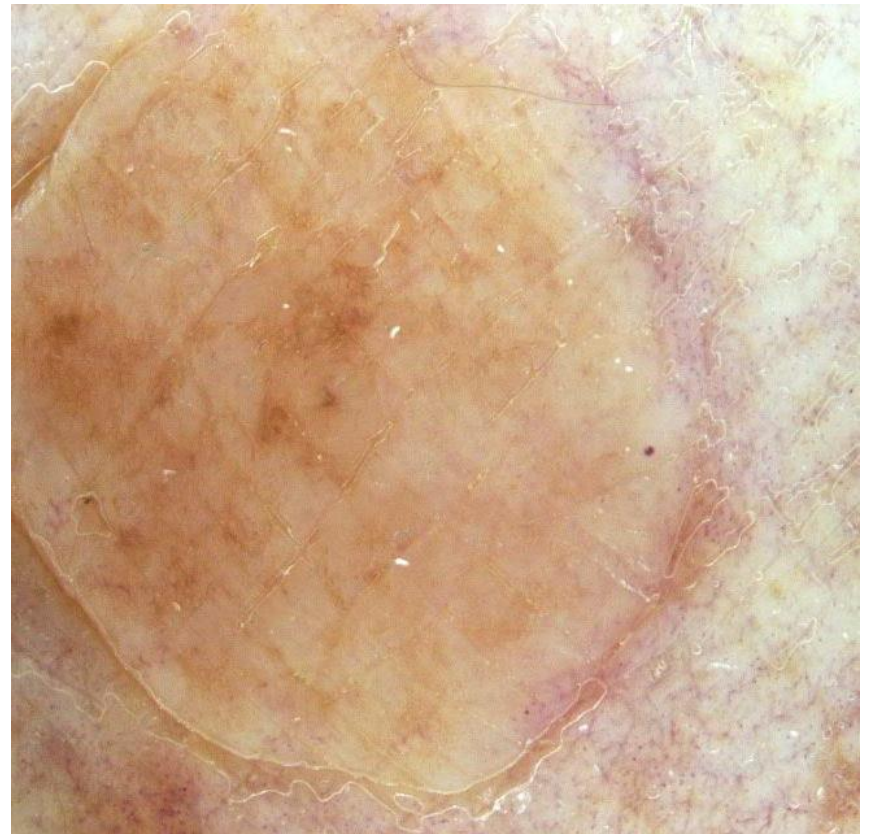
Dermatoscopy

Melanoma



- Atypical vascular pattern

Solid pink naevus



- Structureless pattern

Signature naevi

- Solid pink
- Solid brown
- Eclipse
- Cockade
- Lentiginous
- Perifollicular hypopigmentation
- People often have several of similar type
- More obvious in fair skinned people with many moles
- These are 'typical' for the individual and are **not** atypical naevi

Signature naevi

Solid brown

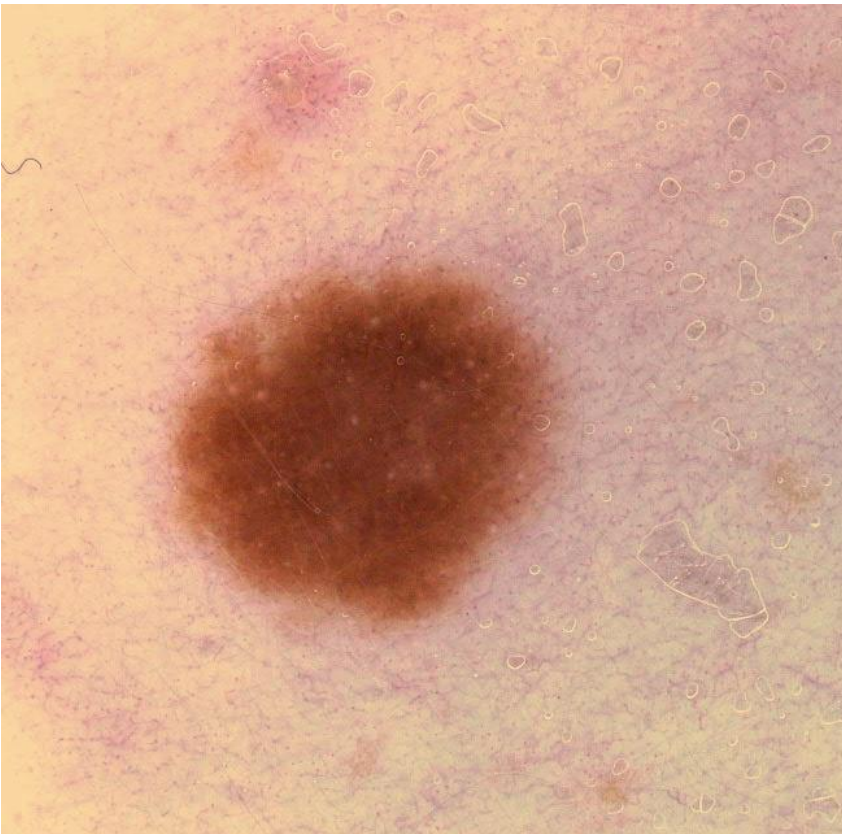


Solid pink



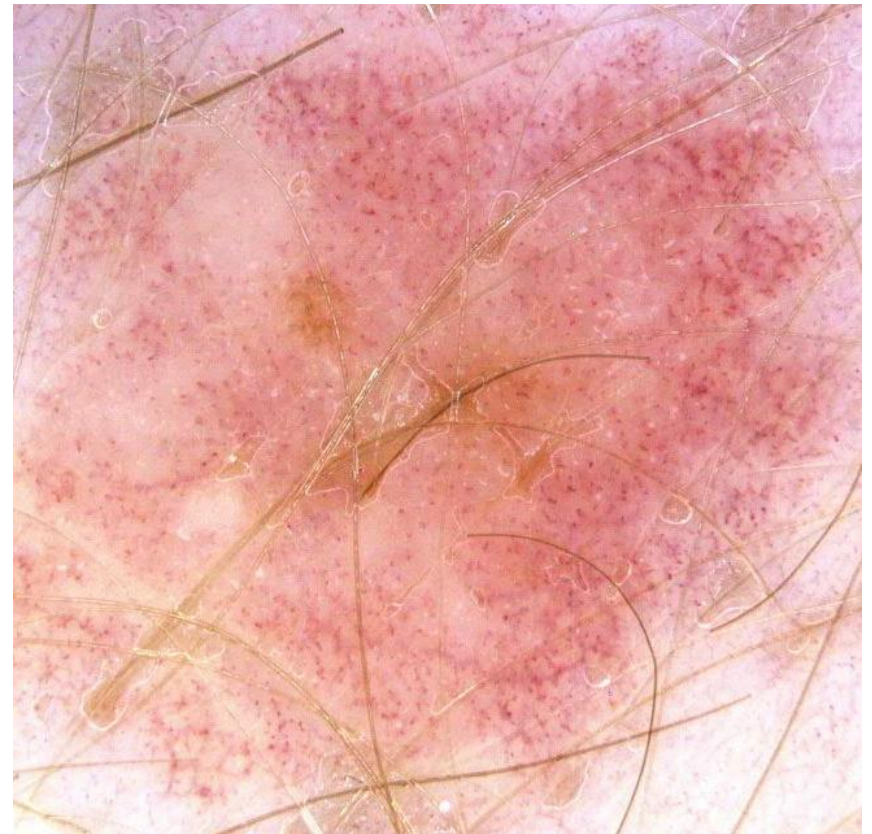
Dermatoscopy

Solid brown



- Structureless, single colour

Solid pink



- Regular vascular pattern

Signature naevi

Eclipse



Cockade



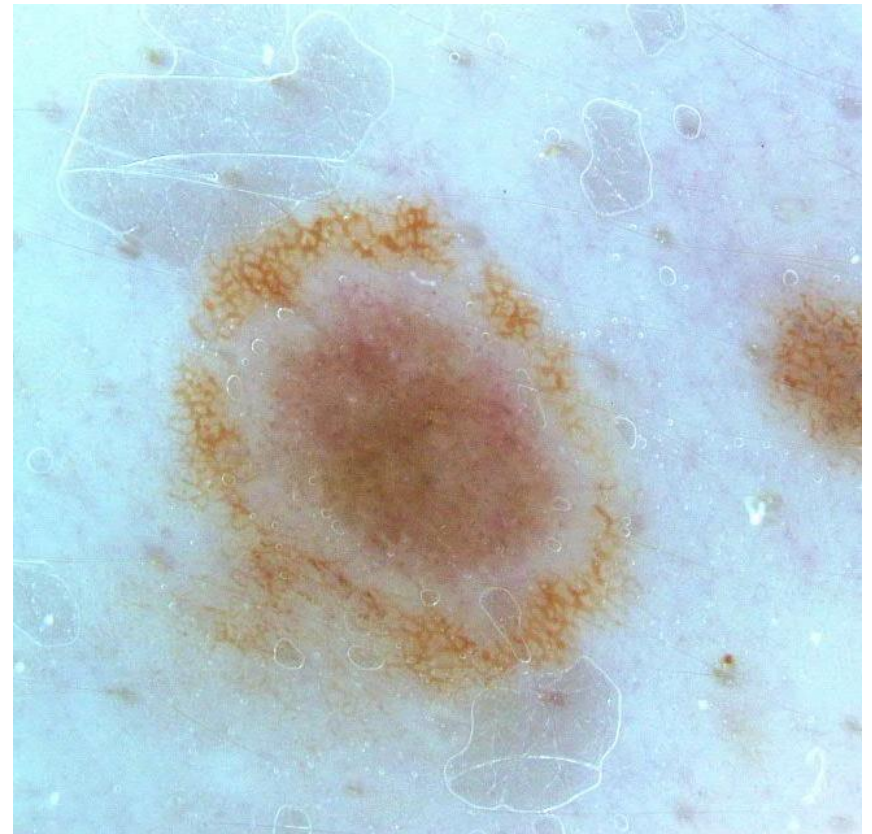
Dermatoscopy

Eclipse



- 2 patterns (reticular + structureless)

Cockade



- 3 patterns (reticular + structureless + globular)

Cockade

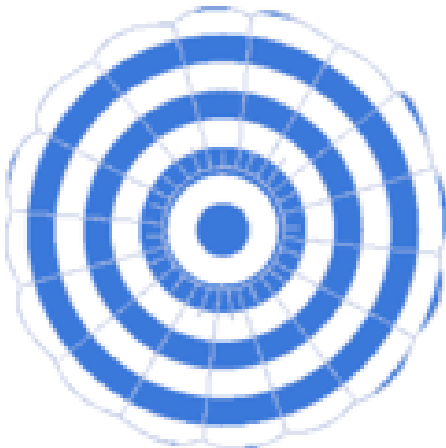
Hungary



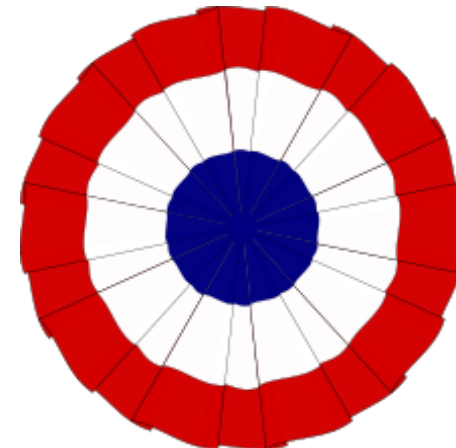
Brazil



Argentina



France



Signature naevi

Lentiginous

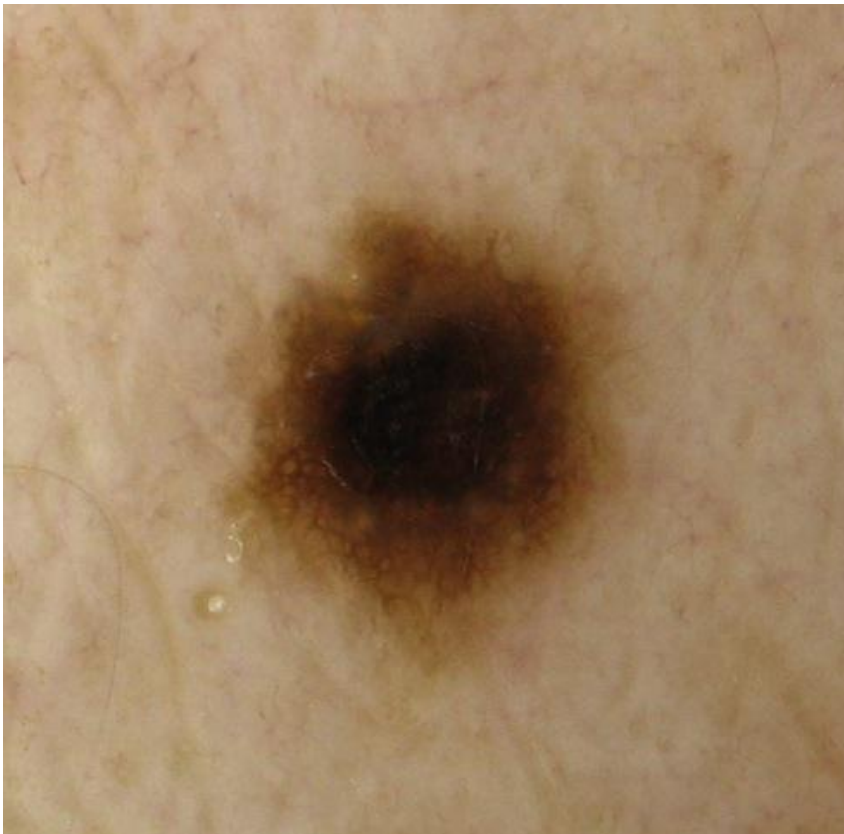


Perifollicular hypopigmentation



Signature naevi: dermatoscopy

Lentiginous



- Reticular, structureless centre

Perifollicular hypopigmentation



- Reticular, white circles (hairs)

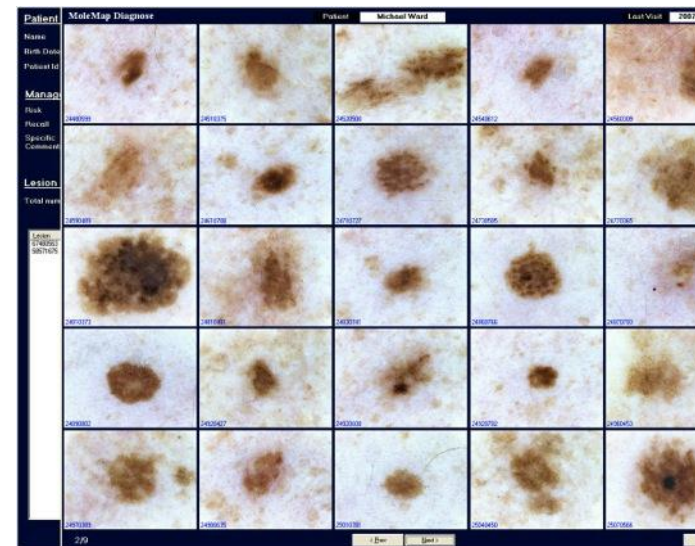
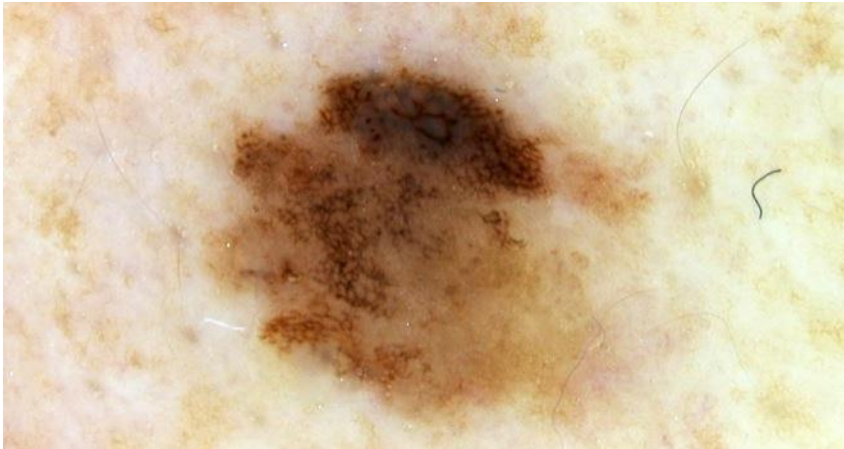
Other terminology

- Atypical naevus
 - Benign or melanoma!
- Dysplastic naevus
 - Benign or melanoma!
- Atypical Spitz naevus
 - Benign or melanoma!
- MELTUMP
 - (melanocytic tumour with uncertain malignant potential)
 - Benign or melanoma!

Atypical naevi



Atypical naevi: dermatoscopy



Which is benign?

A



B



• A?

• B?

• Both?

A is benign

Atypical compound naevus

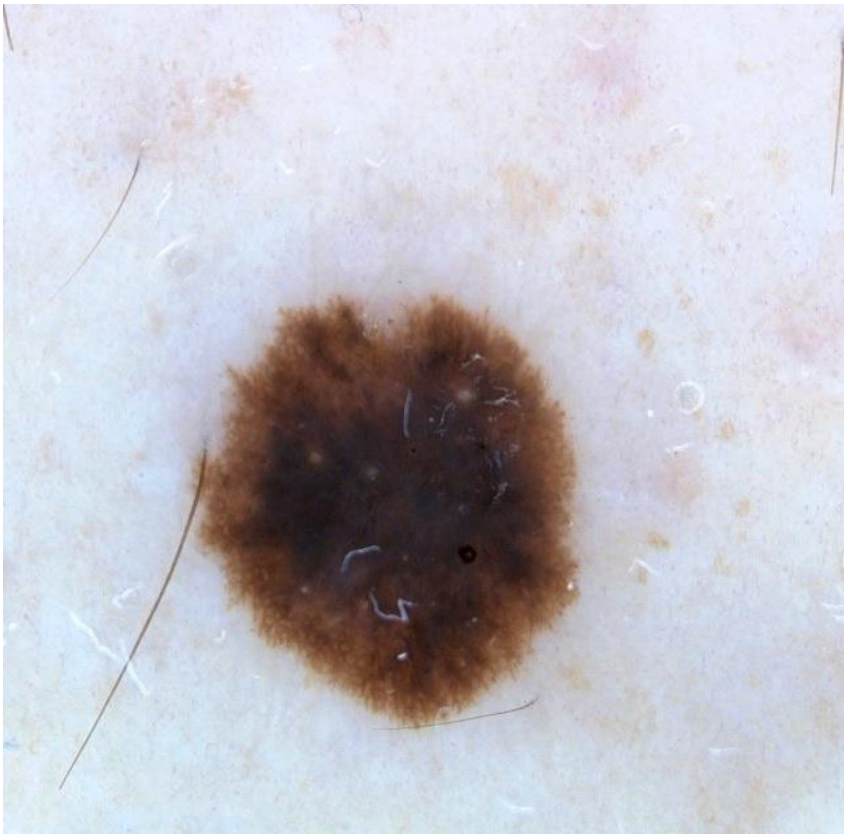


Melanoma in situ

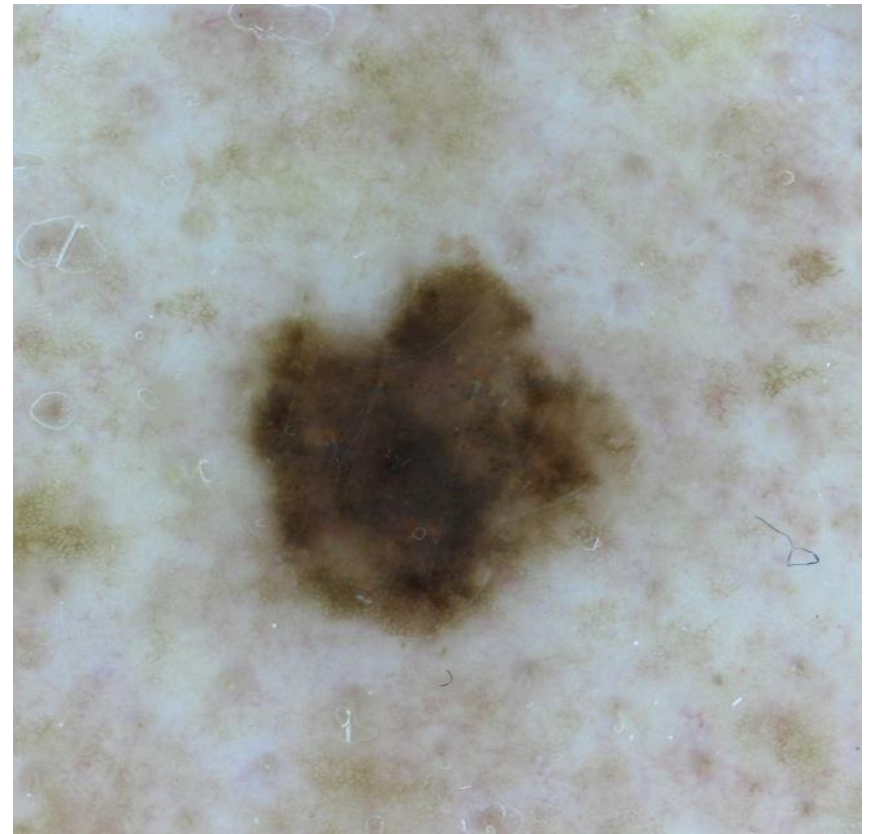


Dermatoscopy

Atypical compound naevus



Melanoma in situ



B has greater asymmetry of structure or 'Chaos'

Which is benign?

A

B



• A?

• B?

• Both?

Both are melanoma

Melanoma in situ



Satellite metastasis



Dermatoscopy

Melanoma in situ



- Disordered structure

Satellite metastasis



- Less disordered but more dangerous!

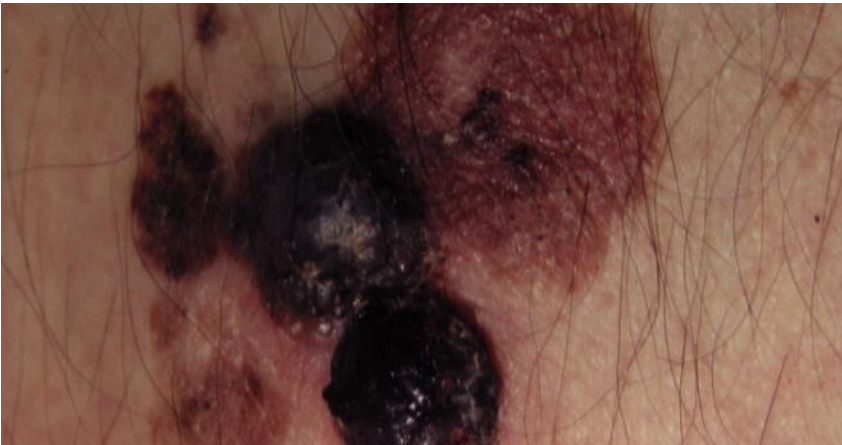
Melanoma

- Malignant neoplasia arising from melanocytes
- In situ or invasive
- Very difficult to diagnose
 - Clinically, dermatoscopically & histologically
- Breslow thickness for invasive melanoma
 - Most important prognostic factor

Clinical subtypes of melanoma

- Lentigo maligna
- Lentigo maligna melanoma
- Superficial spreading melanoma
- Nodular melanoma
- Acral lentiginous melanoma
- Desmoplastic melanoma
- Mucosal melanoma
- Naevoid melanoma
- Animal melanoma

Melanoma

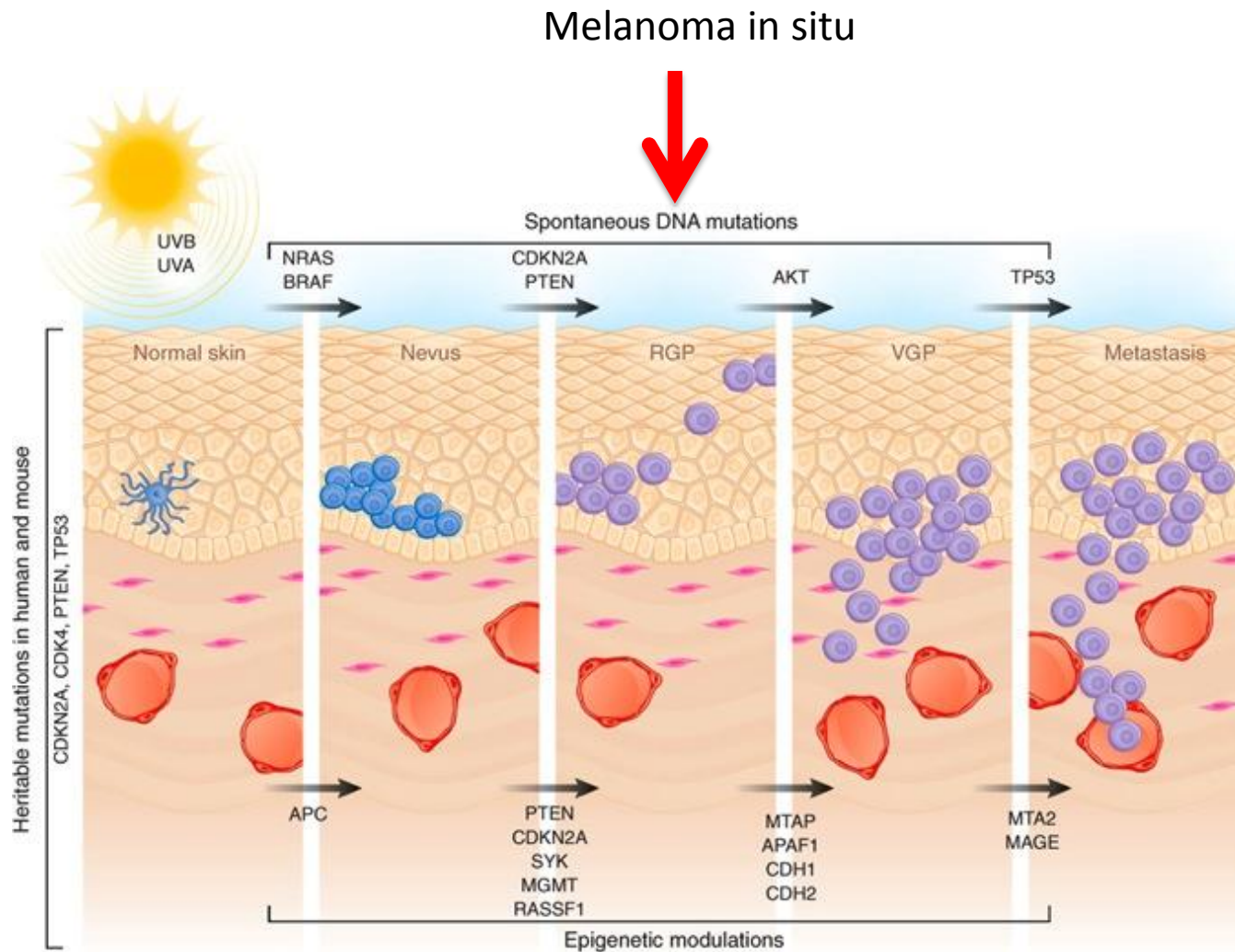


Clinical ABCD rule for melanoma

- **A**symmetry of shape
- **B**order irregularity
- **C**olour variability
- **D**iameter >6 mm
- For lay people to detect melanoma
- Features may not apply to early melanoma or nodular melanoma



Early diagnosis of melanoma



Ugly duckling sign



Which is melanoma?

A



B



• A?

• B?

• Both?

B is melanoma in situ

Atypical compound naevus

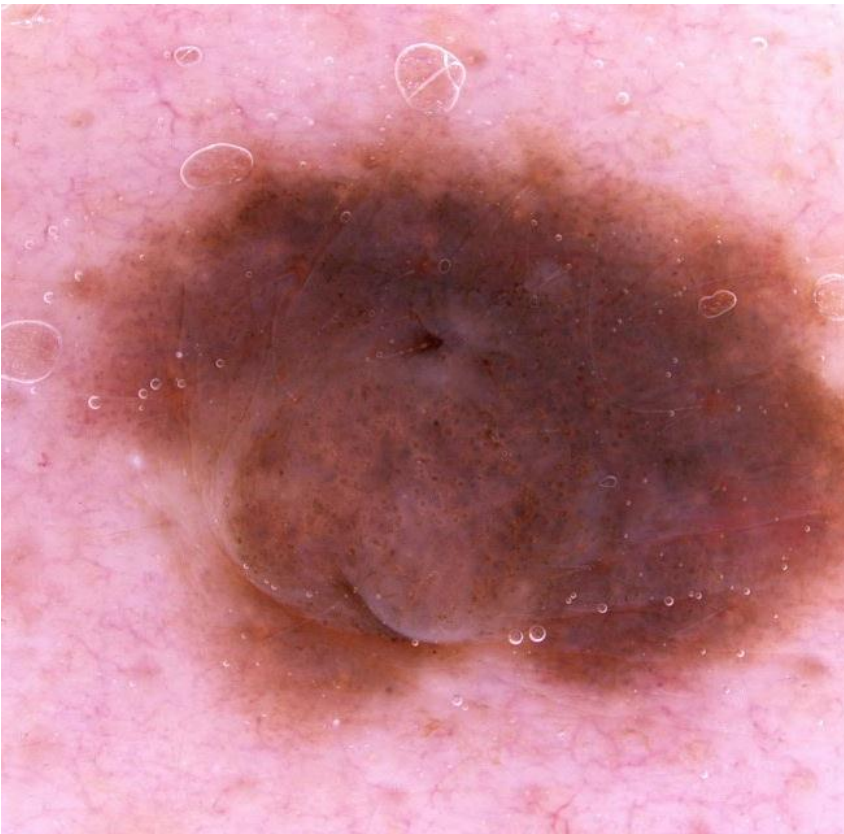


Melanoma in situ



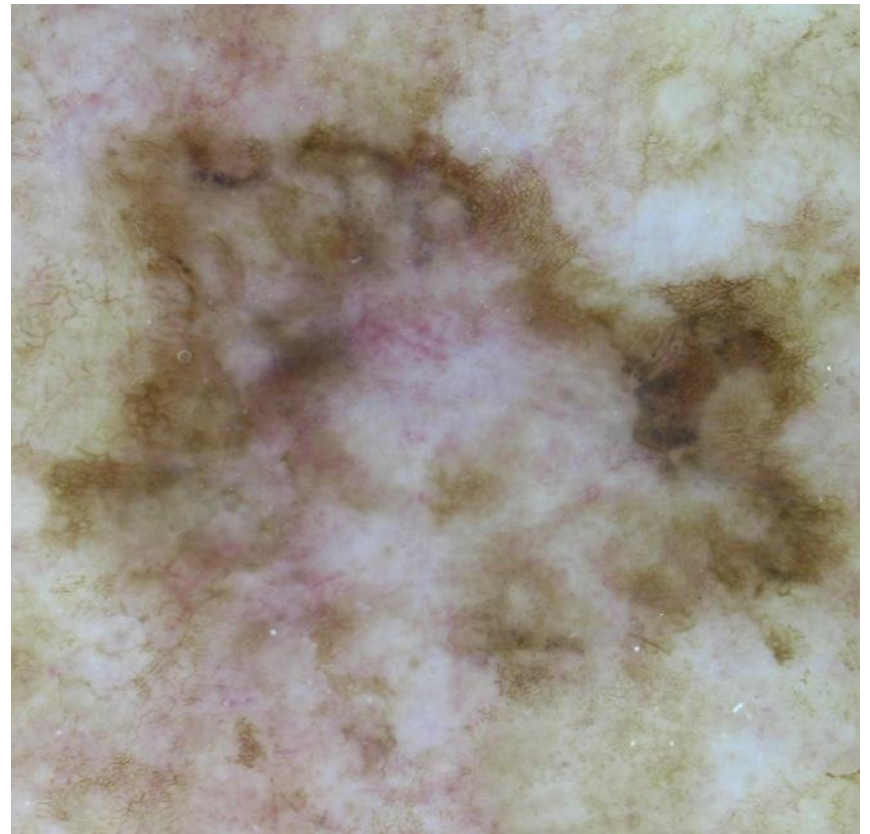
Dermatoscopy

Atypical naevus



- Less disordered

Melanoma in situ



- More disordered

Which is melanoma?

A



B



• A?

• B?

• Both?

A is melanoma

Melanoma

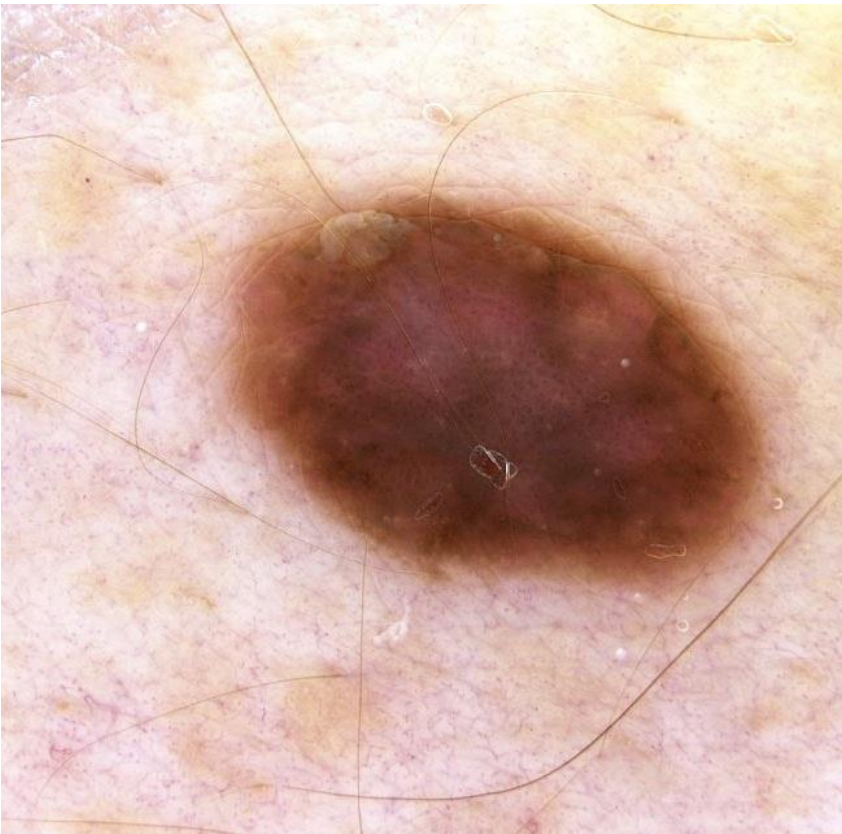


Atypical naevus



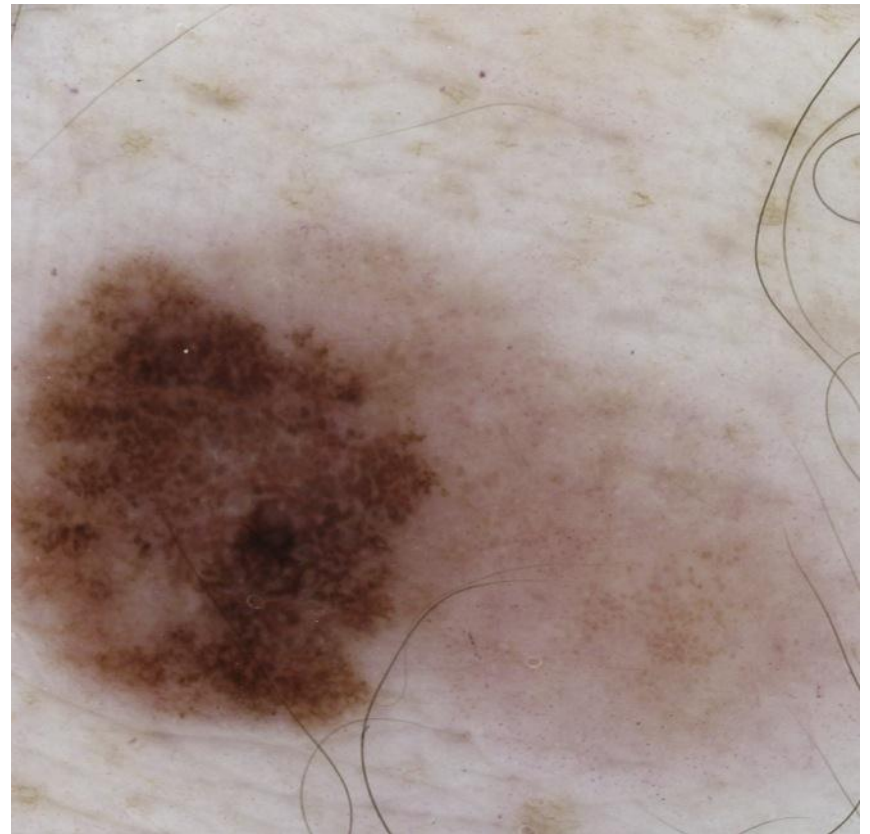
A is melanoma

Melanoma



- More disordered

Atypical naevus



- Less disordered (but not much)

Which is melanoma?

A



B



• A?

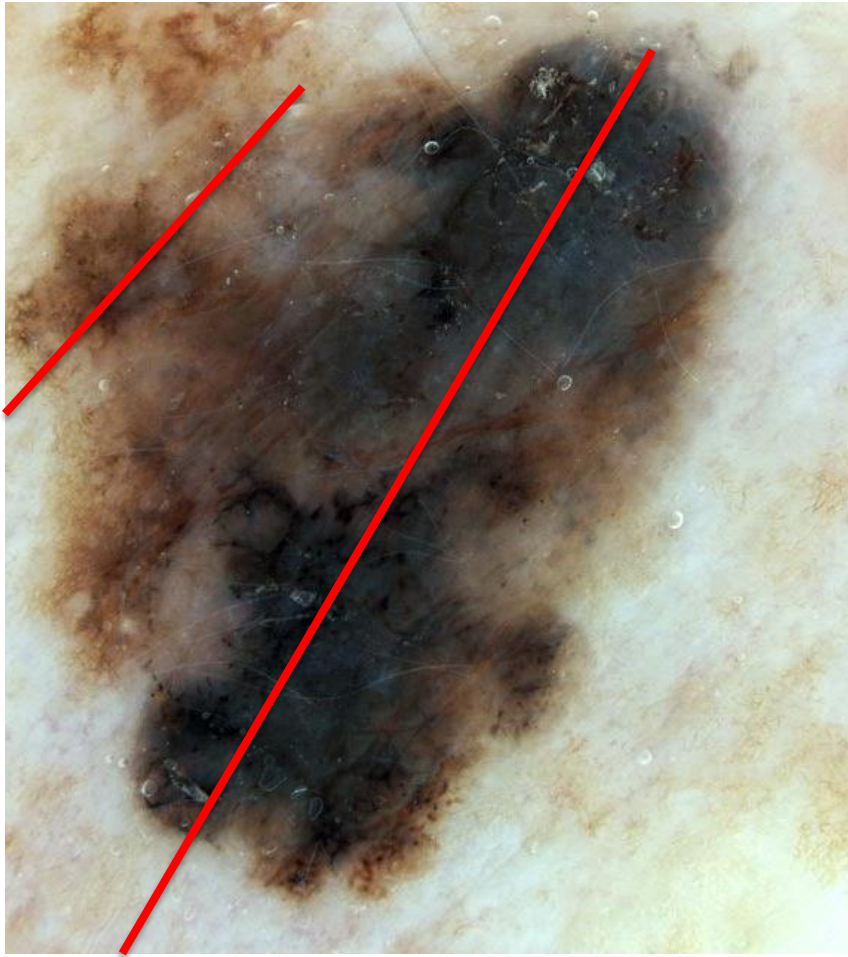
• B?

• Both?

Both reported as melanoma in situ



Dermatoscopy suggests invasive!



Clinical features of pigmented nonmelanocytic lesions

Melanotic macules

- Hyperpigmentation of basal keratinocytes
 - Freckles (ephilides)
 - Genital lentiginosis
 - Lip or oral lentiginosis
 - Ink spot lentigo
 - PUVA lentigines
 - Carney complex
- Syndromes:
 - Peutz-Jegher
 - LEOPARD
 - Laugier-Hunziker
 - Bannayan-Riley-Ruvalcaba

Melanotic macules

- Mucosal melanosis



- Mucosal melanosis



- Solar lentigo

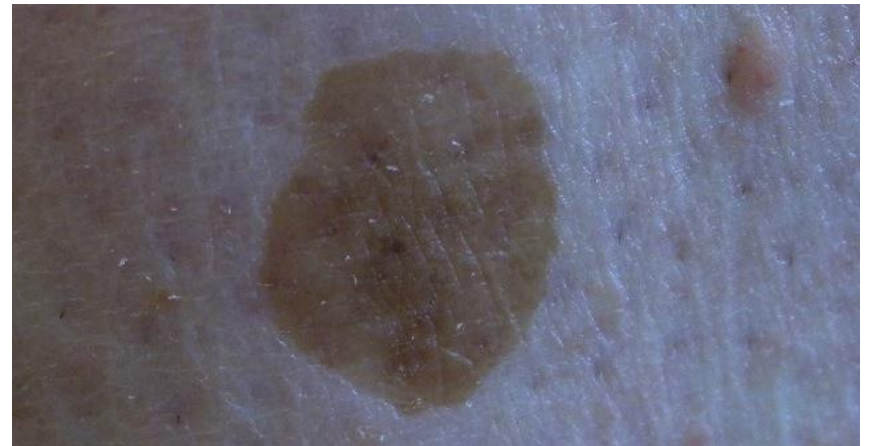


- LEOPARD syndrome

Solar lentigo

- Circumscribed light brown macule
- Chronic UV exposure
- May develop into seborrhoeic keratoses
- Melanin in basal keratinocytes
- Melanocytes normal or increased number
- Elongated rete ridges

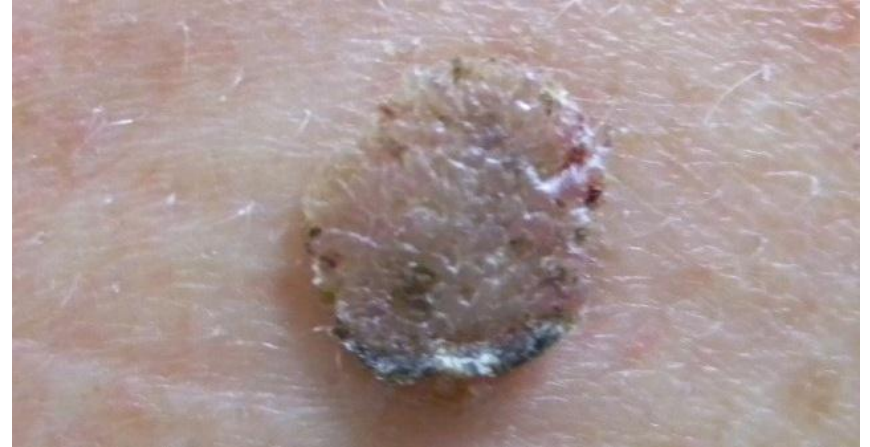
Solar lentigo



Seborrhoeic keratoses

- Skin coloured, yellow, brown, black
- Smooth to verrucous
- Irregular structure
- Flat or thickened
- Very variable in appearance
- “Stuck-on”

Seborrheic keratoses



Nonmelanocytic: Lichen planus-like keratosis

- Regressing solar lentigo or seborrheic keratosis
- Flat, well-defined margin
- Purple, grey-brown
- Fade away



Lichen planus-like keratosis

- Pre-existing lesion
- Fading LPLK



Which is mucosal melanosis?

A



B



• A?

• B?

• Both?

B is mucosal melanosis

Perianal melanoma



Labial melanosis



Which is solar lentigo?

A



B



• A?

• B?

• Both?

A is solar lentigo

Solar lentigo



Melanocytic naevus



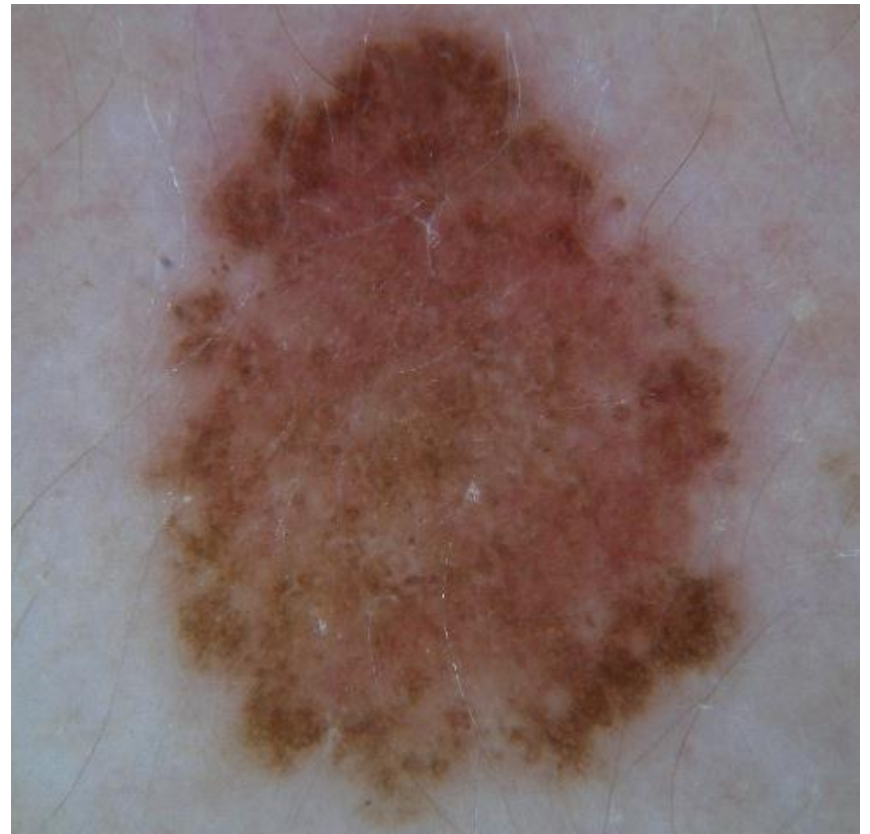
Dermatoscopy

Solar lentigo



- Structureless

Melanocytic naevus



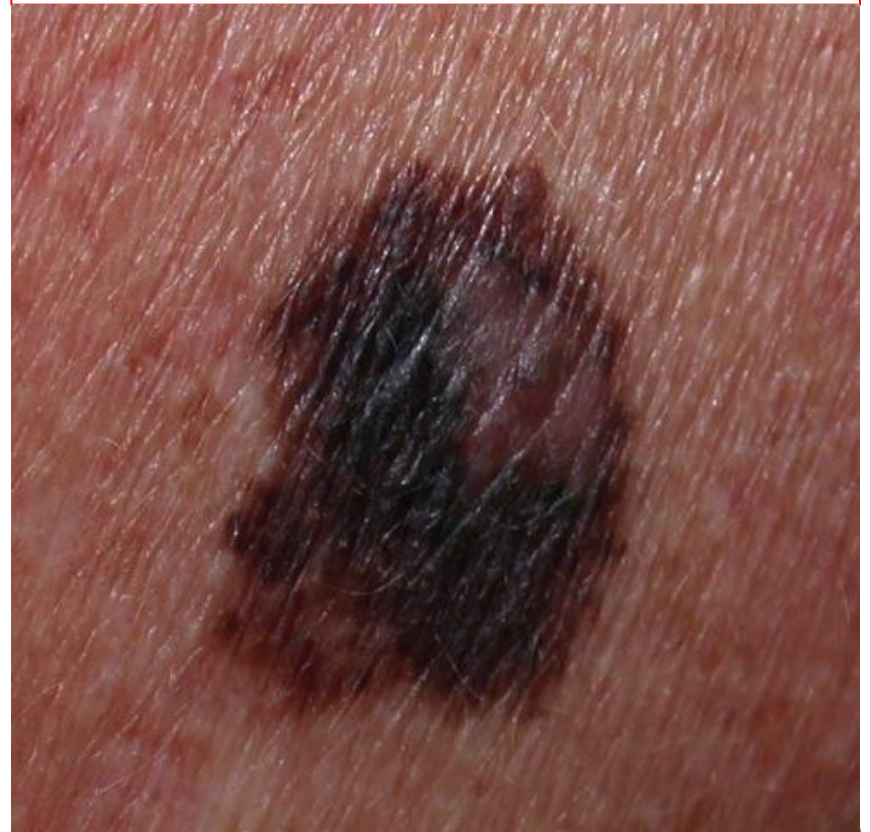
- Several structures

Which is seborrhoeic keratosis?

A



B



• A?

• B?

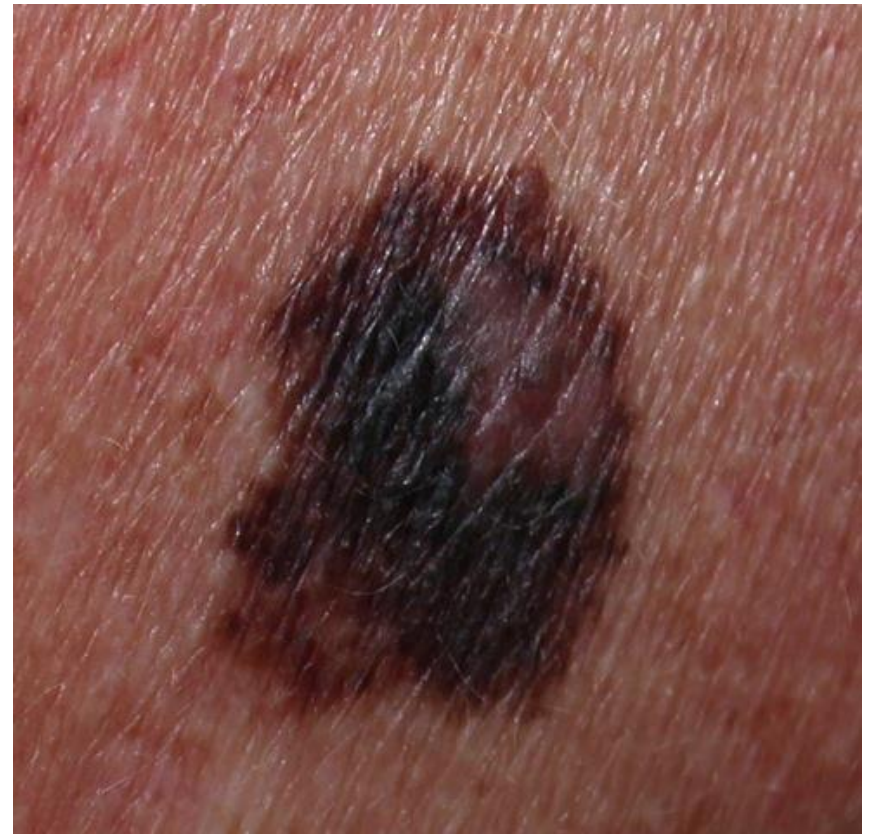
• Both?

A is seborrhoeic keratosis

Seborrhoeic keratosis



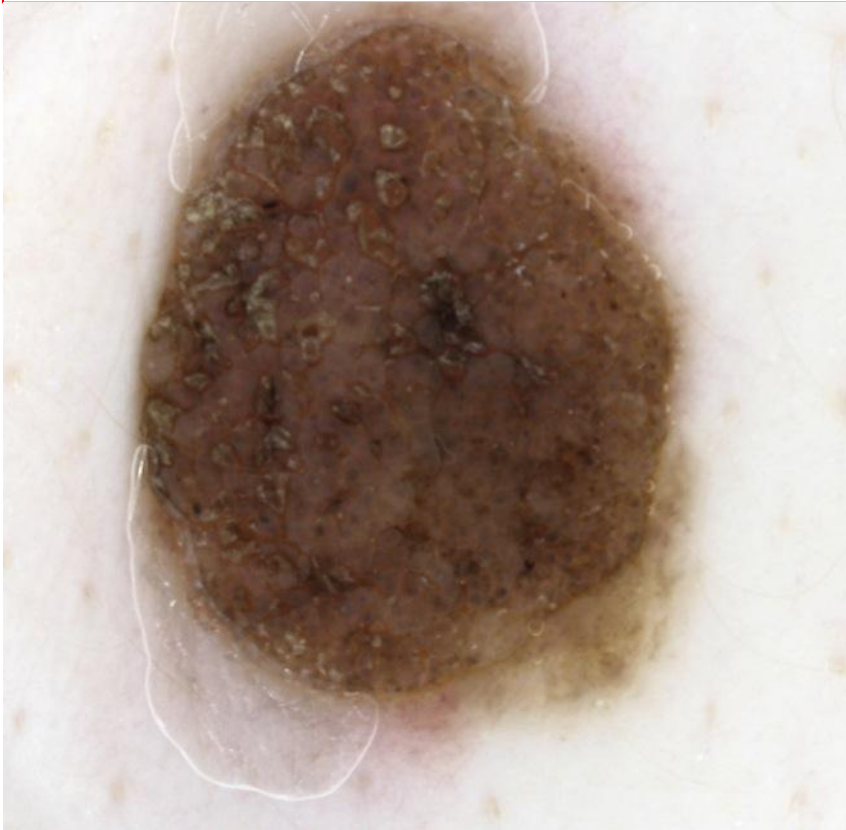
Melanoma



Easy! The seborrhoeic keratosis is scaly / warty

Which is seborrhoeic keratosis?

A



B



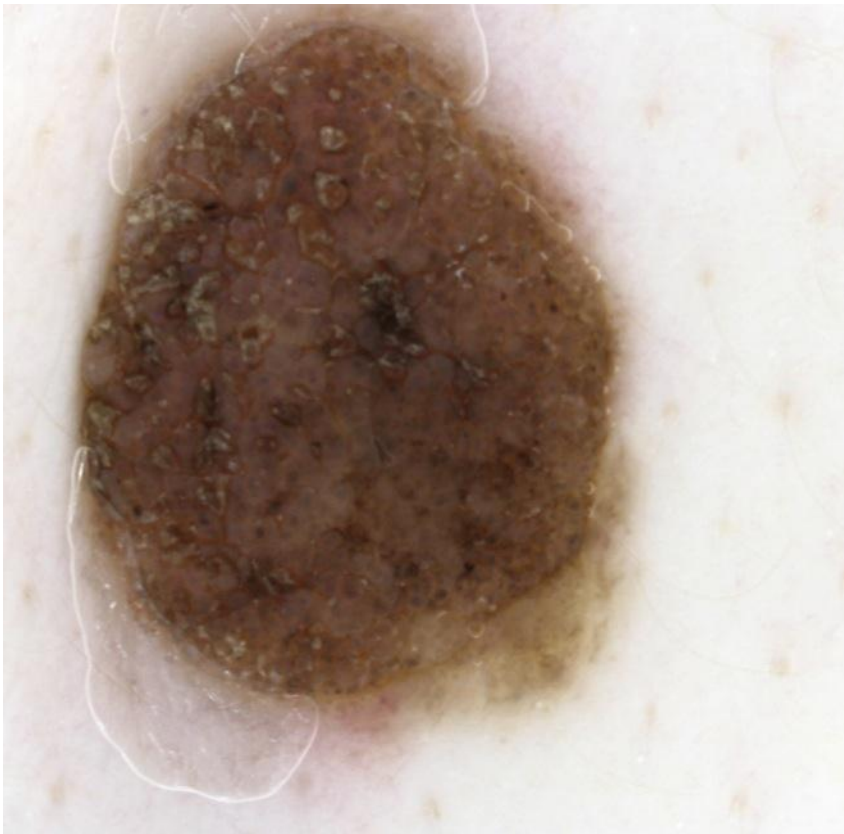
• A?

• B?

• Both?

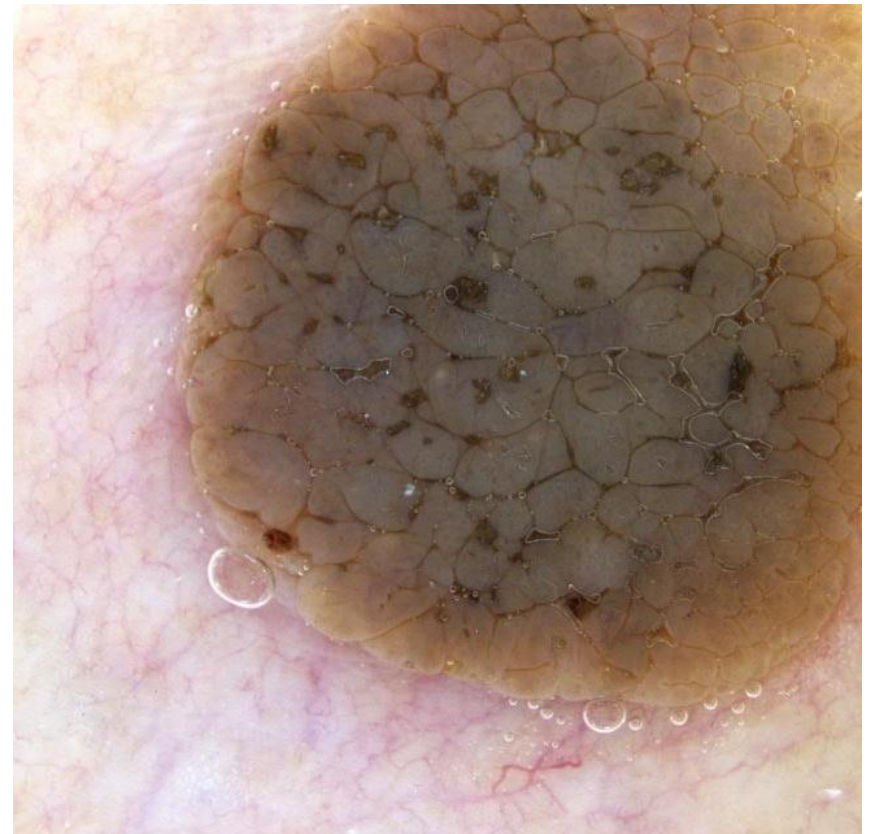
B is seborrhoeic keratosis

Dermal papillomatous naevus



Discontinuous clods

Seborrhoeic keratosis



Interlinked clods + thick lines

Does it wobble?

Yes: melanocytic naevus

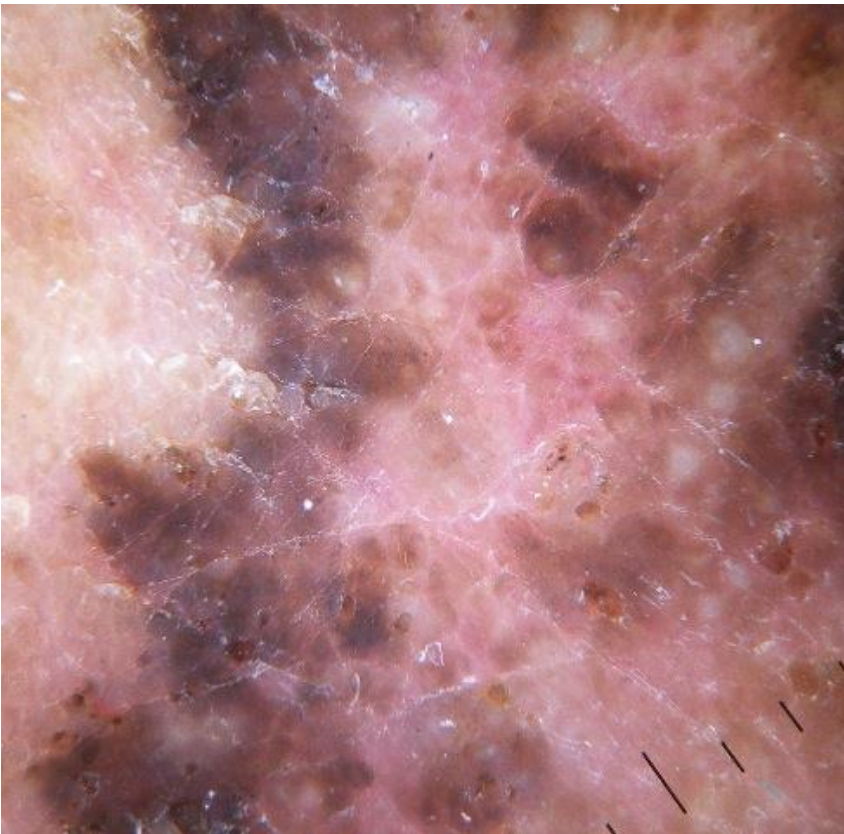


No: seborrhoeic keratosis



Dermatoscopy

Seborrhoeic keratosis



Melanoma



Not so easy! Both have irregular and complex structures

Nonmelanocytic cancers

- Basal cell carcinoma
 - Locally destructive
 - On hair-bearing skin only
 - Various types:
 - Nodular
 - Superficial
 - Morphoeiform
 - Fibroepithelial
 - Infundibulocystic
 - May be pigmented
- Actinic keratoses
 - Rough white lesions on erythematous base
 - May be pigmented
- SCC in situ
 - Red scaly plaque
 - May be pigmented
- Invasive SCC

Basal cell carcinoma

- Slow growing tumours on any site
- Locally destructive
- Early ulceration & bleeding
- May be pigmented
- Various subtypes:
 - Nodulocystic
 - Micronodular
 - Morphoeic / sclerosing
 - Ulcerative
 - Superficial
 - Basisquamous

Basal cell carcinoma



Actinic / solar keratosis

- Fluctuating small scaly plaques on areas chronically exposed to sunlight (face, hands)
- Tender, red or brown superficial lesions
- Variable adherent scale or horn
- Only on other sites when face and hands are badly affected
- Uncommon in darker skin types
- Uncommon in indoor workers

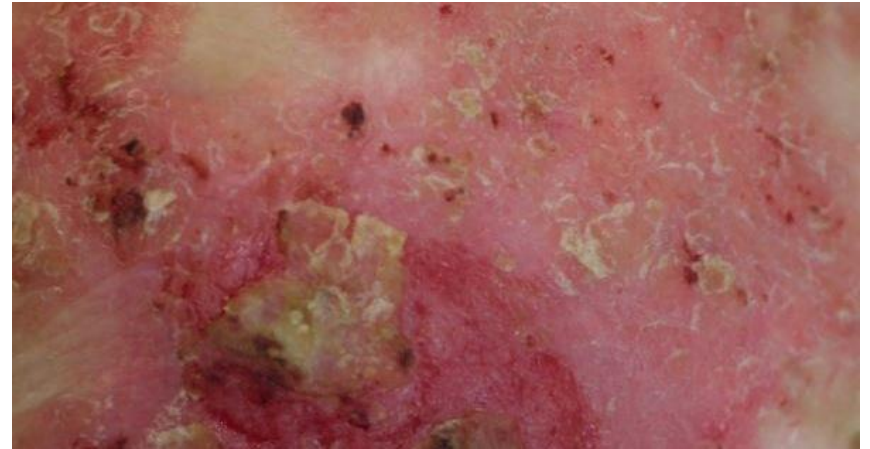
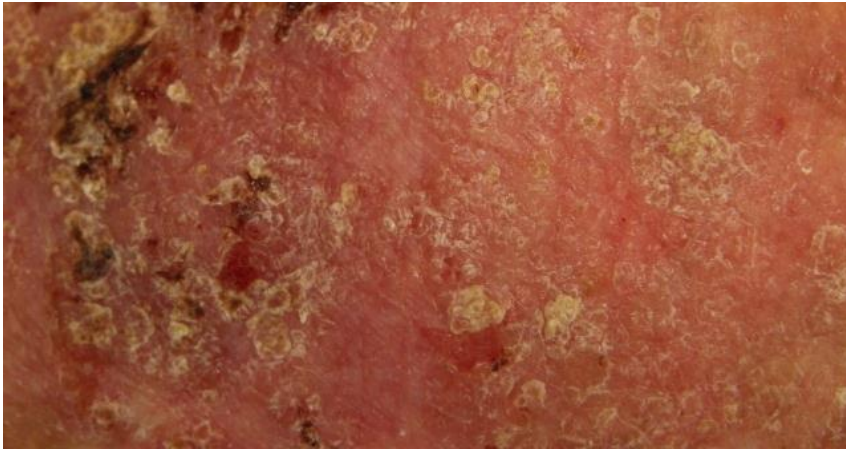
Actinic keratoses



SCC in situ

- One or more slowly-enlarging, red to brown, irregular plaques
- On any site
- May ulcerate or bleed
- Scale is prominent
- “Bowen disease”
- Often confused with eczema or psoriasis

SCC in situ



All 4 of these were all found on the same patient's trunk and limbs

Invasive SCC

- Usually arise from actinic keratosis or SCC in situ
- Fast-growing indurated, tender plaques or nodules
- Variable scale, horn and ulceration
- Variable differentiation:
 - Keratoacanthoma
 - Microinvasive disease
 - Well differentiated
 - Moderately well
 - Undifferentiated
 - Anaplastic

Invasive SCC



Which is BCC?

A



B



• A?

• B?

• Both?

A is BCC

Pigmented BCC

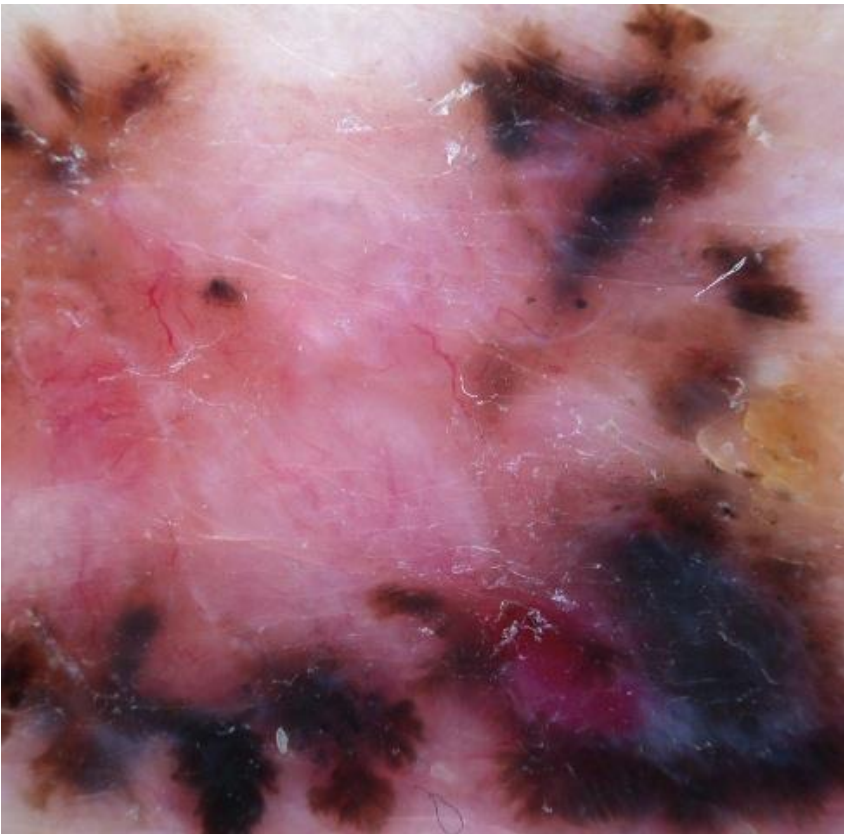


Melanoma in situ



Dermatoscopy

Pigmented BCC



Irregular peripheral pigment

Melanoma in situ



Irregular scattered pigment

Which is BCC?

A



B



• A?

• B?

• Both?

B is BCC

Dermal naevus

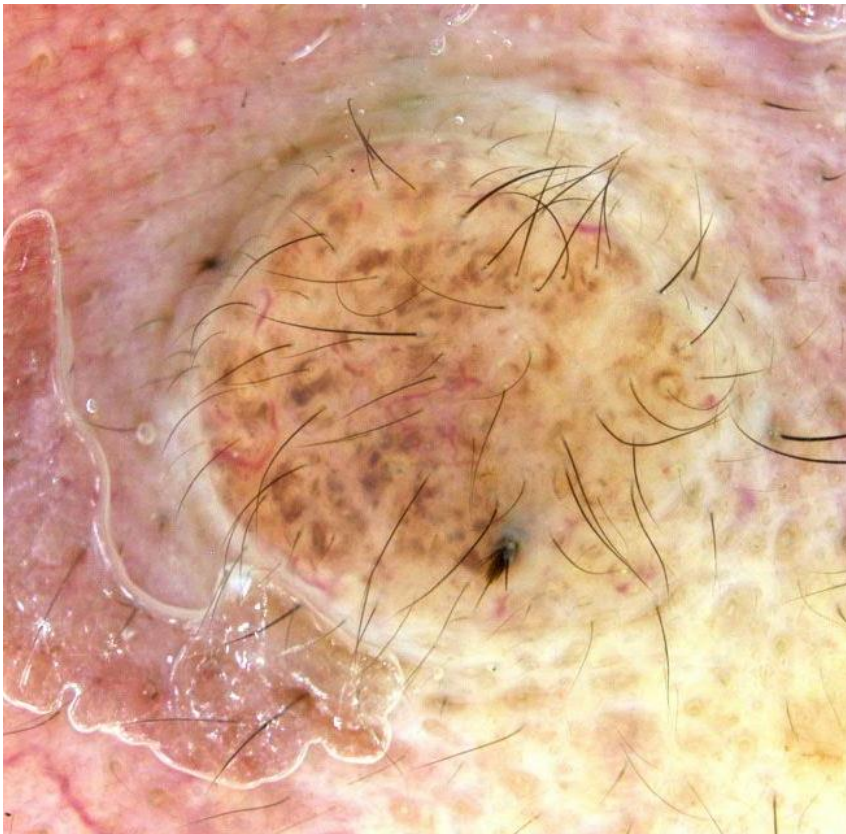


Basal cell carcinoma



Dermatoscopy

Dermal naevus



Regular clods + terminal hairs

Nonpigmented basal cell carcinoma



Branched red lines + scale + ulcer

Which is BCC?

A



B



• A?

• B?

• Both?

B is BCC

Cherry angioma



Pigmented basal cell carcinoma



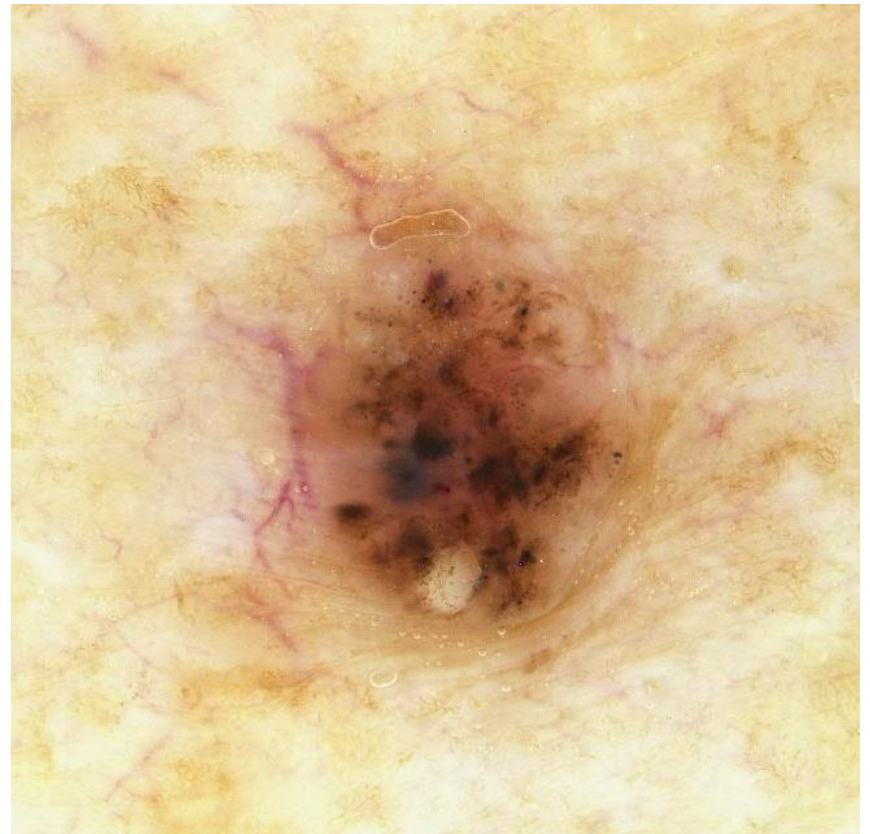
Dermatoscopy

Angioma



Purple clods

Pigmented basal cell carcinoma



Irregular clods + dirty dishwater

Dirty dishwater



Which is SCC in situ?

A



B



• A?

• B?

• Both?

B is SCC in situ

Melanoma

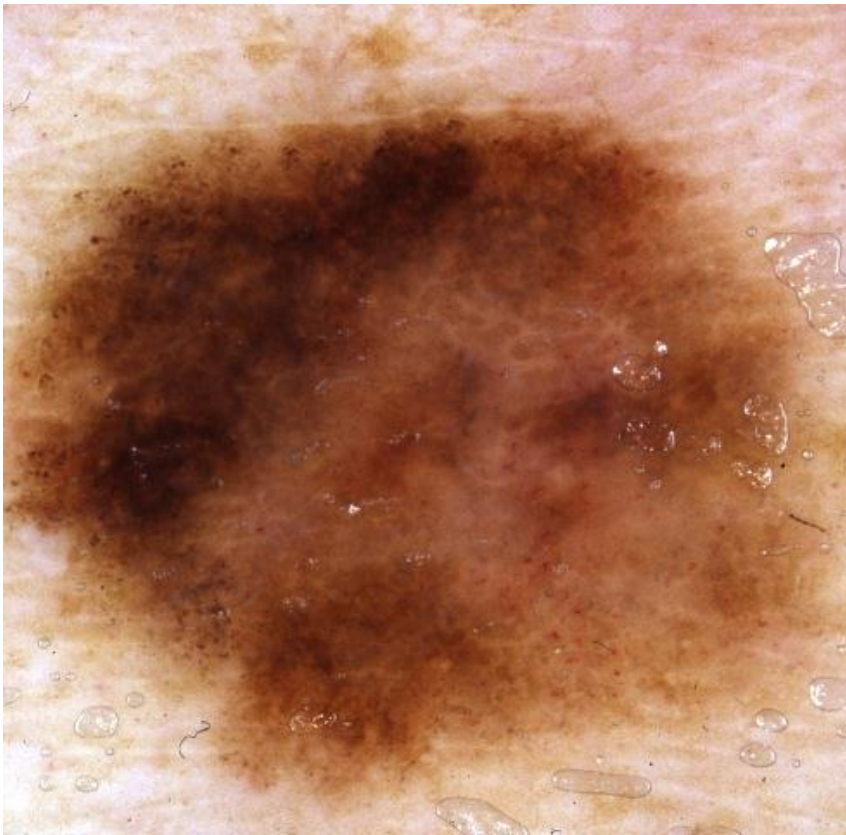


SCC in situ

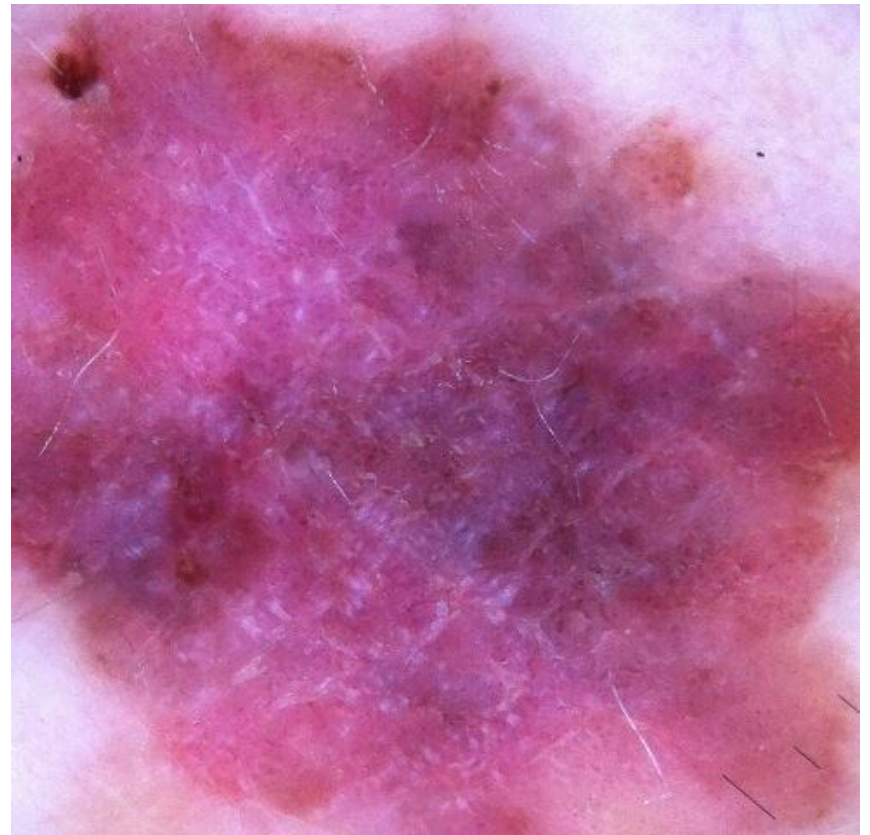


Dermatoscopy

Melanoma



SCC in situ



Dermatoscopy can help tell the difference: both are malignant with disordered structure 165

Nonmelanocytic lesions: vascular

- (Haem)angioma: proliferation of blood vessels
 - Cherry angioma
 - Pyogenic granuloma
 - Other pathological entities
- Malformations: dilations of vessels
 - Naevus araneus (spider naevus)
 - Angiokeratoma
 - Naevus flammeus (port-wine stain)
- Haemorrhage

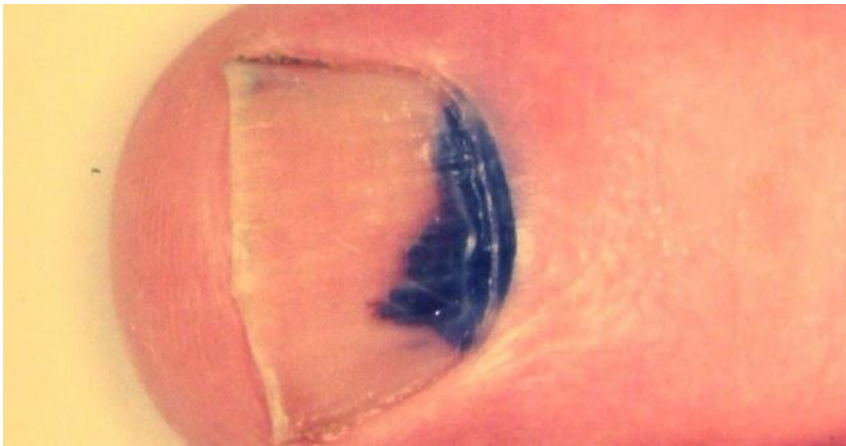
Proliferative haemangiomas



Vascular malformations



Haemorrhage



Which is haemangioma?

A



B



• A?

• B?

• Both?

A is haemangioma

Cherry angioma



Basal cell carcinoma



Dermatoscopy

Cherry angioma



Red clods + white lines

Basal cell carcinoma



White structureless + red lines

Which is haemangioma?

A



B



• A?

• B?

• Both?

A is haemangioma

Cherry angioma



Dermal papillomatous naevus



Dermatoscopy

Cherry angioma



Red clods

Dermal papillomatous naevus



Brownish-blue clods

Nonmelanocytic lesions: other

- Dermatofibroma
 - Pinch sign
 - Tissue reaction not neoplasm
 - Fibrosis of dermis
 - Hyperpigmentation of basal keratinocytes overlying the fibrosis
- Mastocytosis
- Exogenous pigment
 - Silver nitrate
 - Tattoos
 - Tinea nigra

Dermatofibroma



Pinch sign

Other lesions

- Mastocytosis

- Tattoos



Which is dermatofibroma?

A



B



• A?

• B?

• Both?

A is dermatofibroma

Dermatofibroma

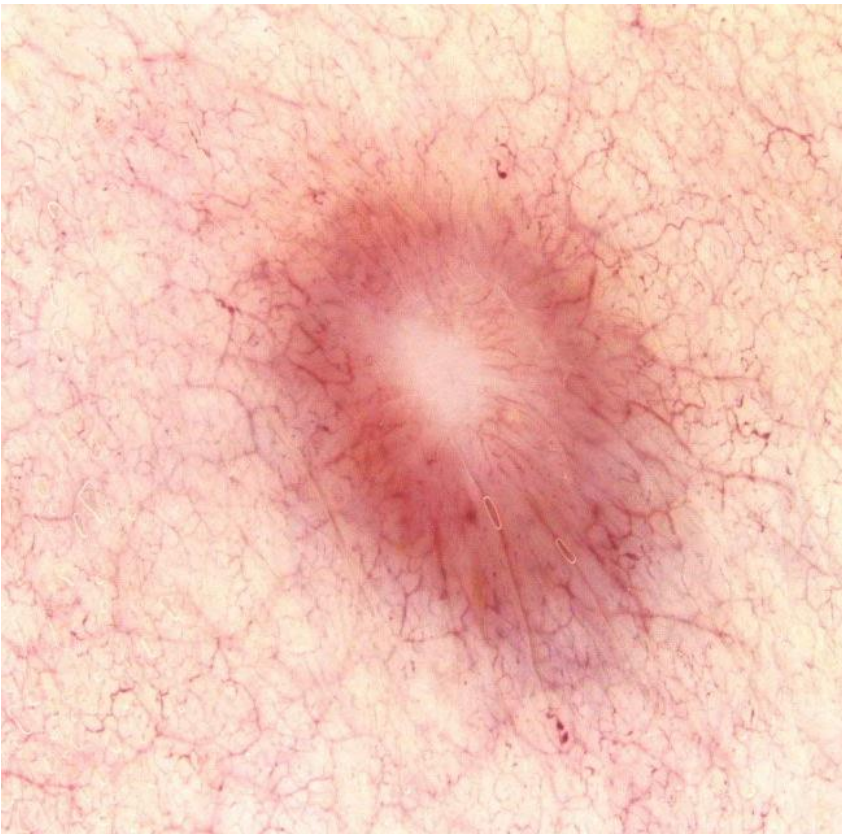


Pink naevus



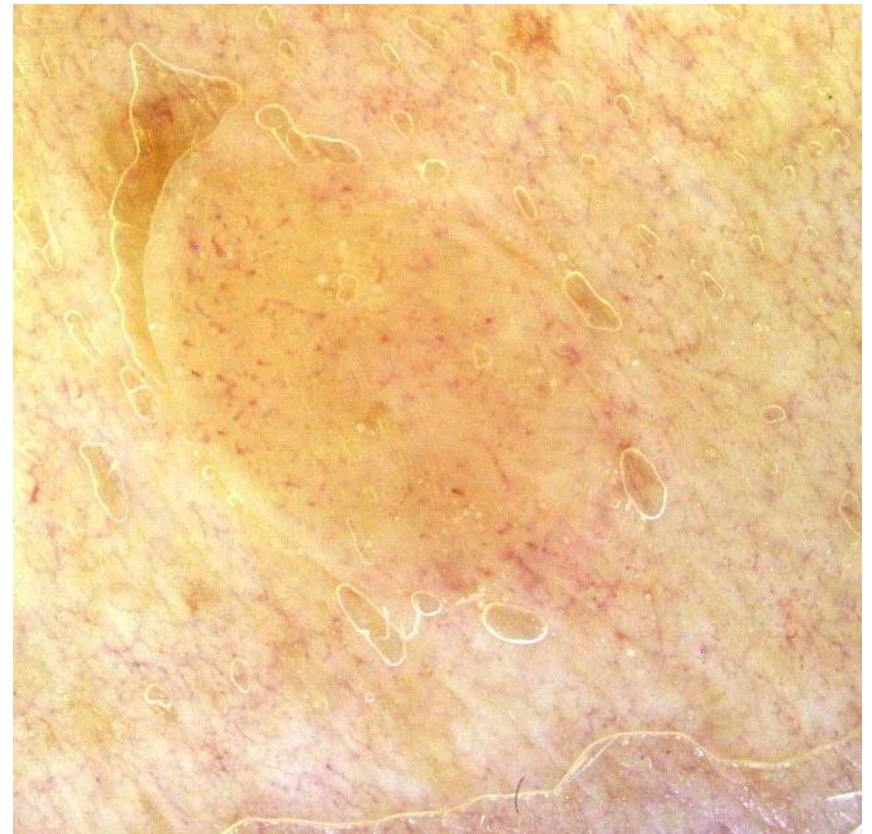
Dermatoscopy

Dermatofibroma



- Central white area

Pink naevus



- Comma blood vessels

Dermoscopic patterns

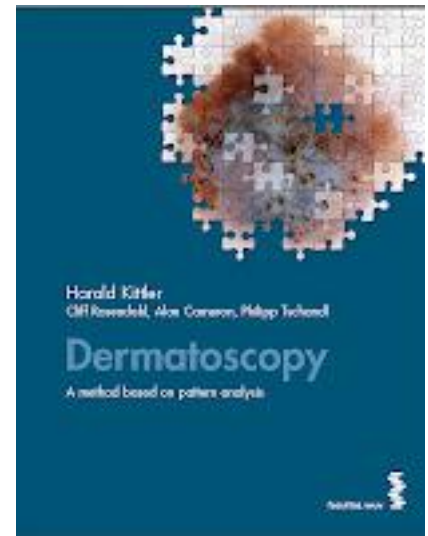
Diagnostic methods for melanoma

- 2-step method
- Pattern analysis
- Stolz ABCD rule
- Argenziano 7-point checklist
- Menzies' method
- Three-point checklist
- CASH algorithm ...
- According to Kittler, these systems are:
 - Metaphorical
 - Mysterious
 - Undefined
 - Confusing
 - Contradictory
 - Arbitrary
 - Ambiguous
 - Jargon
 - Trivialised

Simplify!

- Observe the lesion's features
- Decide whether or not to excise / biopsy

Modified pattern analysis – Harald Kittler
Dermatoscopy 1st edn. 2011.



Basic elements

- **Lines**



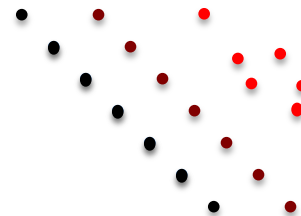
- **Circles**



- **Clods**



- **Dots**



Basic structures: lines

- Reticular



- Branched



- Parallel



- Radial



- Curved



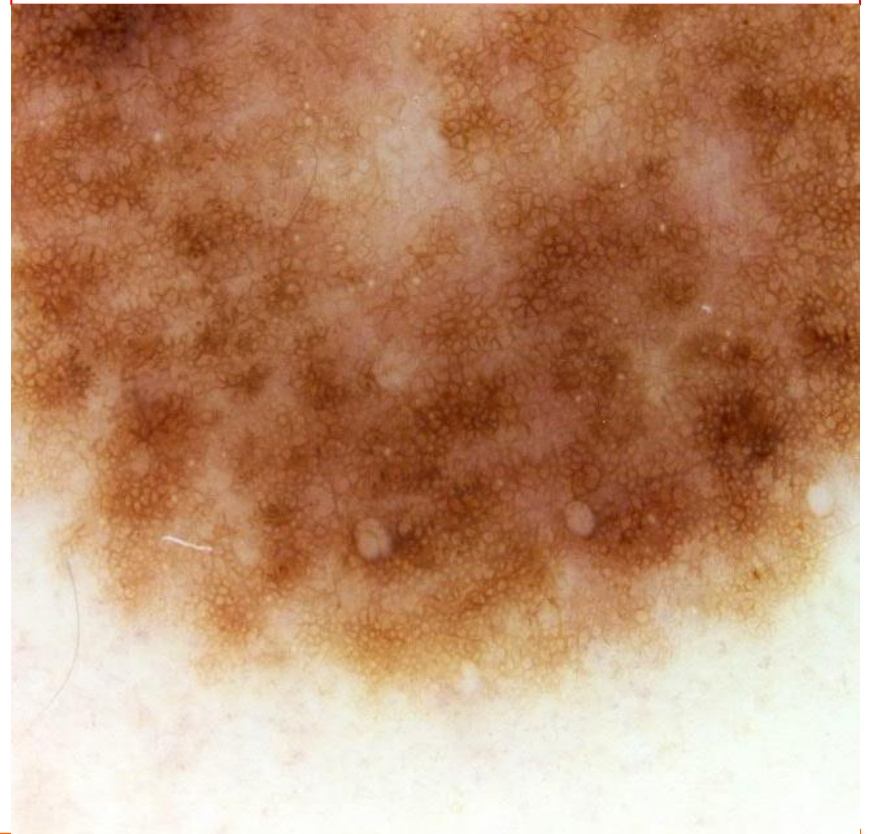
- Network: intersecting lines
- Irregular branches, thin and thick lines
- Non-intersecting lines, often on acral skin
- Lines converge to centre; focal or circumferential
- Parallel or random, short or long, thin or thick

Which is reticular?

A



B



• A?

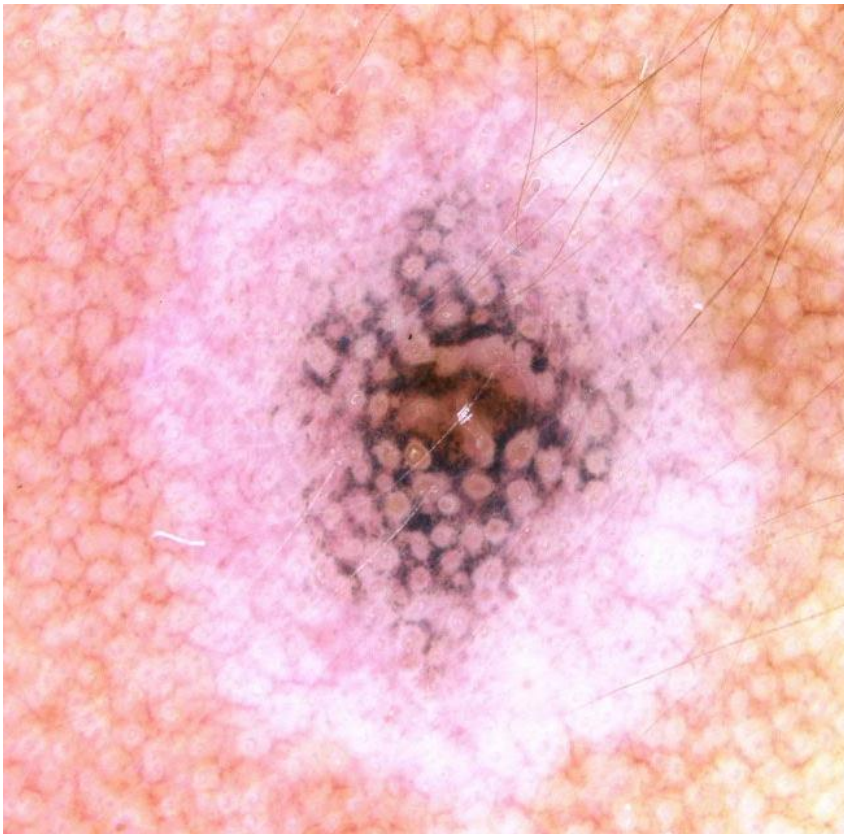
• B?

• Both?

Both are reticular

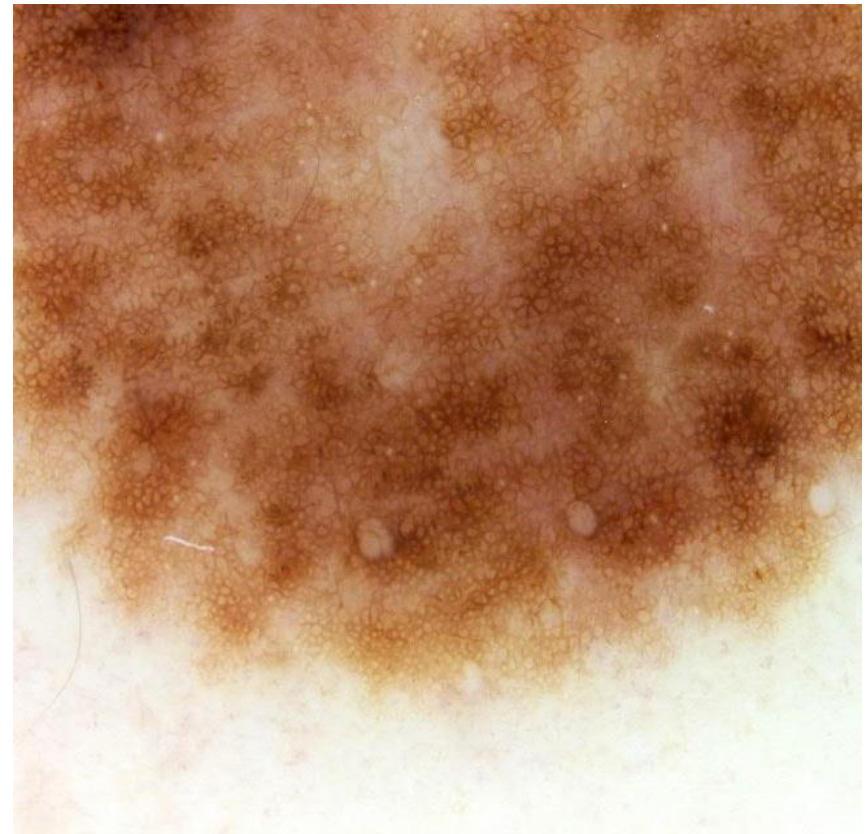
A##

Halo naevus



Facial 'pseudonetwork'

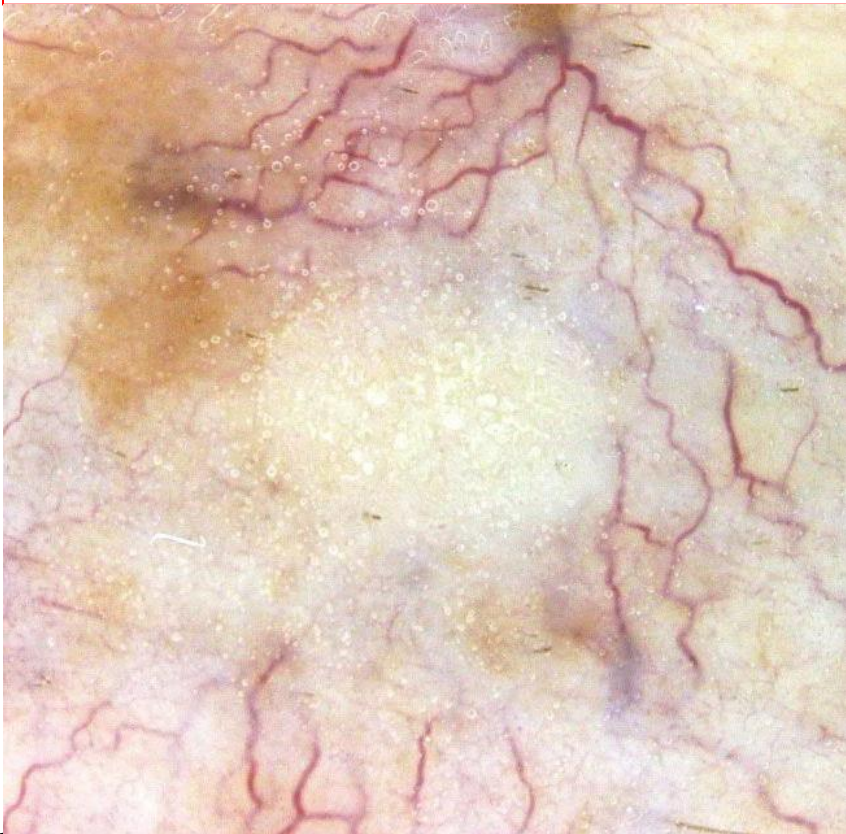
Acquired melanocytic naevus



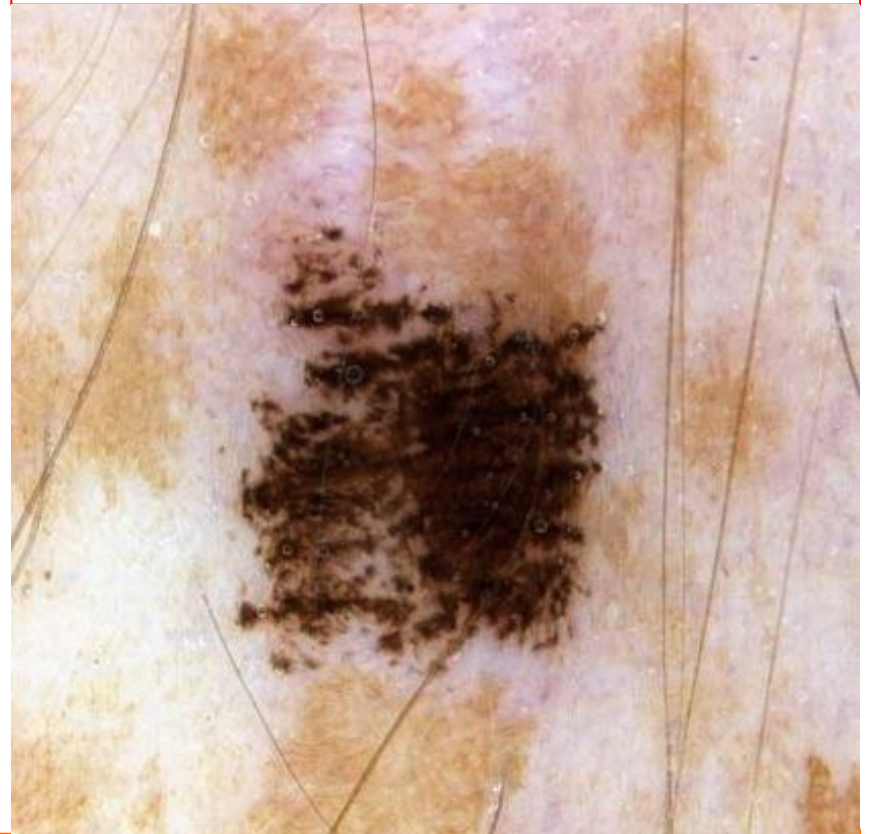
Typical pigment network

Which has branched lines?

A



B



• A?

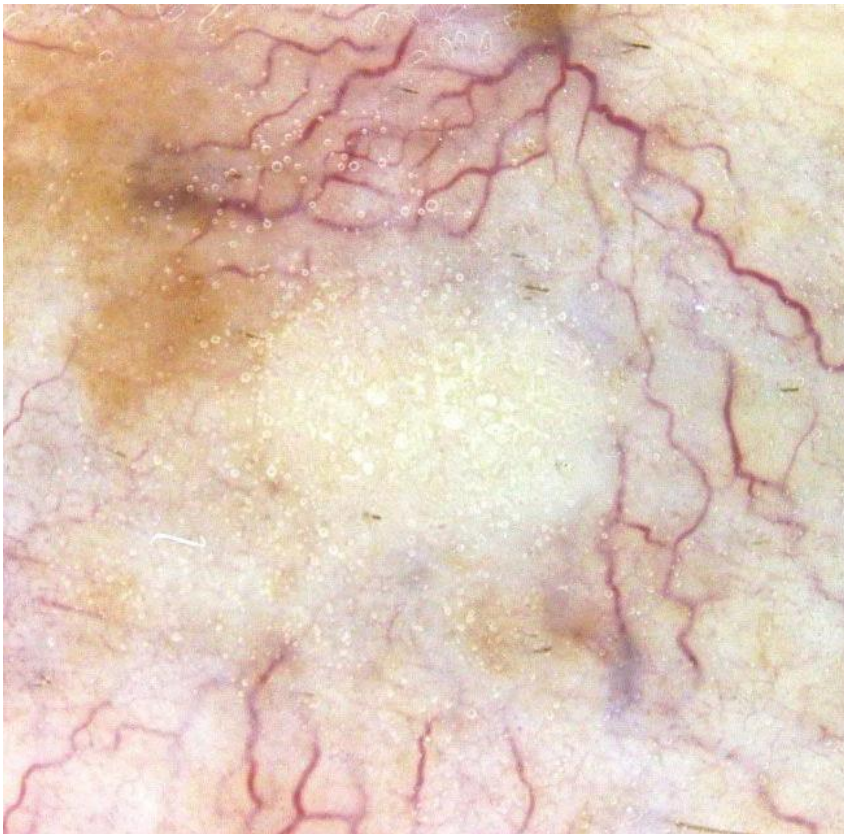
• B?

• Both?

A has branched lines

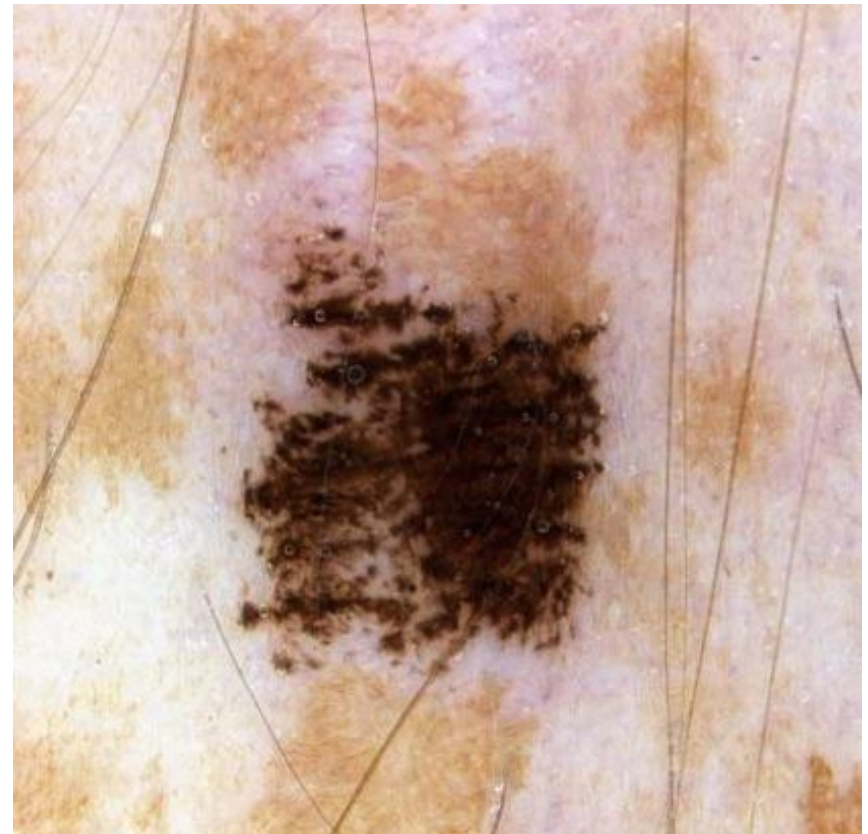


Vasculature of aged skin



Red branched lines – bld vv

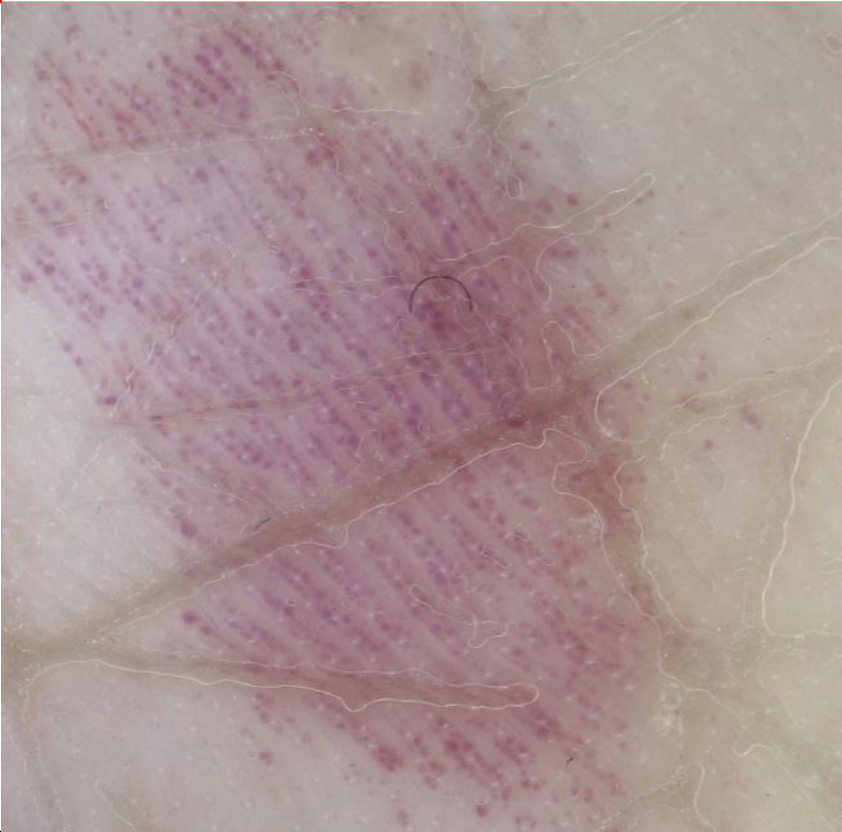
Ink spot lentigo



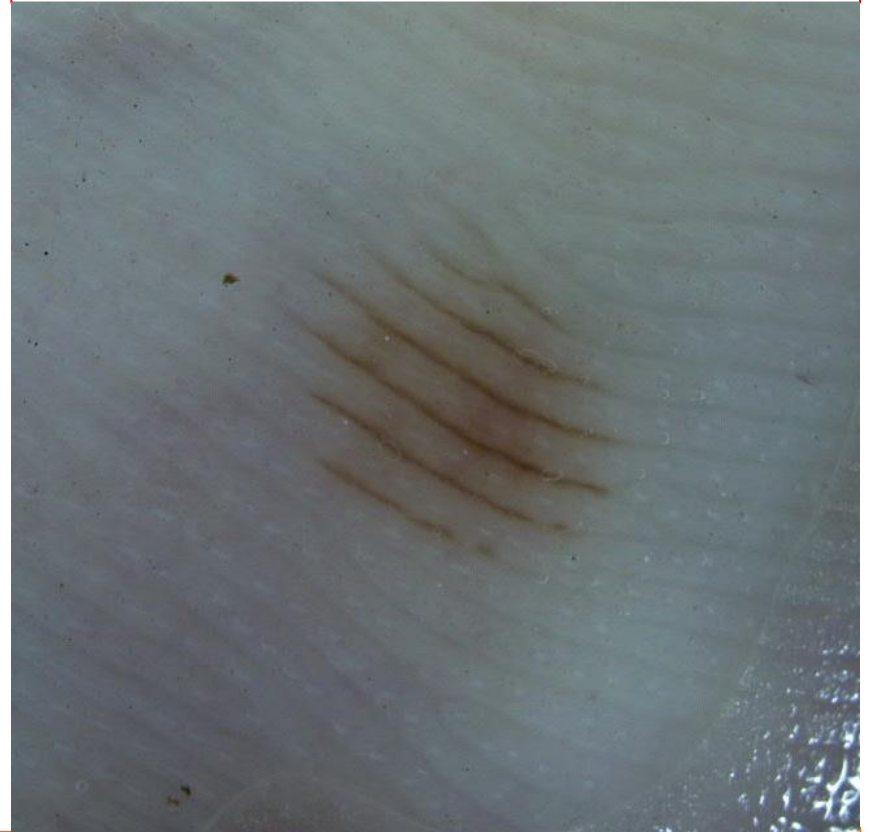
Dark brown network of lines

Which lines are parallel?

A



B



• A?

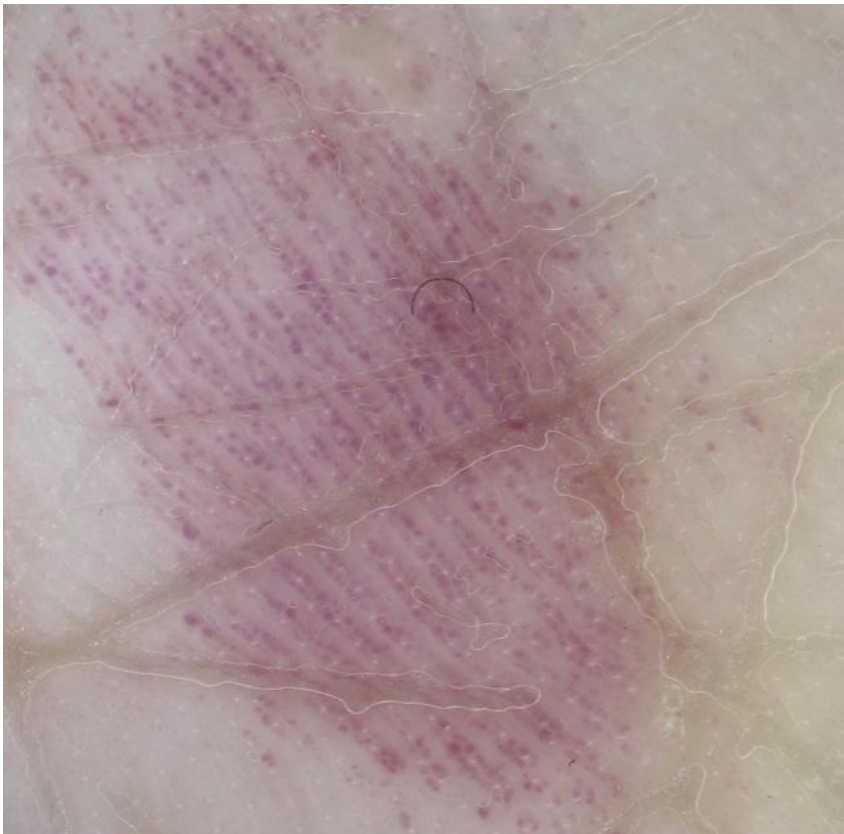
• B?

• Both?

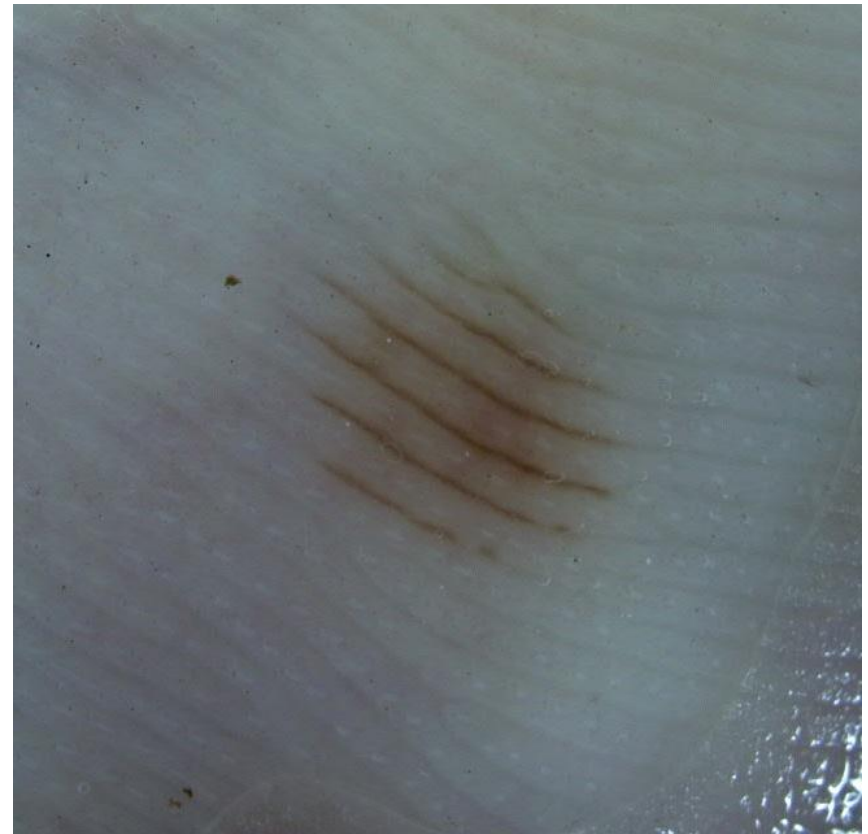
Both have parallel lines



Vascular naevus



Melanocytic naevus



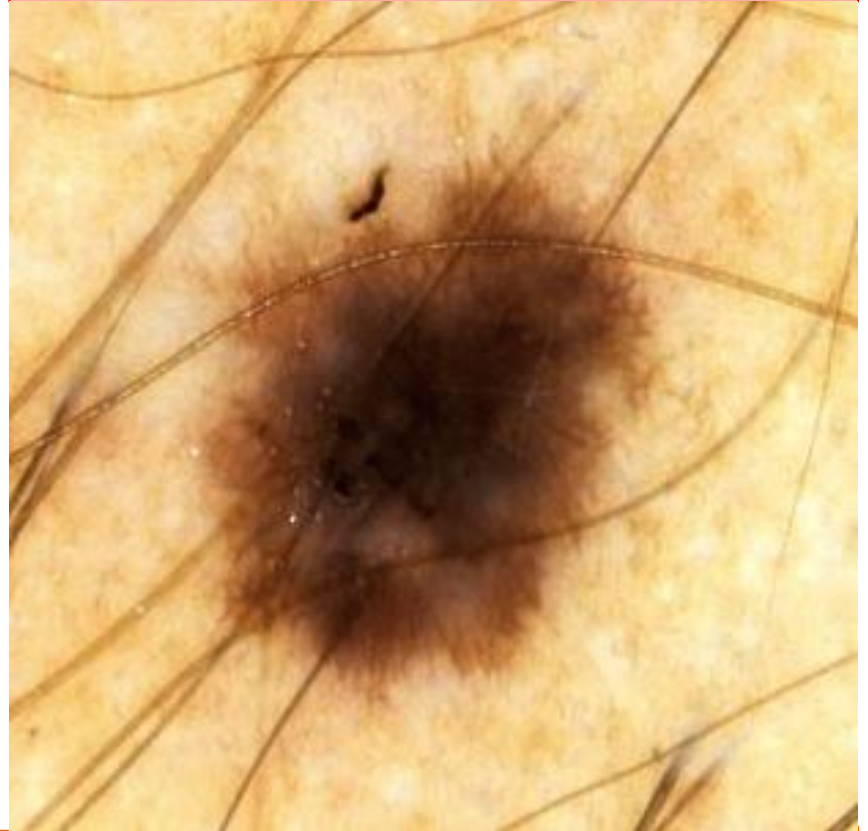
Acral (palmar / plantar) lesions often have parallel lines

Which has radial lines?

A



B



• A?

• B?

• Both?

Both have focal radial lines

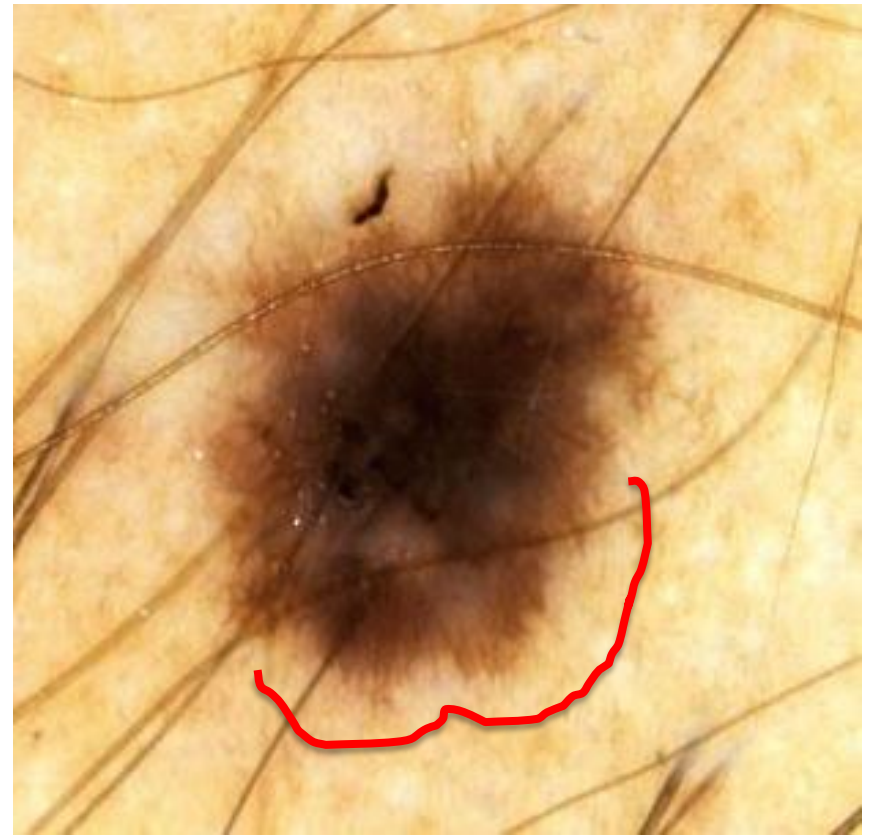


Melanoma



Asymmetry of structure: CHAOS

Benign lentiginous naevus



Symmetry of structure
(more or less)

Basic structures: rounded

- Pseudopods



- Line + clod at end

- Circles



- Joined up line

- Clods



- Any colour, shape

- Dots



- Tiny spot(s)

- Structureless



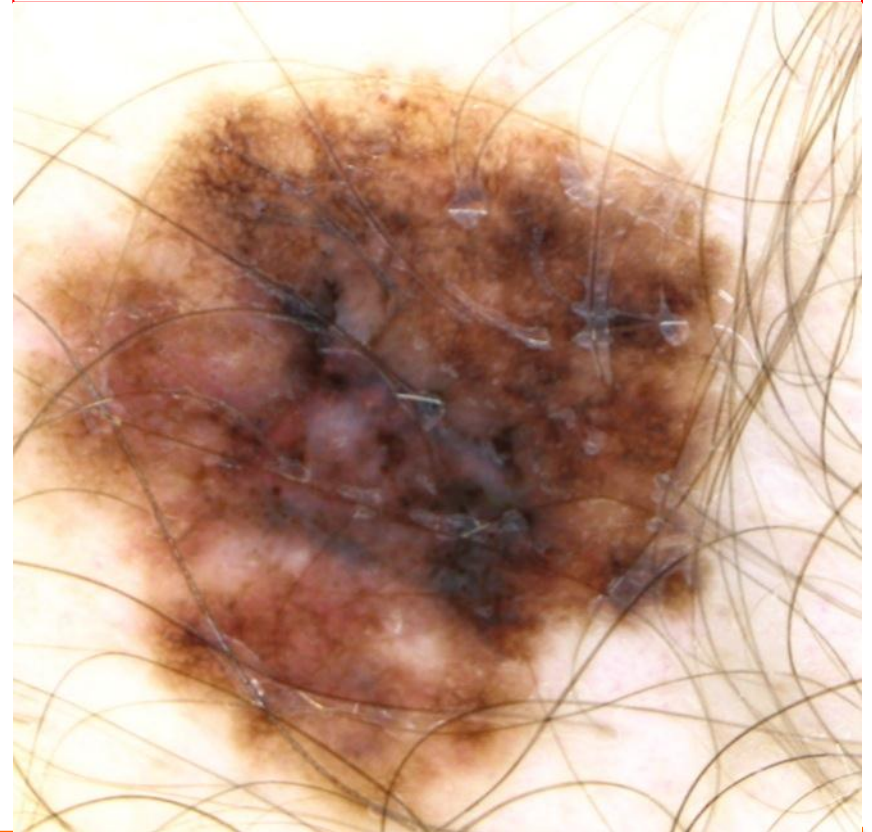
- Absence of other element

Which has pseudopods?

A



B



• A?

• B?

• Both?

A has pseudopods

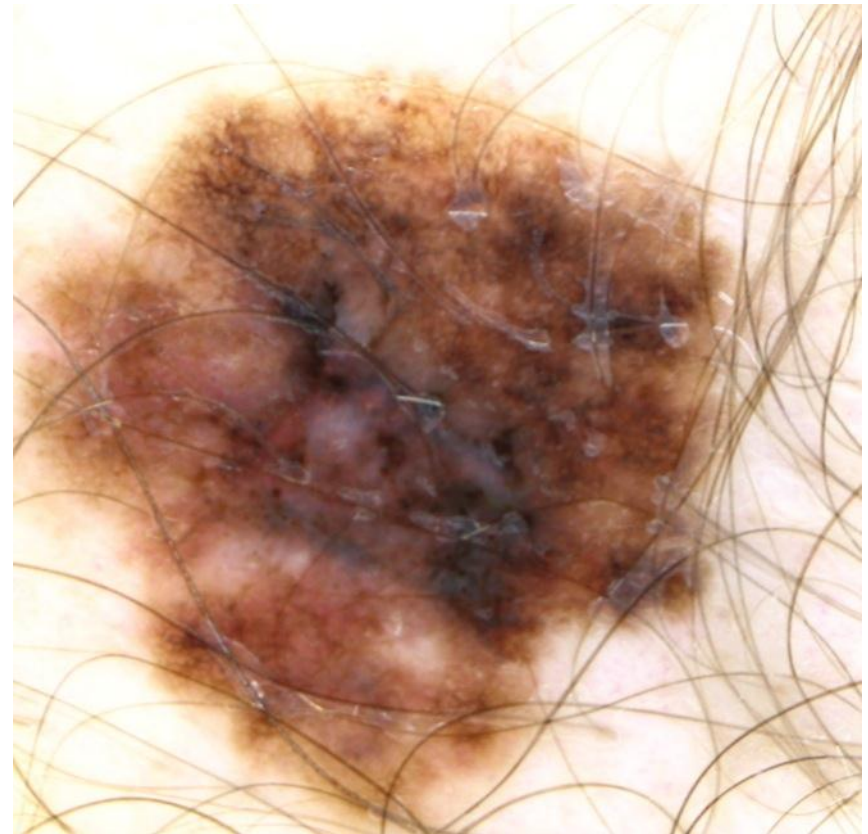


Melanoma



Peripheral line + clod on end

Melanoma



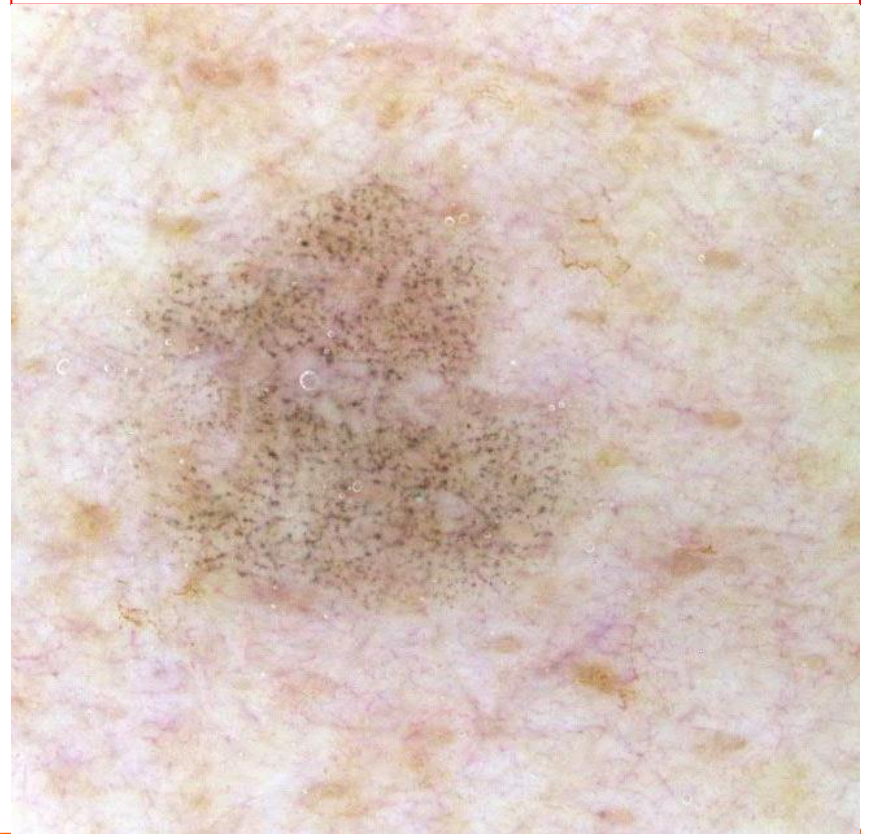
Peripheral fine network

Which has circles?

A



B



• A?

• B?

• Both?

A has circles

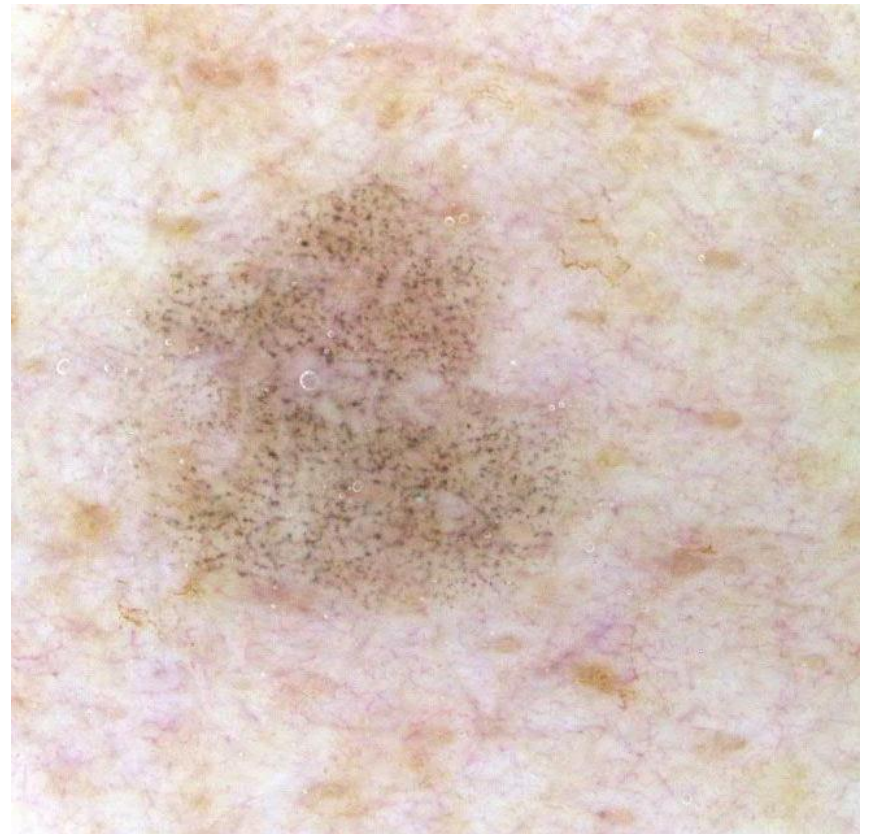


Seborrhoeic keratosis



Joined-up brown lines

Lichen-planus like keratosis



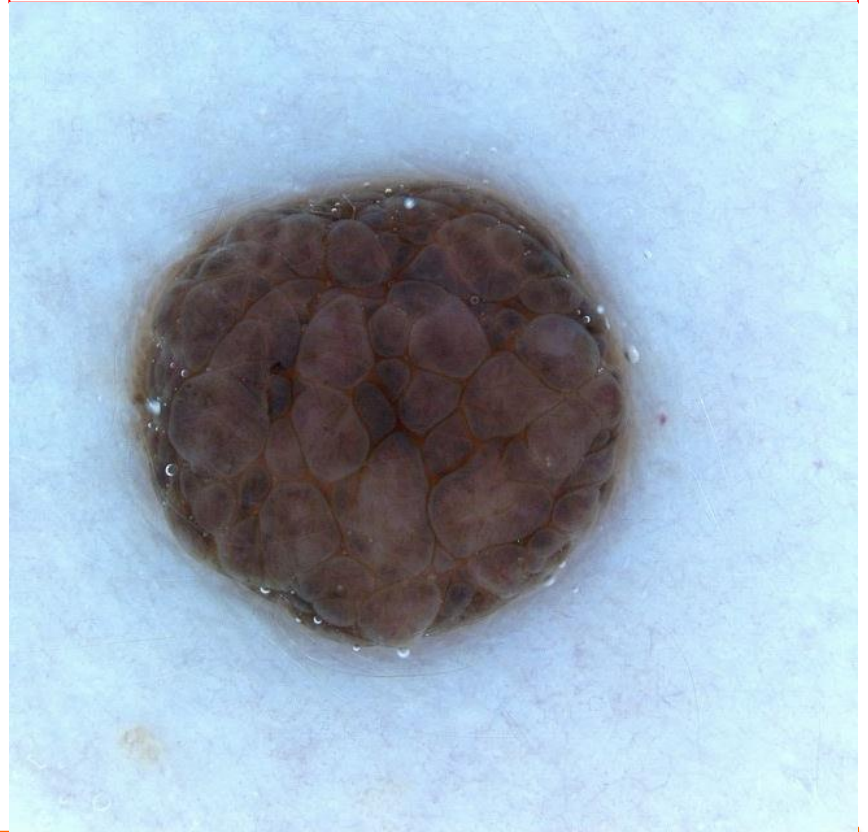
Grey dots

Which has clods?

A



B



• A?

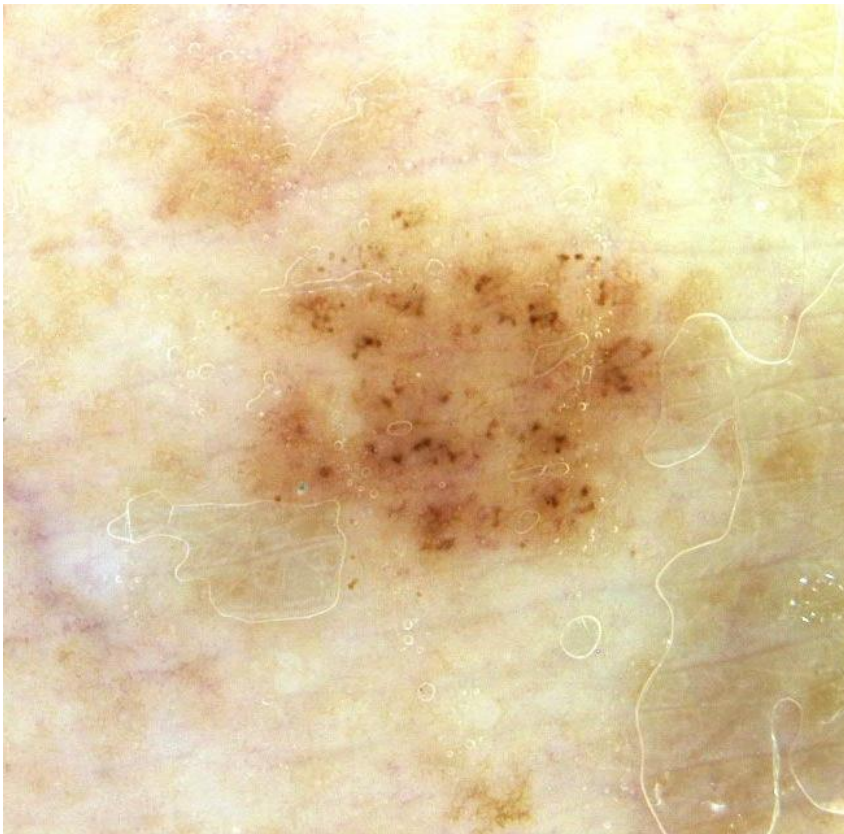
• B?

• Both?

B has clods

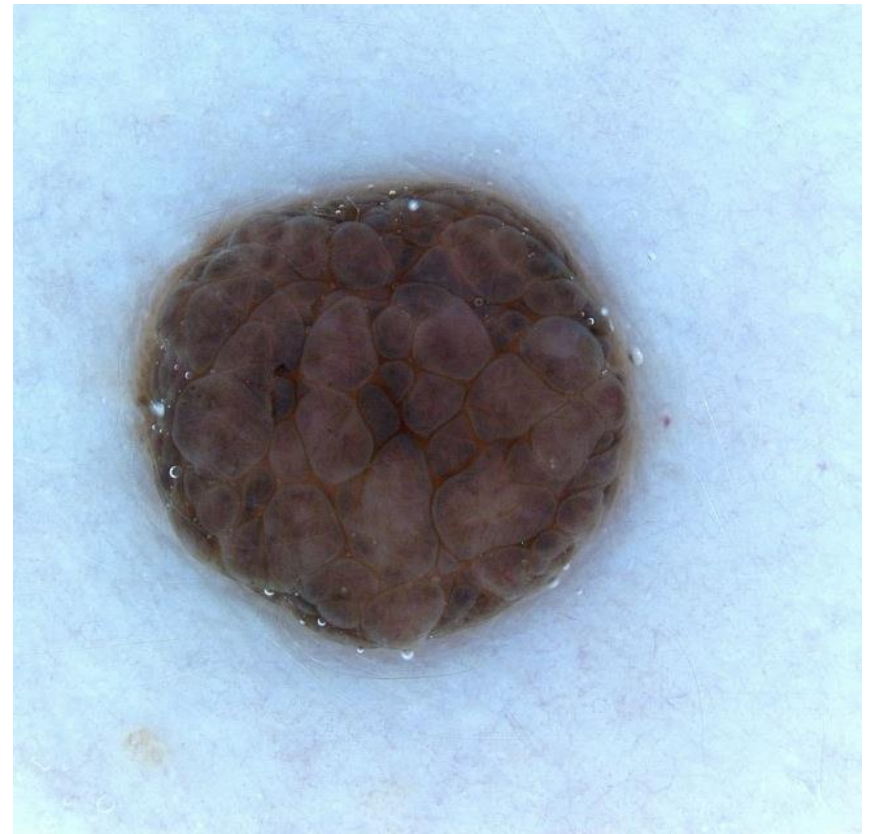


Acquired melanocytic naevus



Dots – too small for clods

Papillomatous dermal naevus



Structures with any shape

Which is structureless?

A



B



• A?

• B?

• Both?

Both have structureless areas

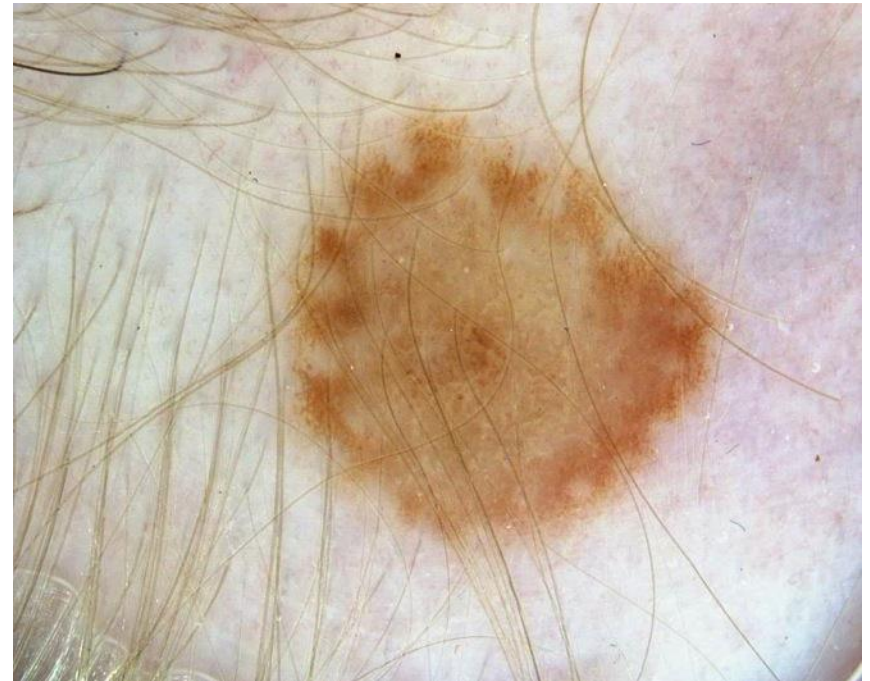


Blue naevus



Steel-blue homogeneous

Eclipse naevus



Centre is structureless

Colours

- Black
- Blue
- Red
- Light brown
- Dark brown
- Grey
- Yellow
- Orange
- White
- Purple
- Skin coloured



Melanin

- Black: stratum corneum
- Brown: epidermis
- Gray: papillary dermis
- Blue: reticular dermis
- Dense: darker
- Non-dense: lighter
- Thick epidermis: bluer



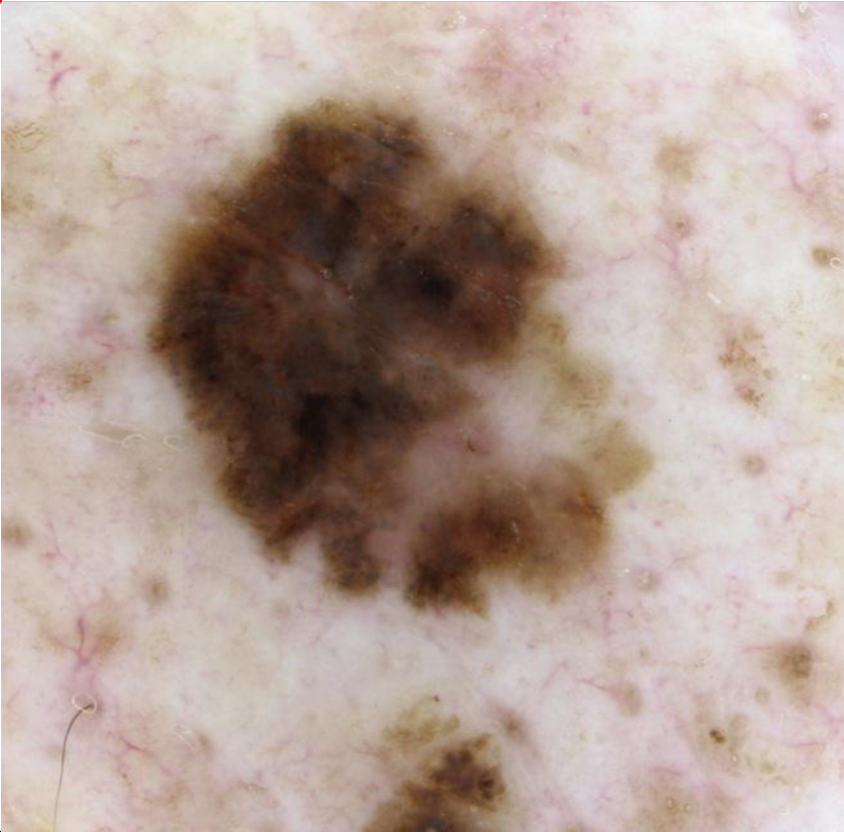
Melanoma – multiple colours

- Melanin found in epidermis and dermis
- Black, dark brown, light brown, blue, grey
- Red is vascular
- White is fibrosis or surface keratin



Which has the most colours?

A



B



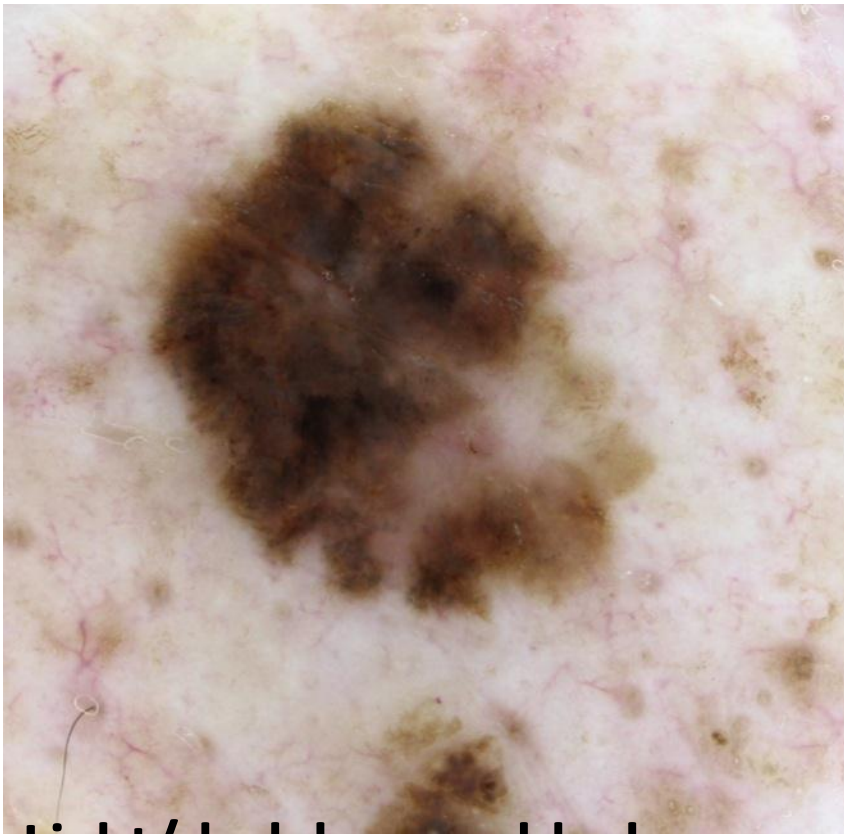
• A?

• B?

• Both?

Which has the most colours?

Melanoma



**Light/dark brown, black,
white, grey**

Seborrhoeic keratosis



**Light/dark brown, black,
white, grey**

Patterns

- Reticular pattern – lines
- Dots – scattered, central cluster, peripheral
- Clods – sparse or aggregated
- Circles – these are most often on face
- Pseudopods – radial, focal or entire periphery
- Structureless – lack of pattern
- Combination of patterns

Patterns



Lines



Dots - clustered



Clods - aggregated



Structureless

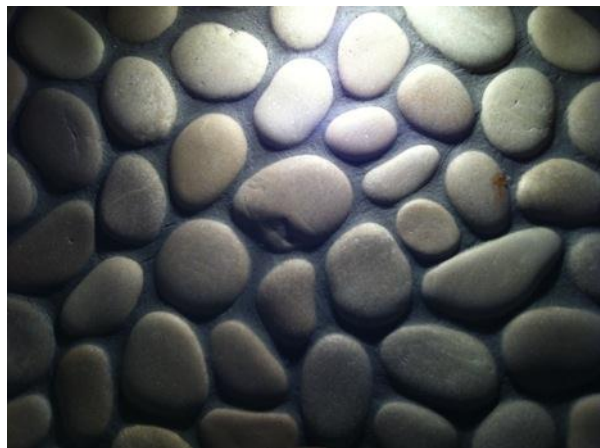
More patterns



Structureless: many colours



Circles + central clod



Clods - aggregated



Complex: lines, dots, circles, clods

Single pattern

- Results in symmetry of structure
- Benign



Reticular pattern

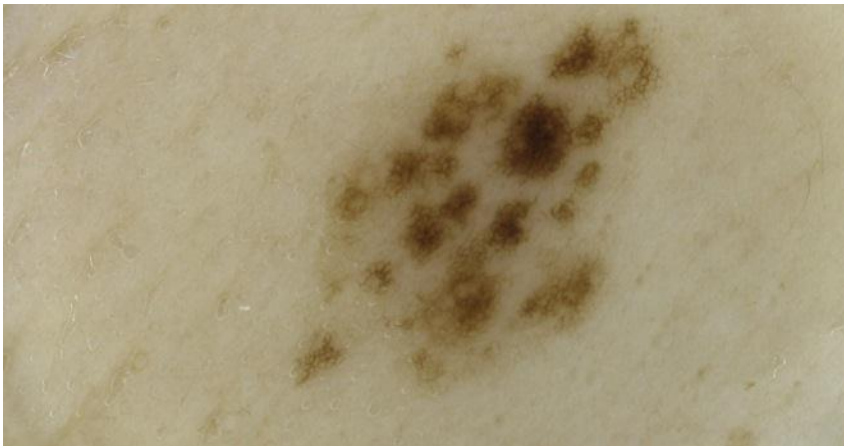


- Pigment is due to deposition of pigment in keratinocytes



- Superficial congenital naevi
- Acquired 'Clark' naevi
- Lentigo simplex
- Solar lentigines
- Seborrhoeic keratoses
- Melanotic macules
- Ink spot lentigo
- Dermatofibroma
- Urticaria pigmentosa
- Nipple
- Normal skin

Reticular pattern

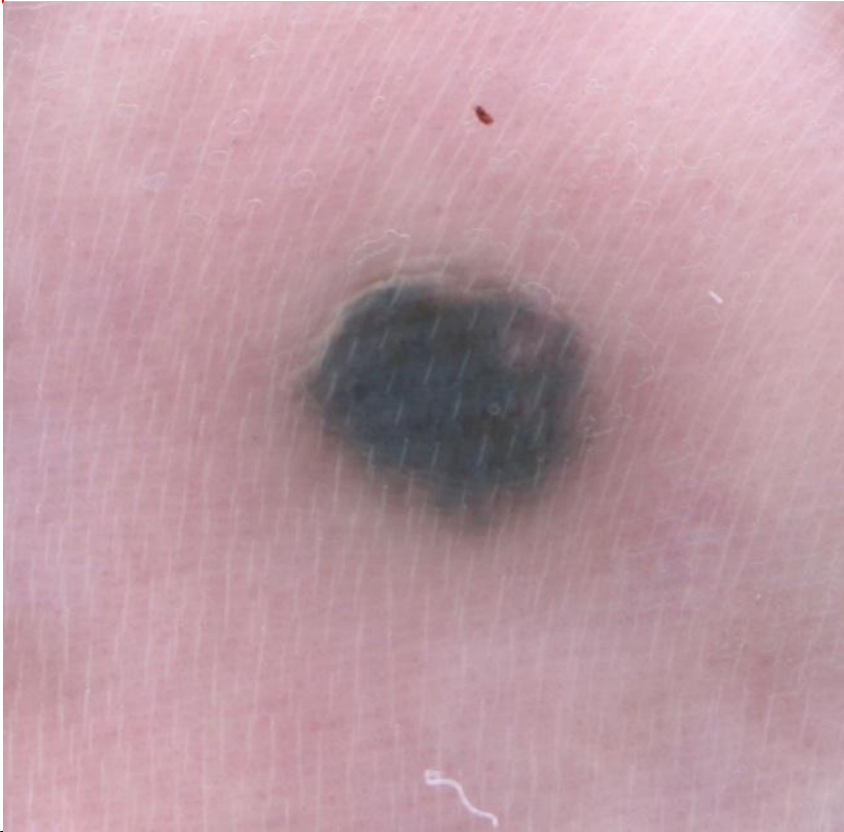


- 1 colour

- >1 colour

Which has reticular pattern?

A



B



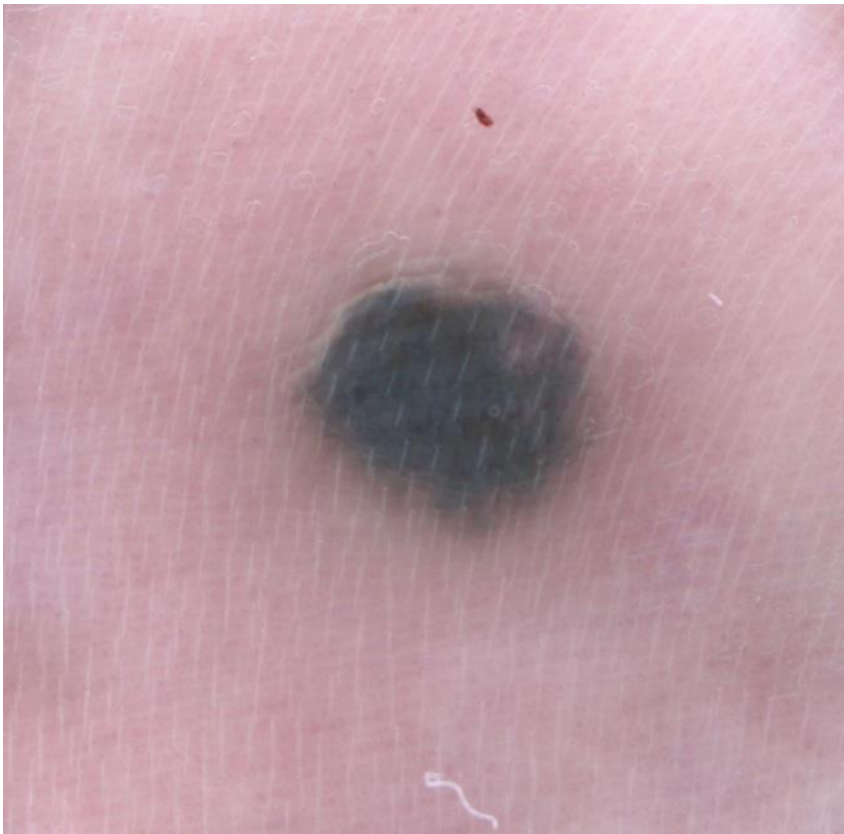
• A?

• B?

• Both?

B has reticular pattern

Childhood onset naevus



Globular naevus

Congenital naevus

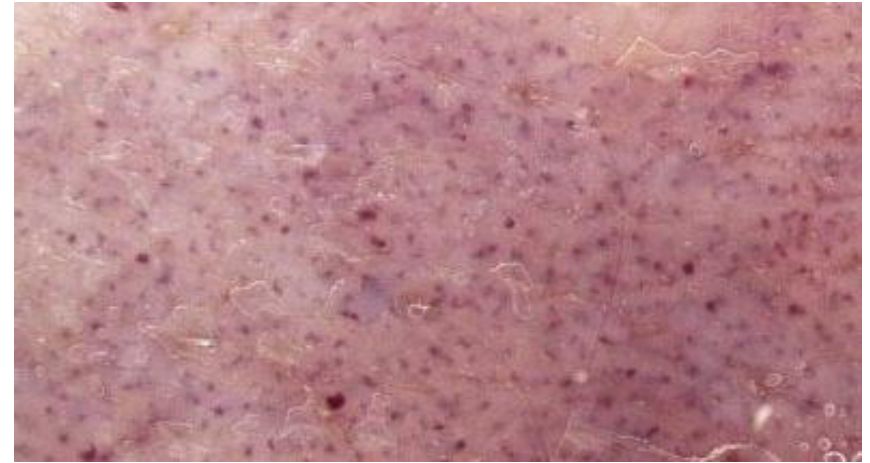


Reticular naevus

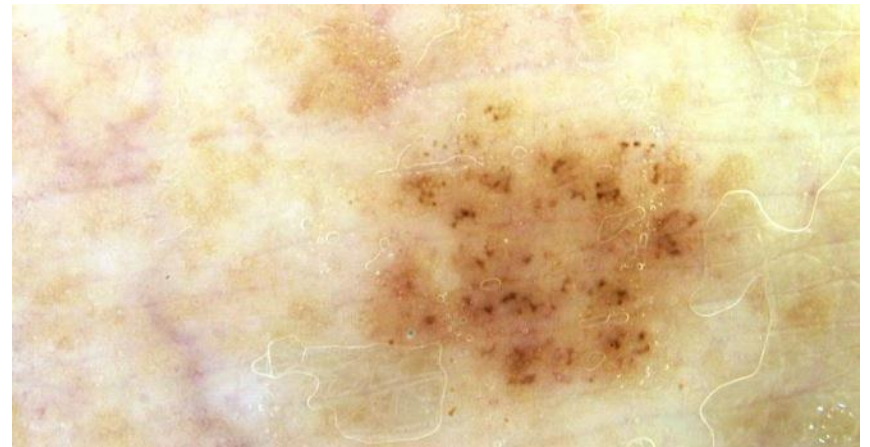
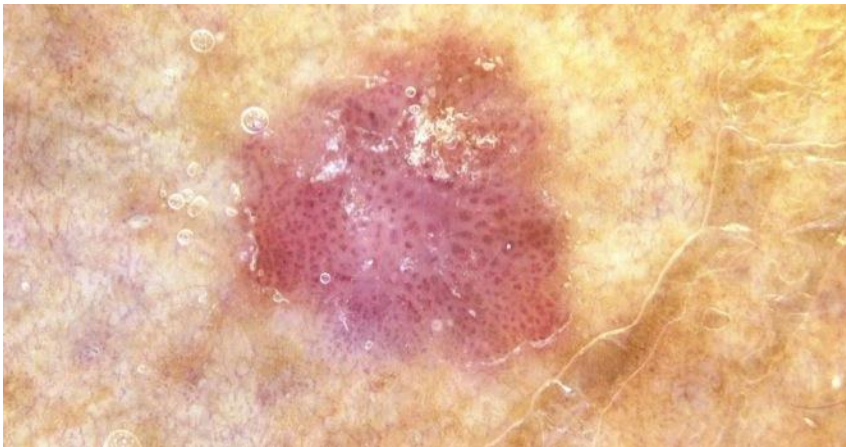
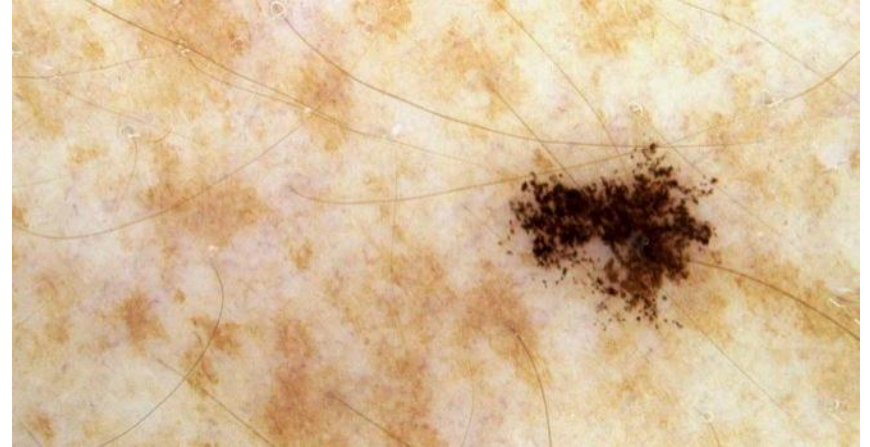
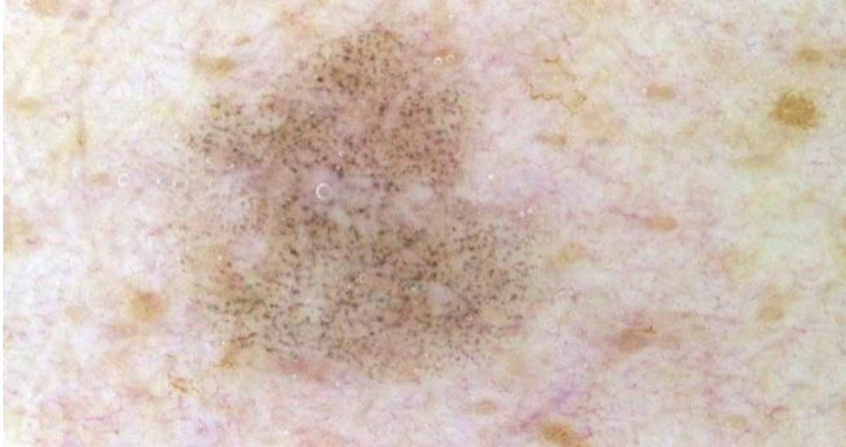
Dotted pattern



- Colour denotes site of deposition of pigment
 - Red: vertical blood vsls
 - Black: upper epidermis
 - Brown: junction
 - Gray: papillary dermis
 - Blue: deep dermis

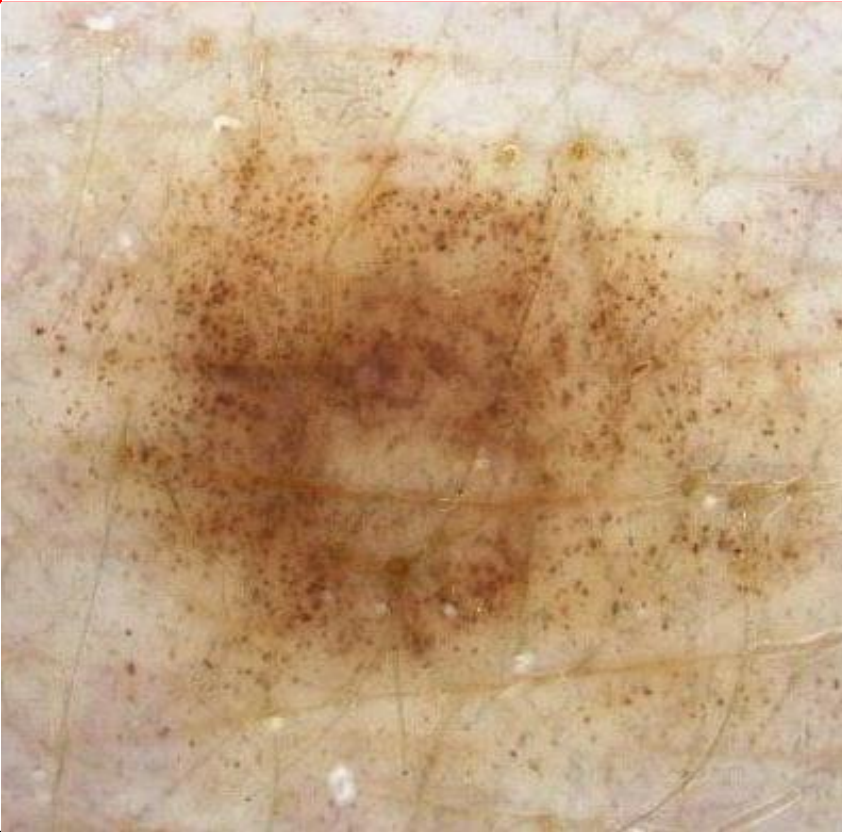


Dotted pattern



Which has dotted pattern?

A



B



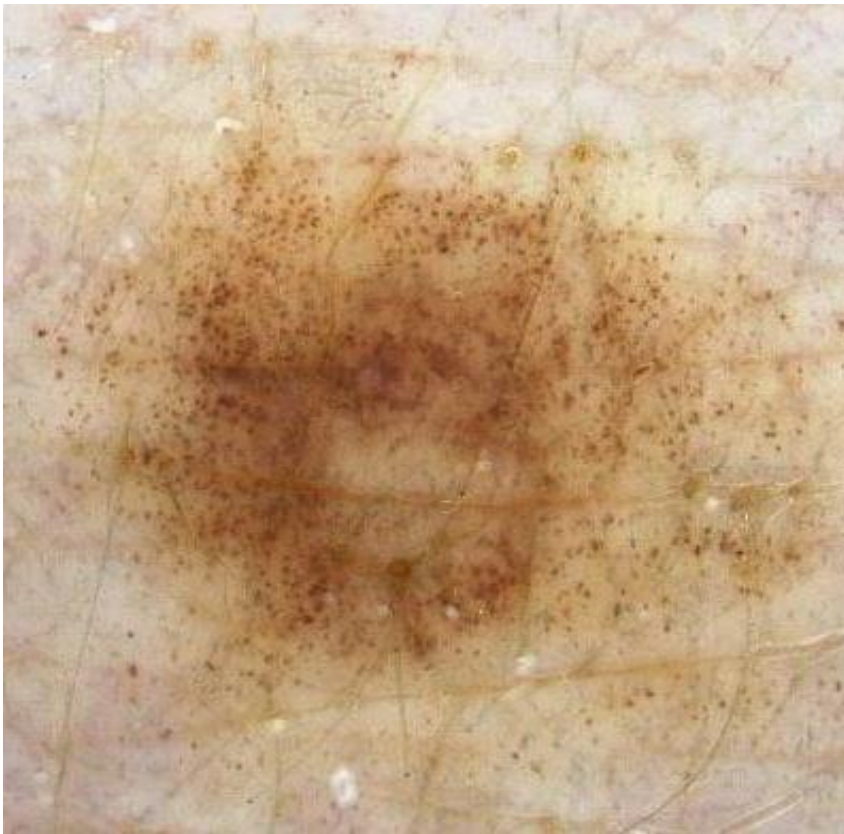
• A?

• B?

• Both?

A has dotted pattern

Benign naevus



Dots (+ a few clods)

Benign naevus

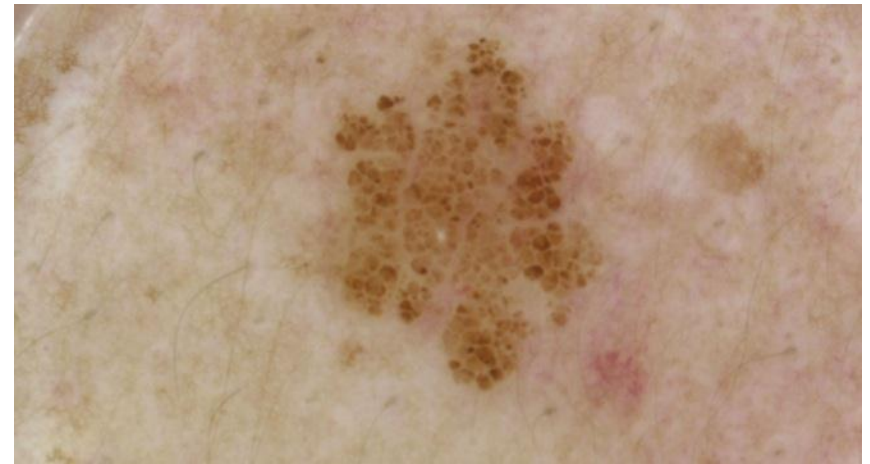


Reticular pattern

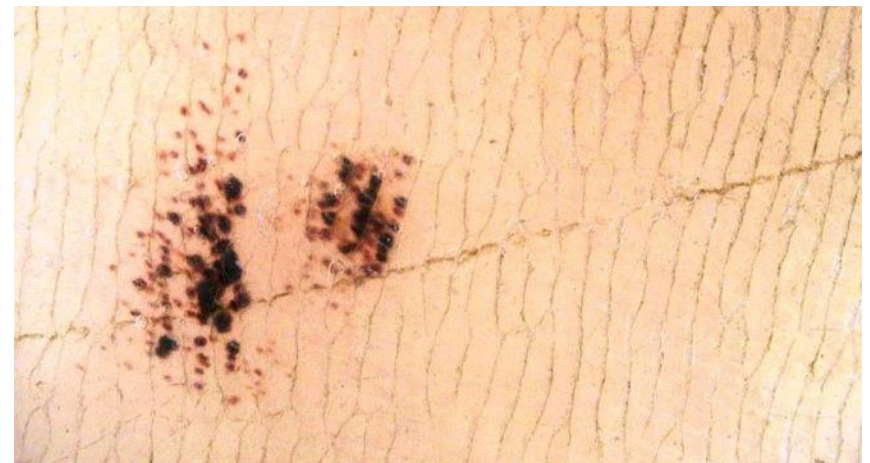
Clod pattern



- Consider colour
 - Red / black: blood
 - White / yellow: keratin
 - Black / brown / grey / blue: melanin = globules



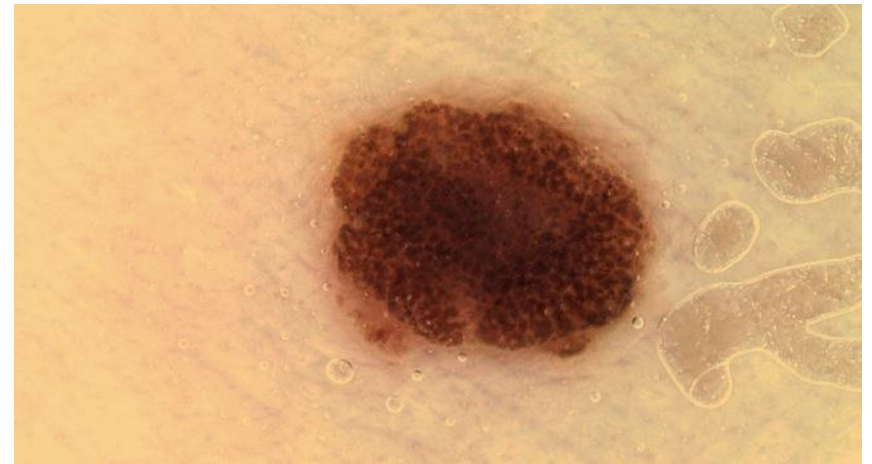
Naevus



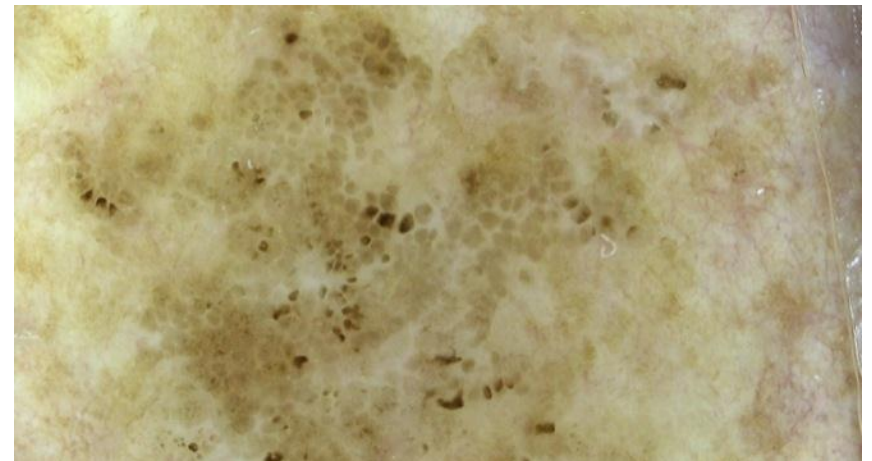
Subcorneal haemorrhage

Clod pattern

- Consider symmetry
 - Distribution
 - Shape
 - Colour



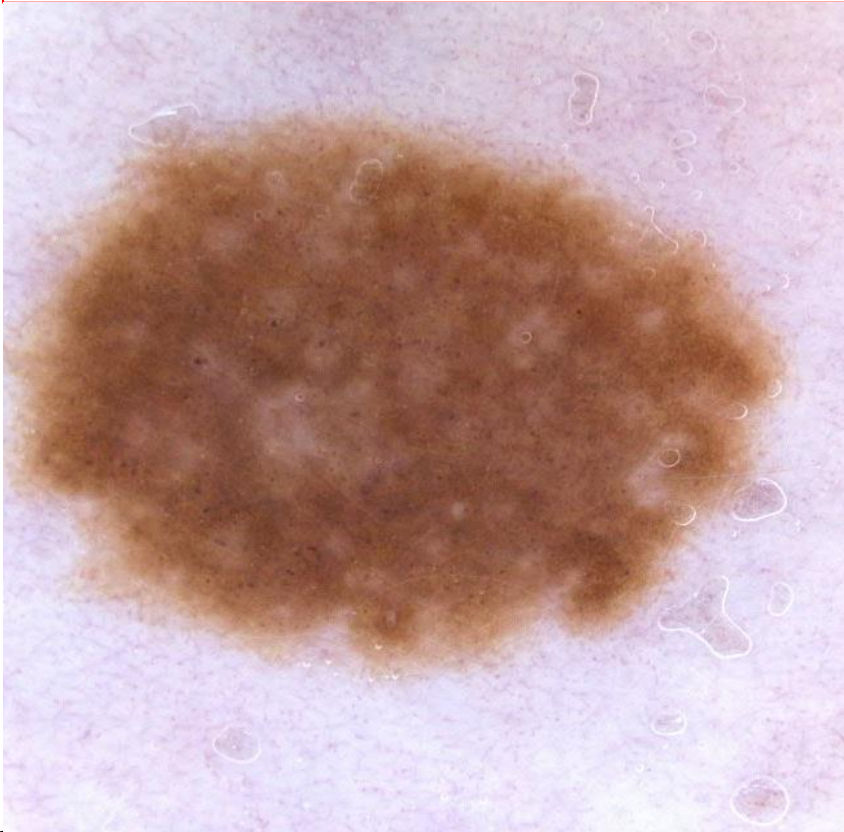
Naevus



Seborrheic keratosis

Which has clod pattern?

A



B



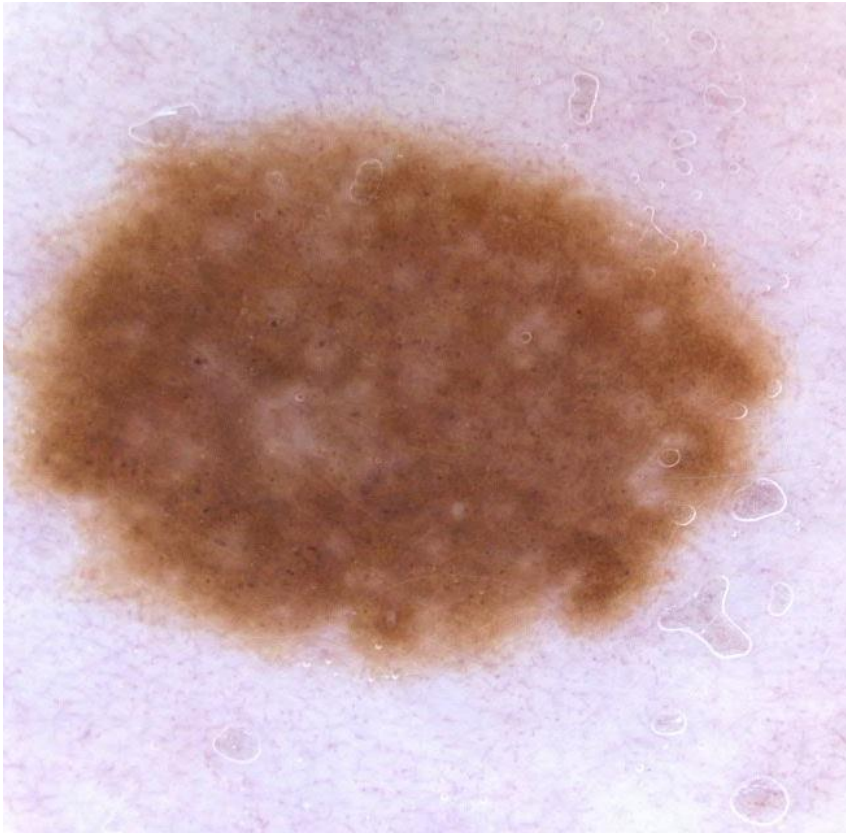
• A?

• B?

• Both?

B has clod pattern

Benign naevus



Structureless

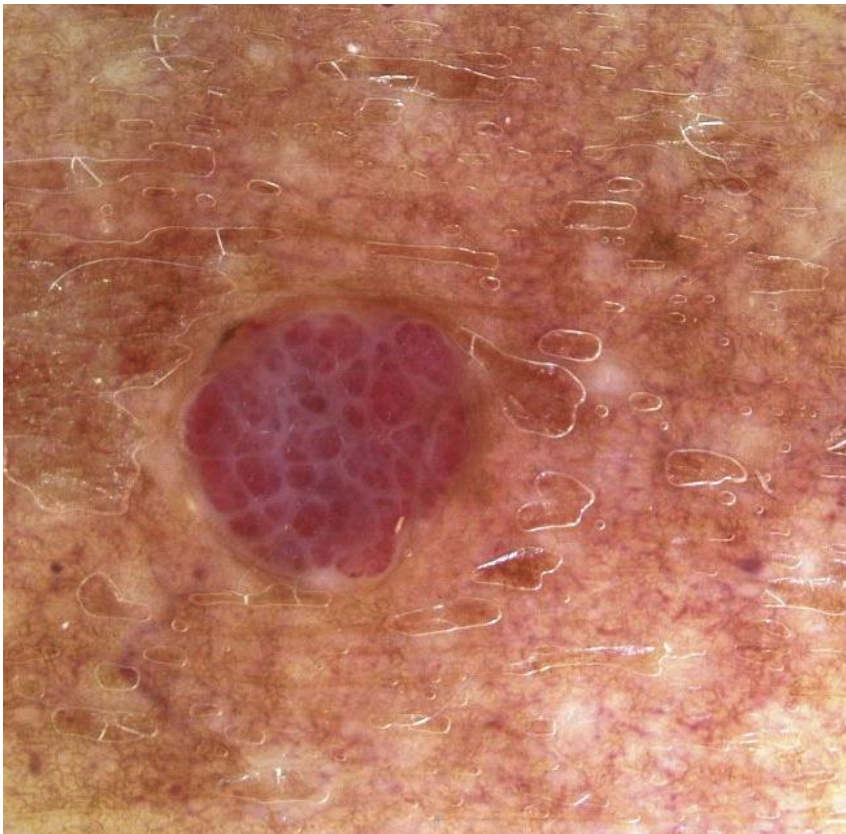
Benign naevus



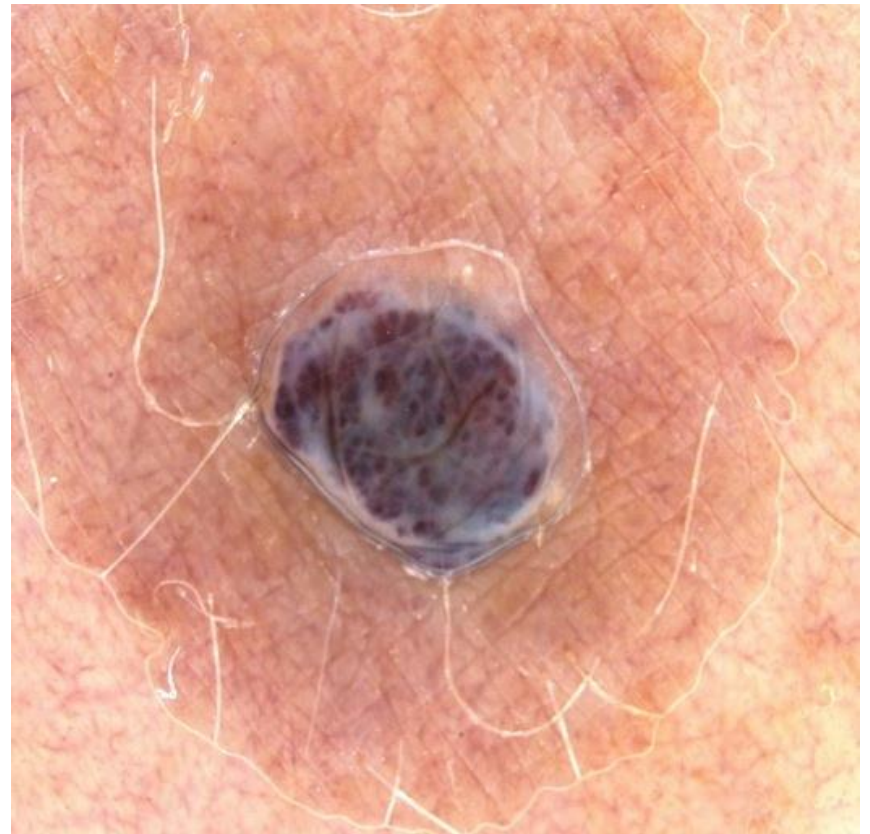
Globular naevus

Red / purple clods: haemangioma

Superficial



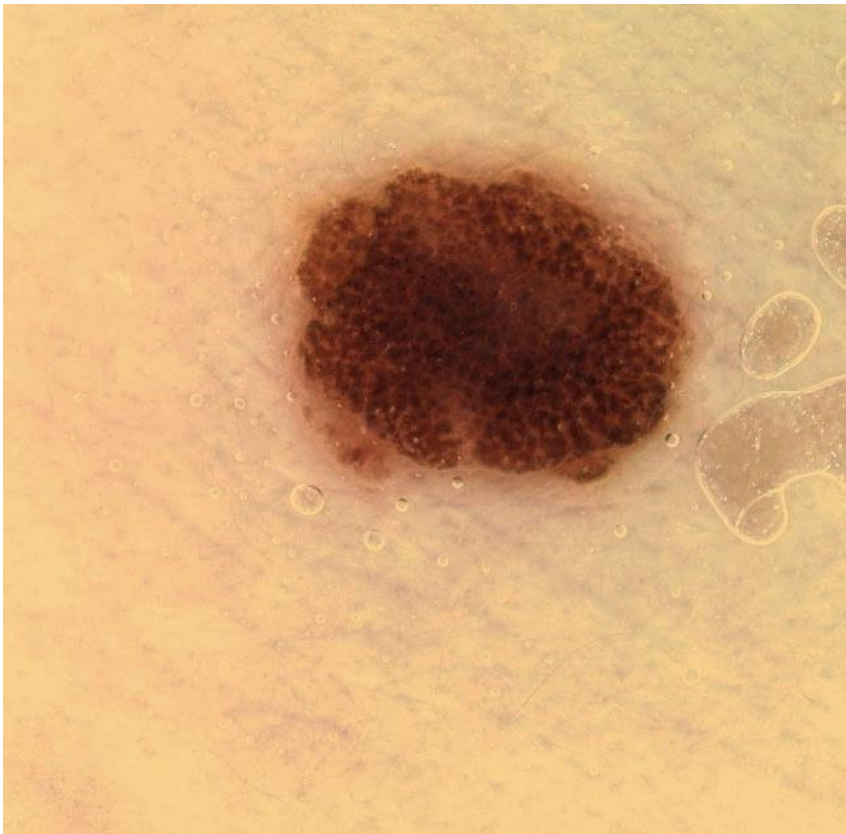
Deep



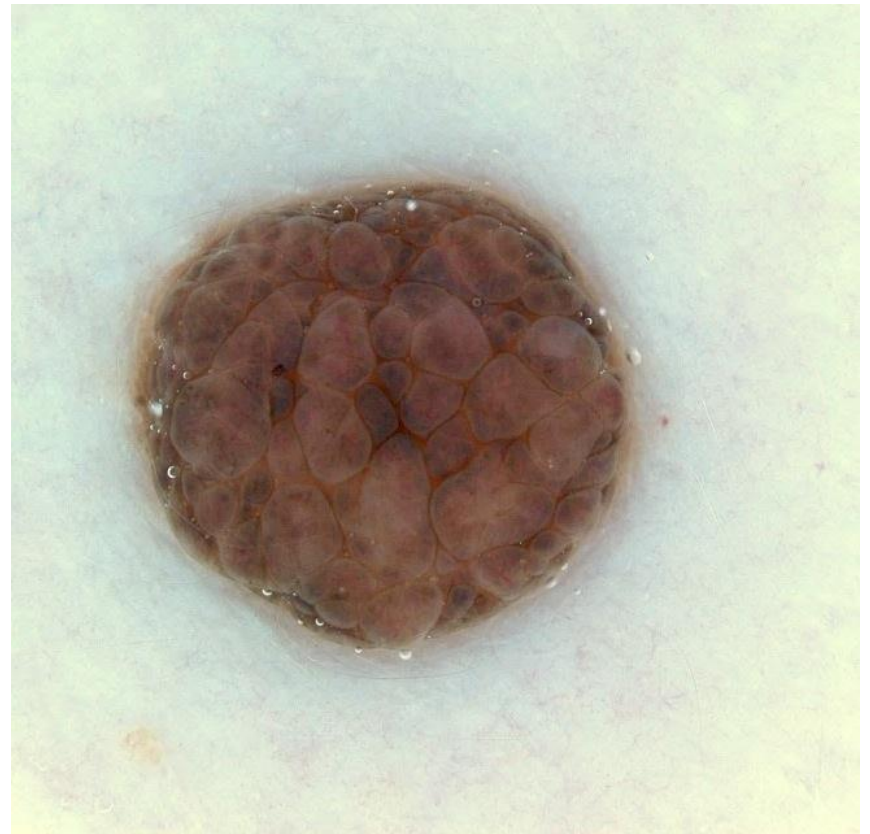
Lacunar pattern

Brown / black clods: naevus

Aggregated globules



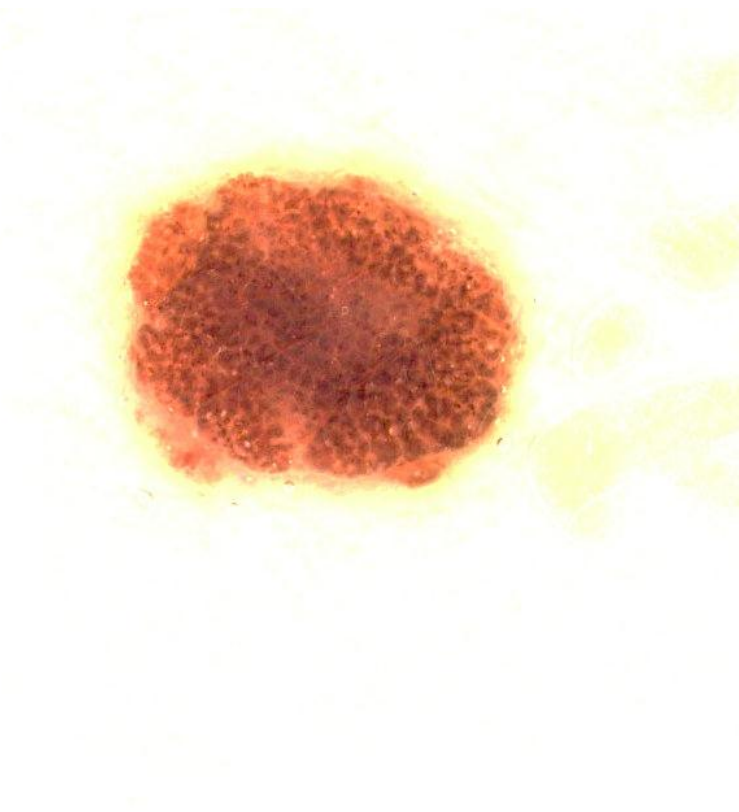
Cobblestone



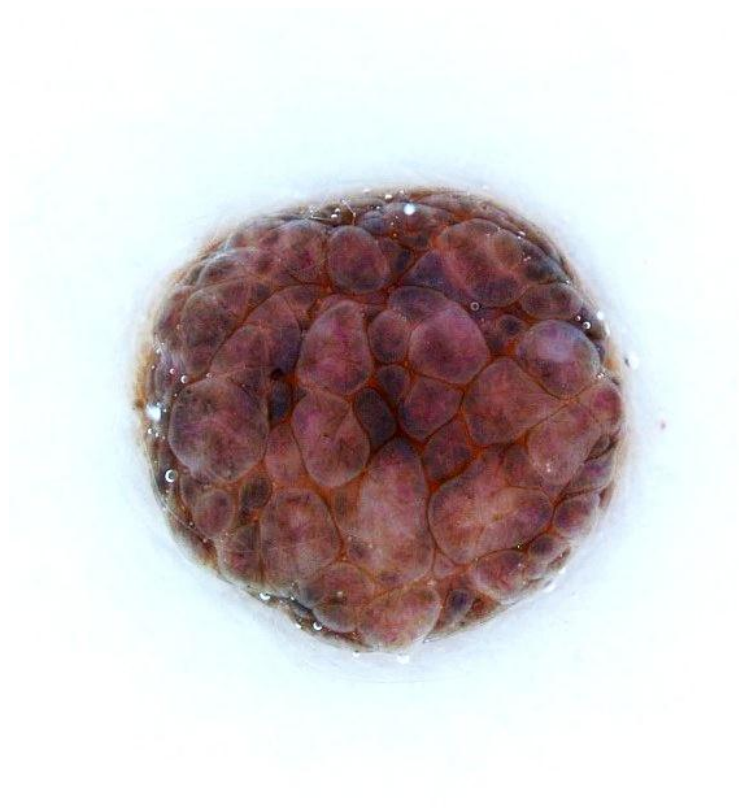
Globular pattern

Brown / black clods: naevus

Aggregated globules



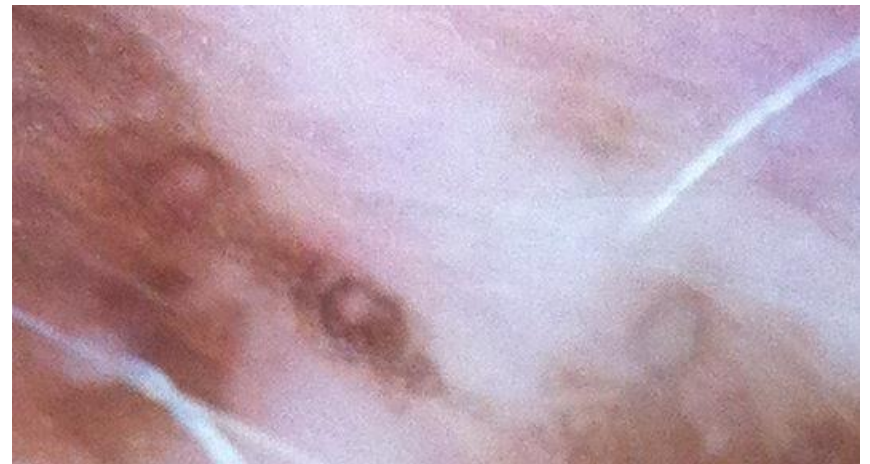
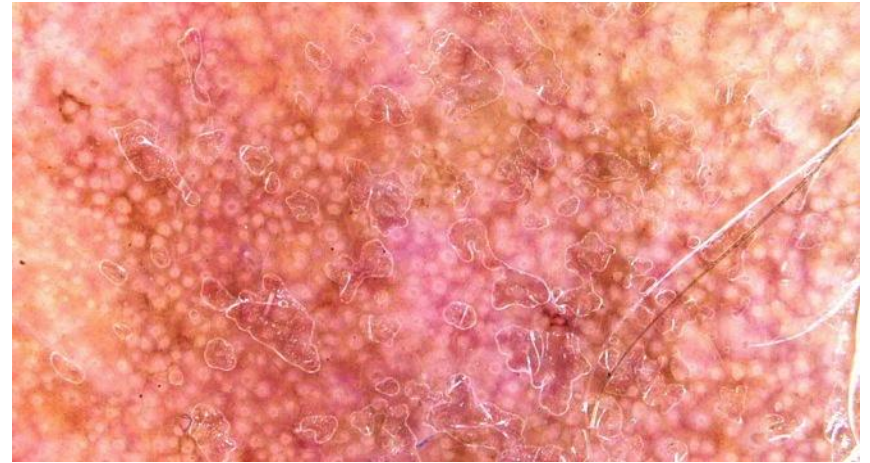
Cobblestone



Globular pattern

Circle pattern

- Rarely the only pattern

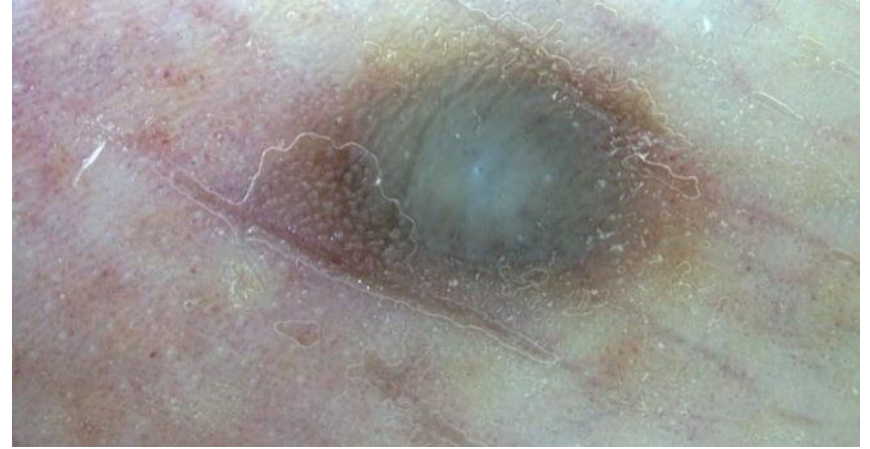
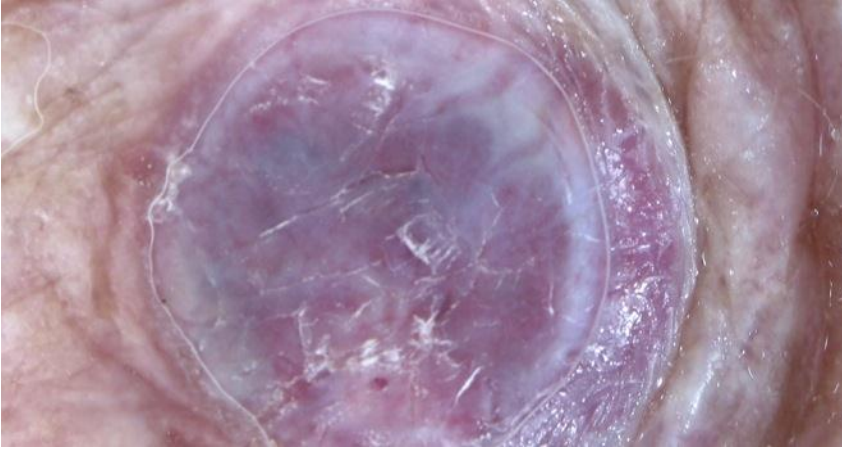


Structureless pattern

- Amorphous
- Sometimes, homogeneous
- Few lines, dots, circles
- One or several colours



Structureless

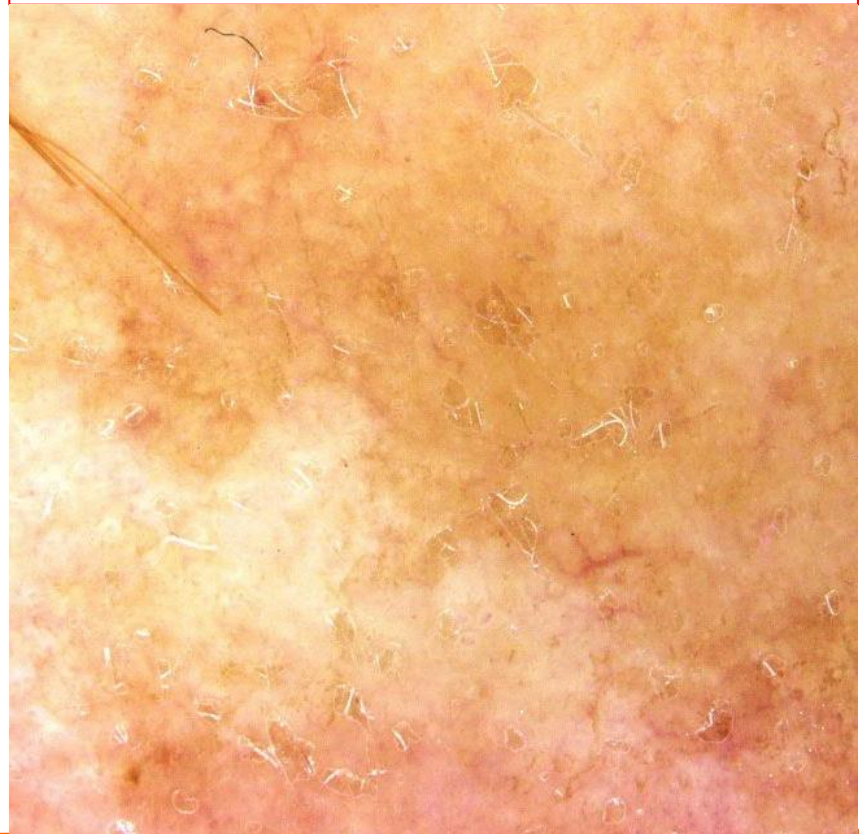


Which has a structureless pattern?

A



B



• A?

• B?

• Both?

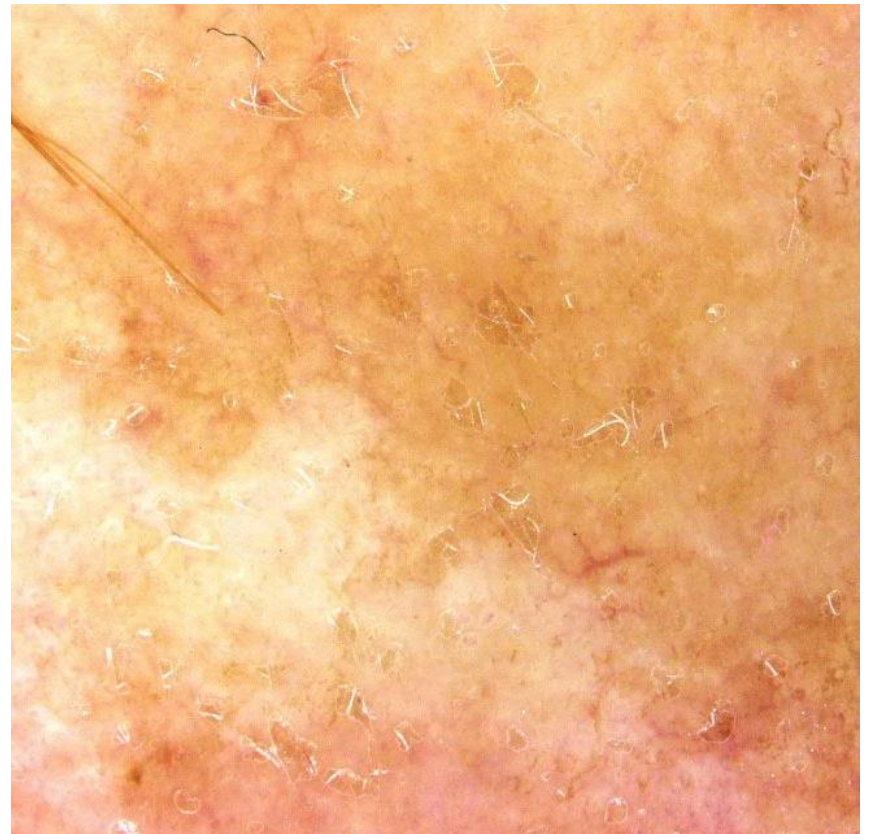
B has a structureless pattern

Seborrheic keratosis



Lines + clods

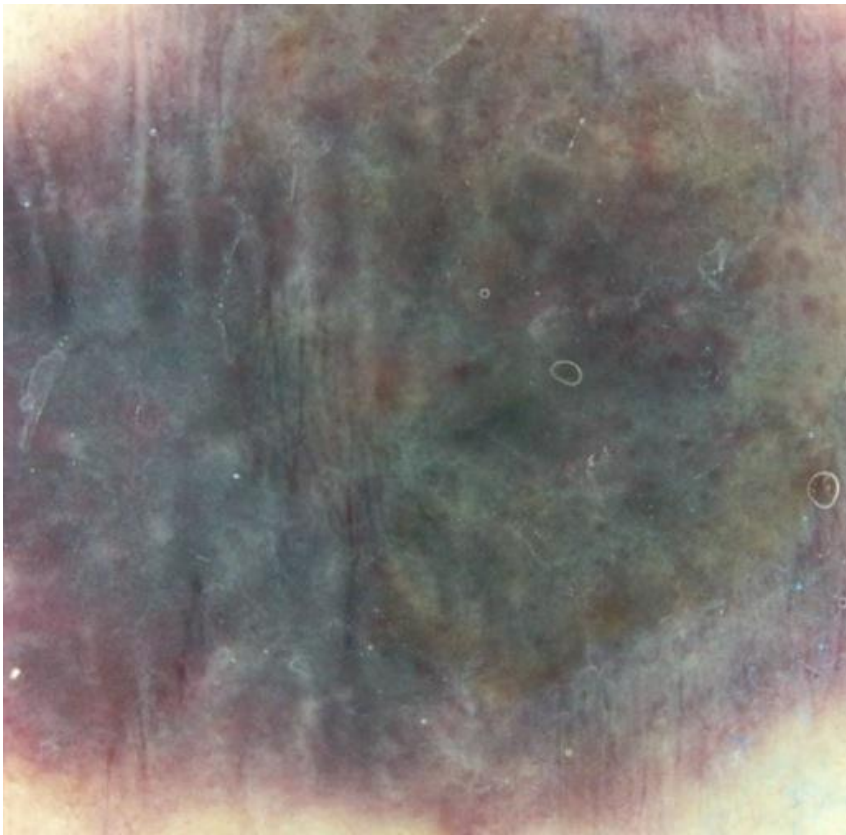
Solar lentigo



Homogeneous yellow lesion

Red / purple structureless: blood

Red, purple, brown, black



Sharp border



Which pattern has this lesion?



- Reticular?

- Clods?

- Structureless?

Dark red structureless lesion



Angioma without clods

- Structureless

Which pattern has this lesion?



- Reticular?

- Clods?

- Structureless?

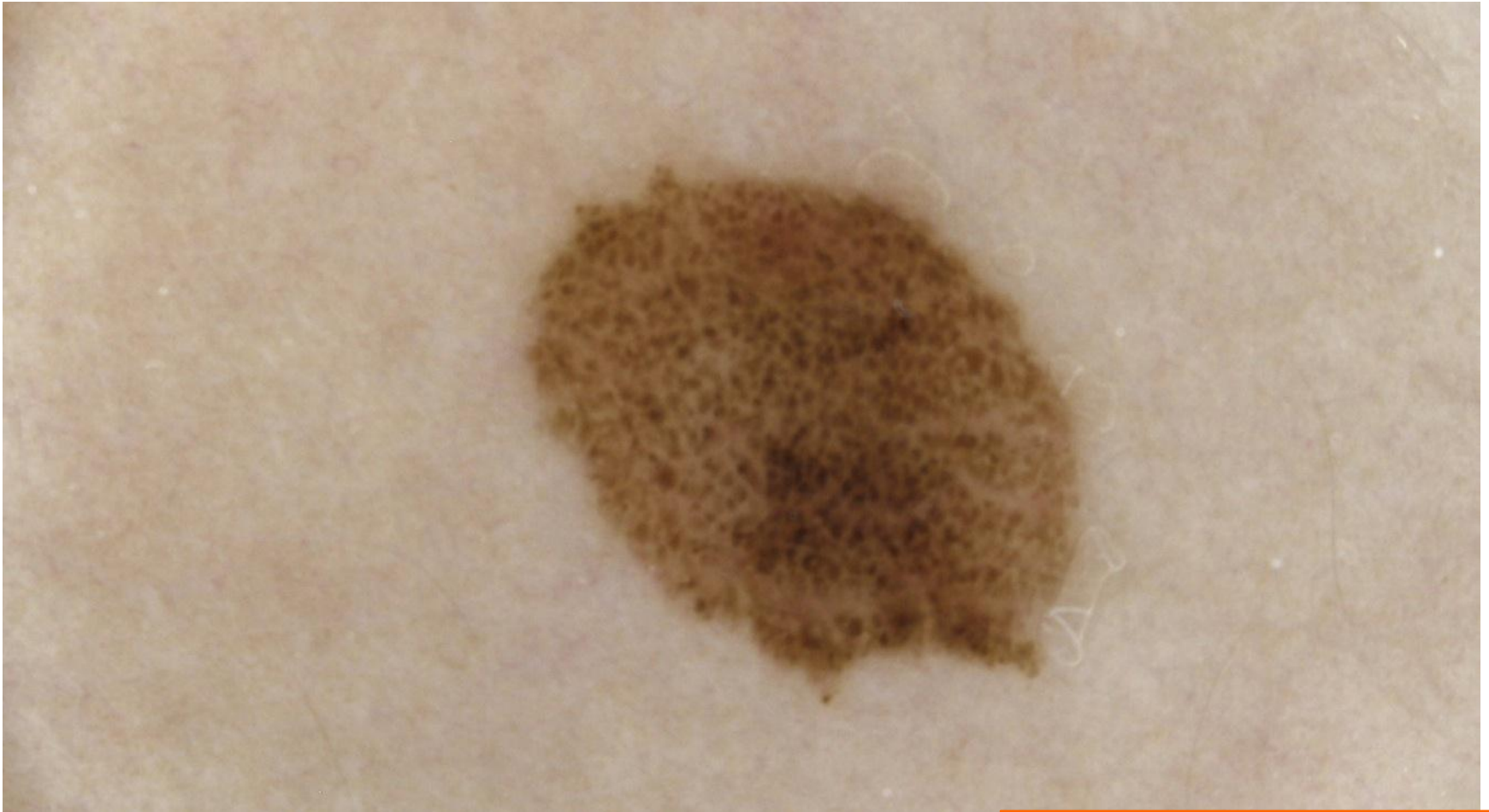
Brown lesion: intersecting lines



- Reticular

Benign melanocytic naevus

Which pattern has this lesion?

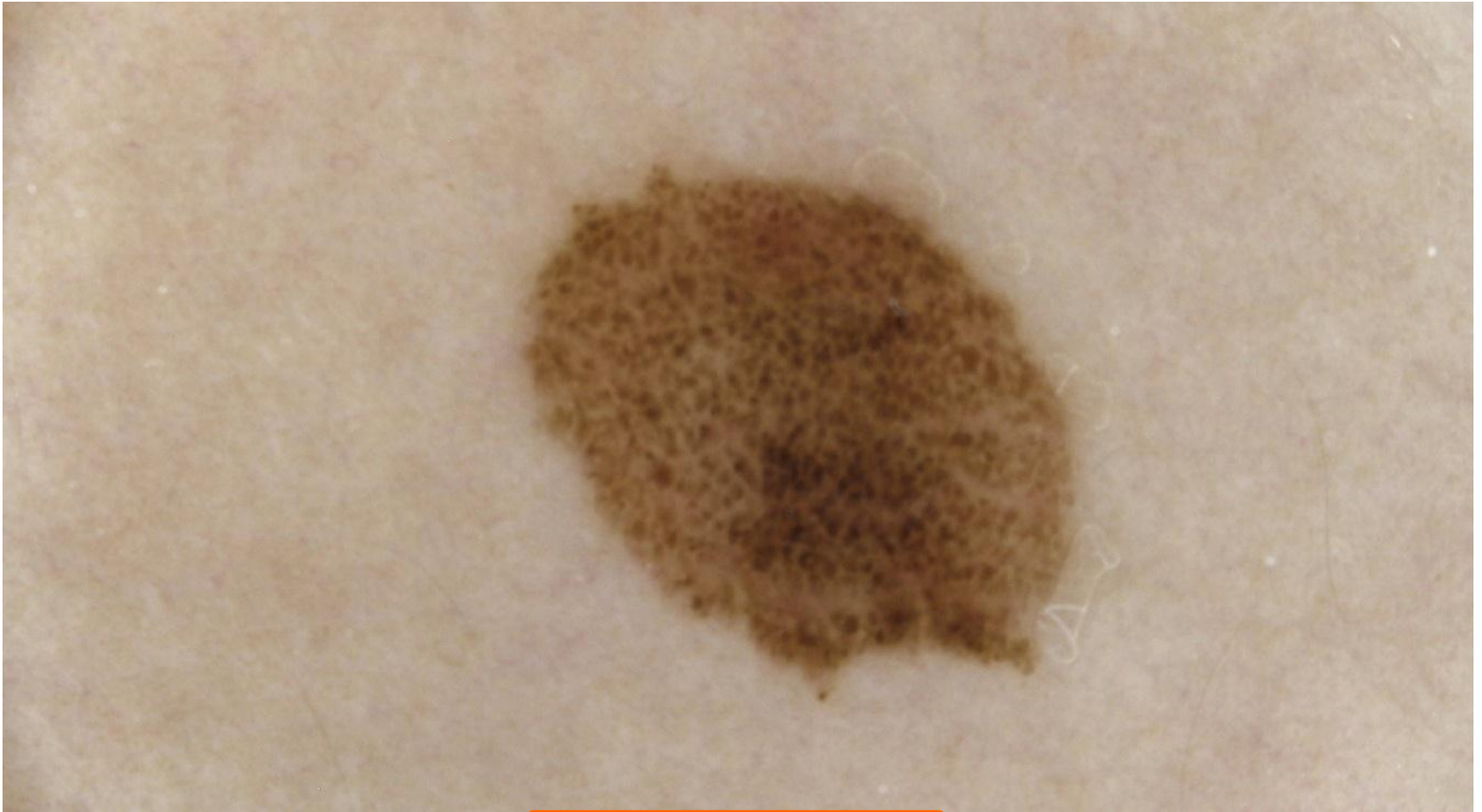


- Reticular?

- Clods?

- Structureless?

Brown lesion: aggregated clods

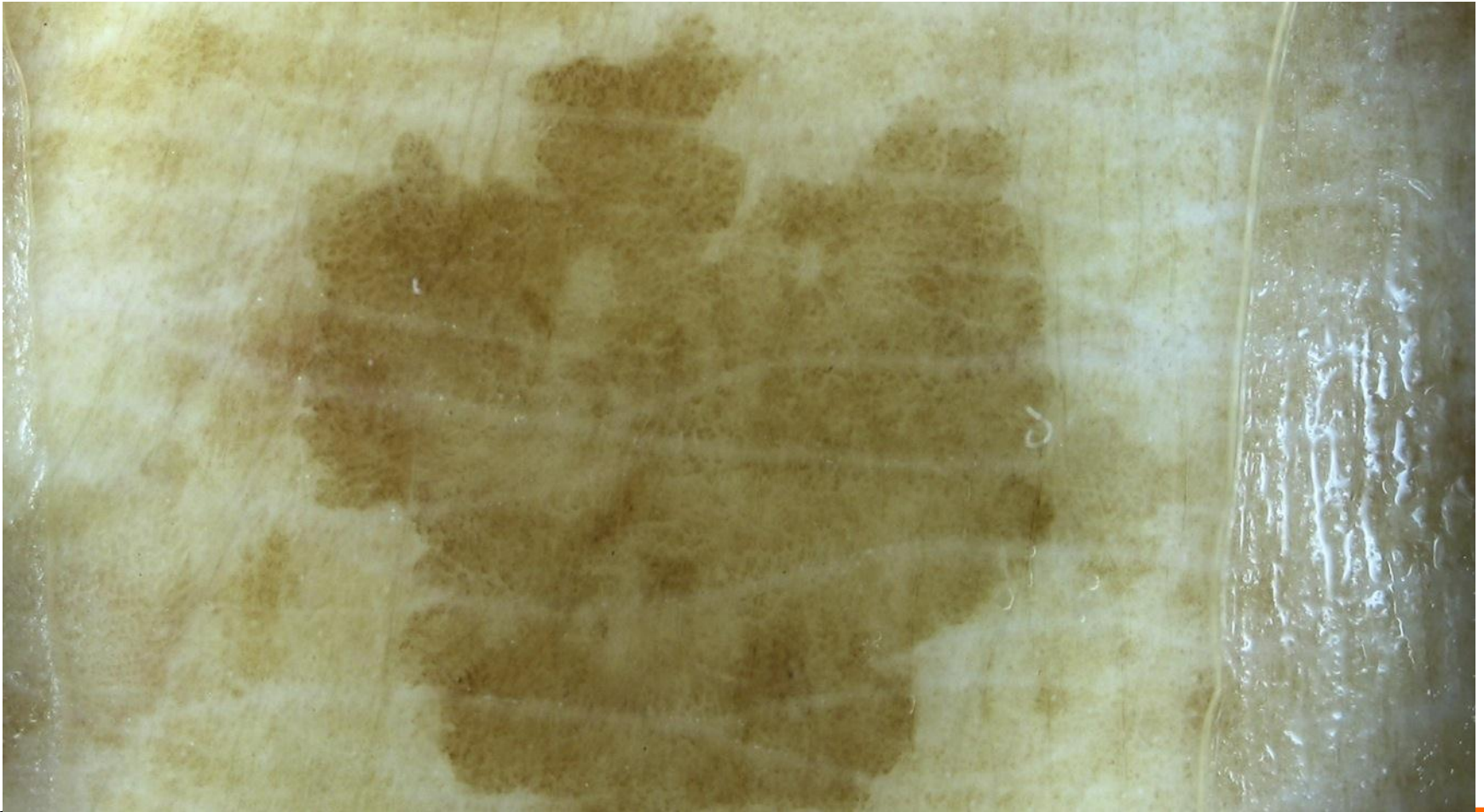


Benign naevus

- Clods

Globular

Which pattern has this lesion?

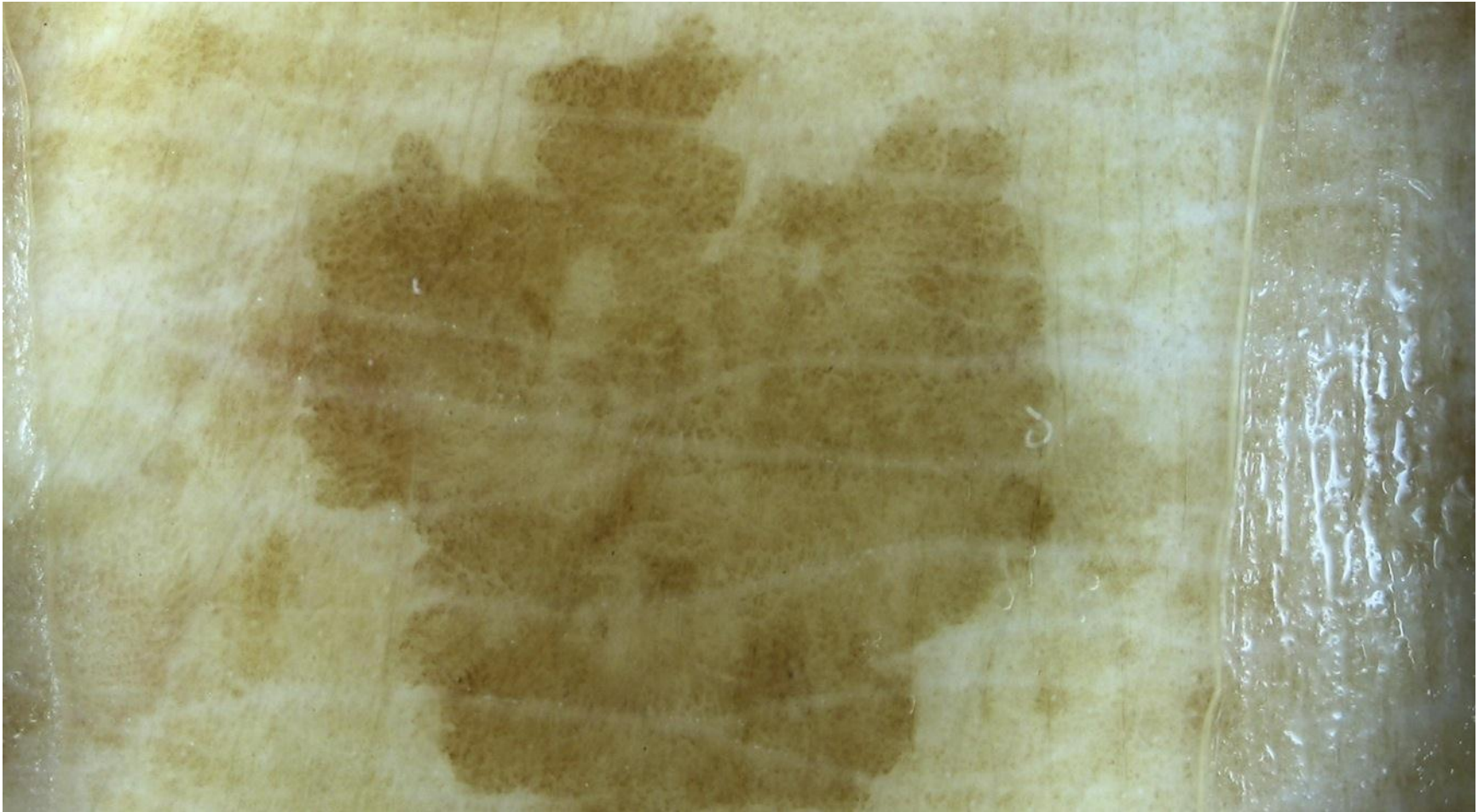


- Reticular?

- Clods?

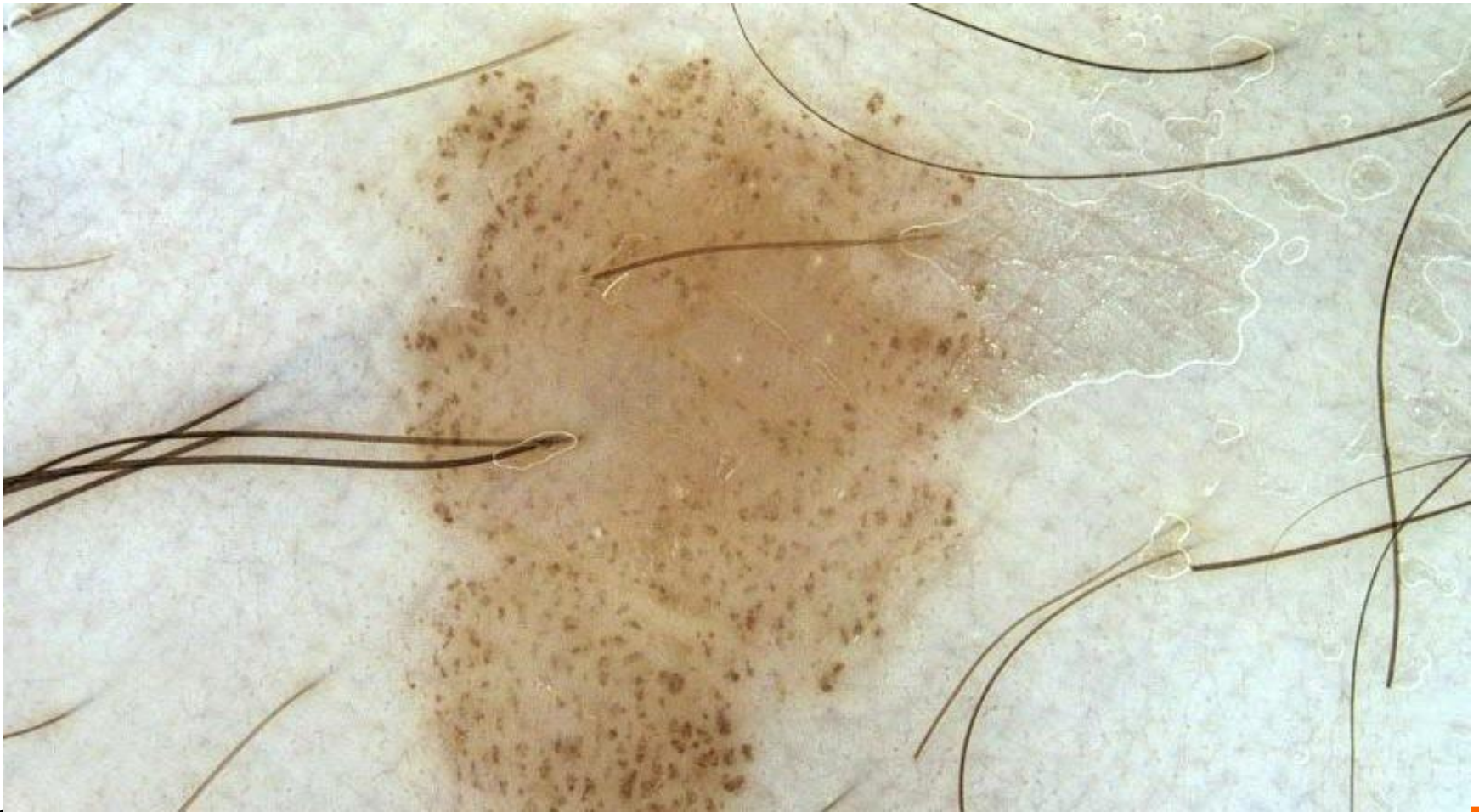
- Structureless?

Brown lesion: dots/clods in lines



Solar lentigo • Dotted or clods

Which pattern has this lesion?

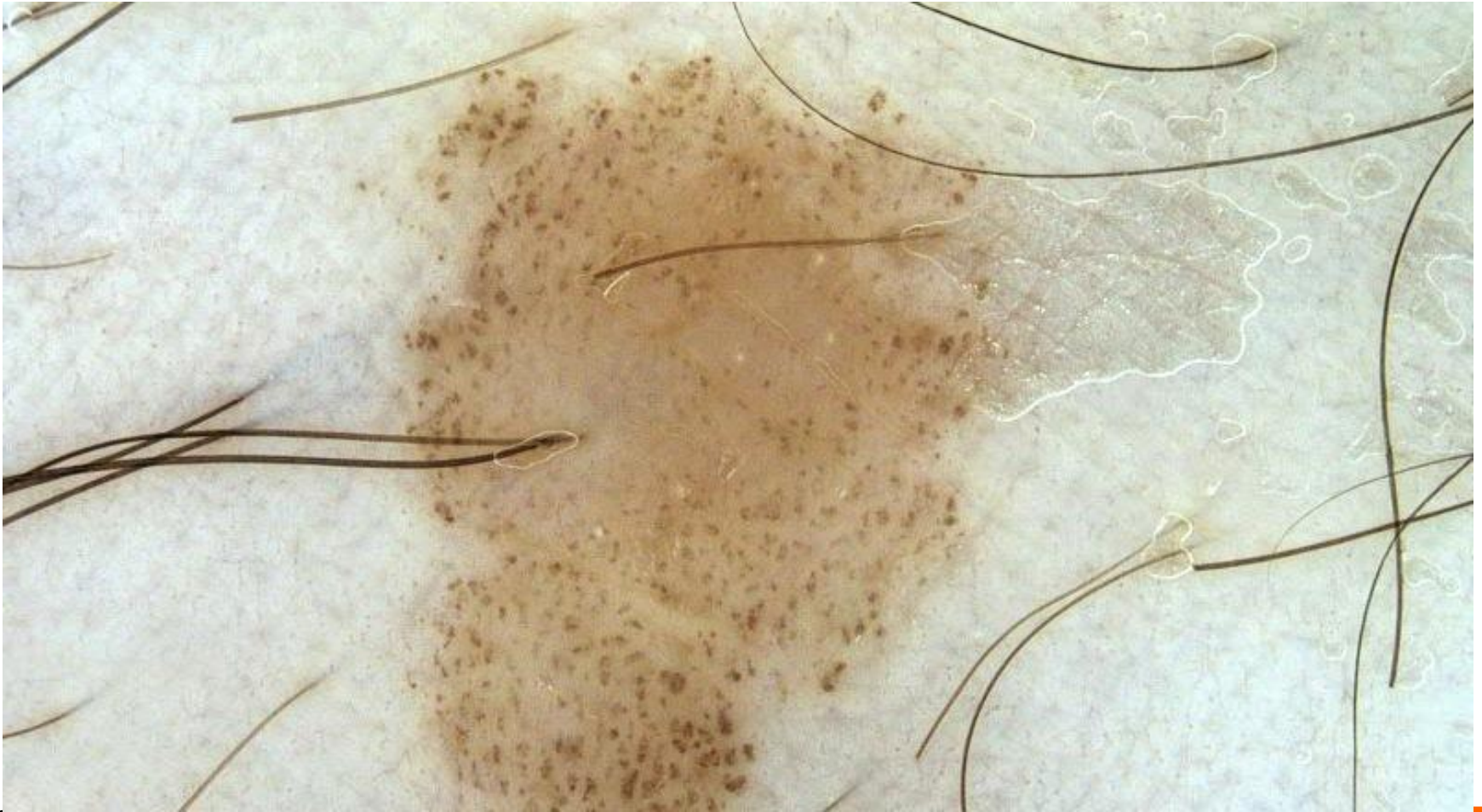


• Dotted?

• Clods?

• Structureless?

Brown lesion: dots/clods + structureless



- Dotted?

- Clods?

- Structureless?

Mixed patterns

- Symmetry = benign
 - Structure not shape
- Asymmetry = potentially malignant
 - Sometime called CHAOS
 - Look for clues

Which lesion should you excise?

A



B



• A?

• B?

• Both?

Excise B

Benign eclipse naevus

Exclude melanoma

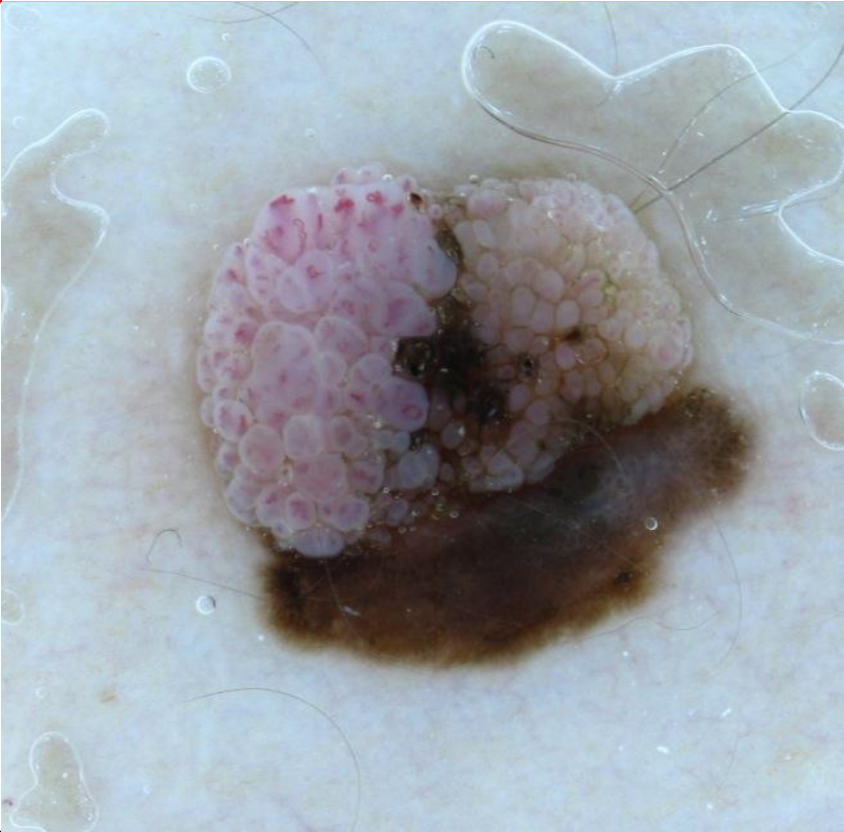


Symmetrical structure

Aymmetrical structure

Which lesion should you excise?

A



B



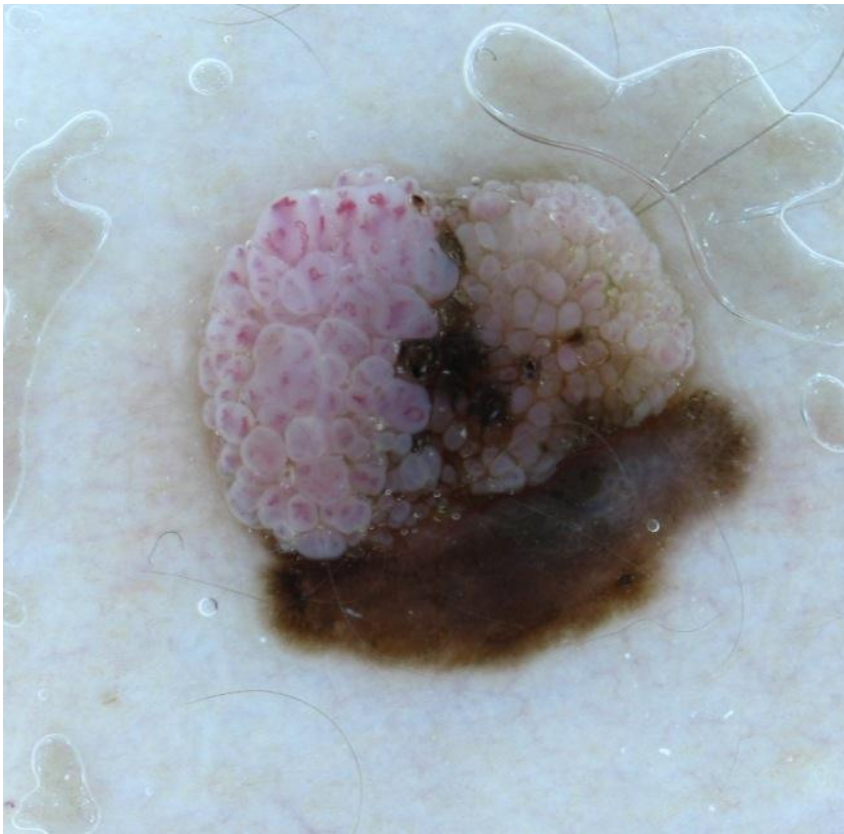
• A?

• B?

• Both?

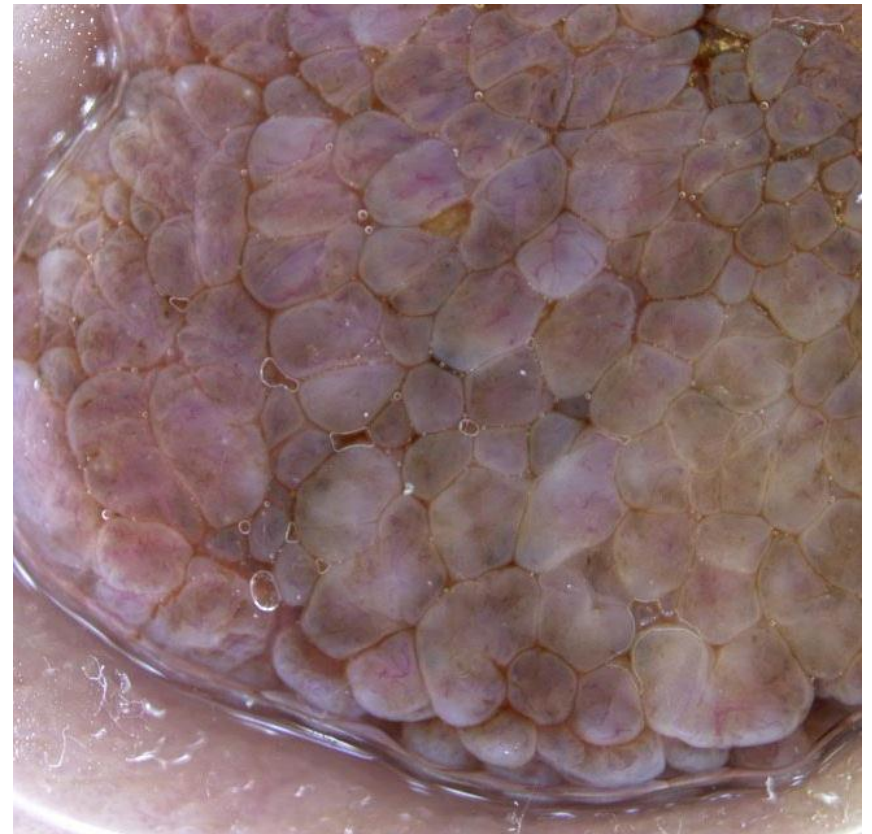
Excise A

Melanoma



Asymmetrical structure

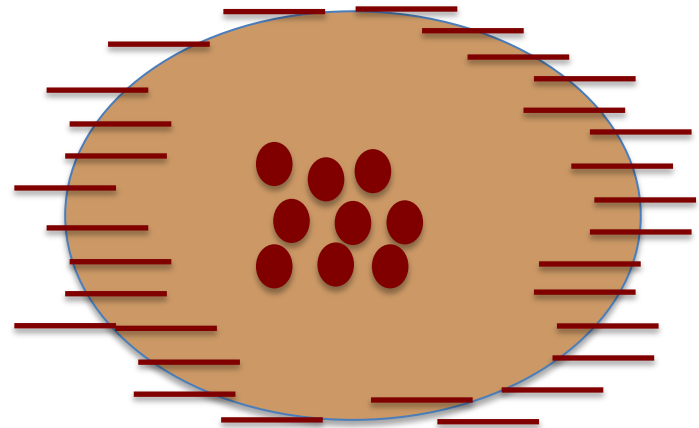
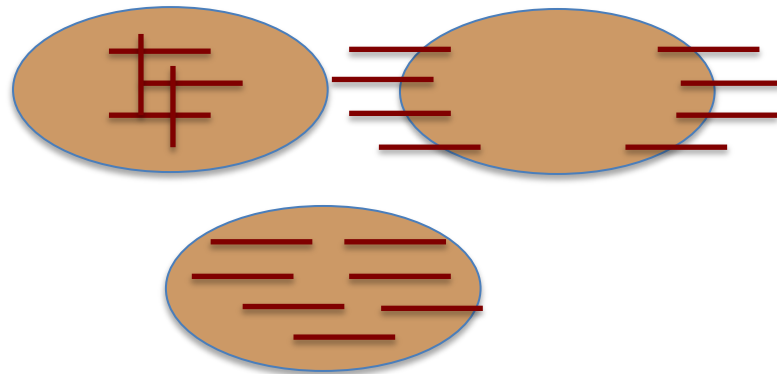
Dermal naevus (Unna type)



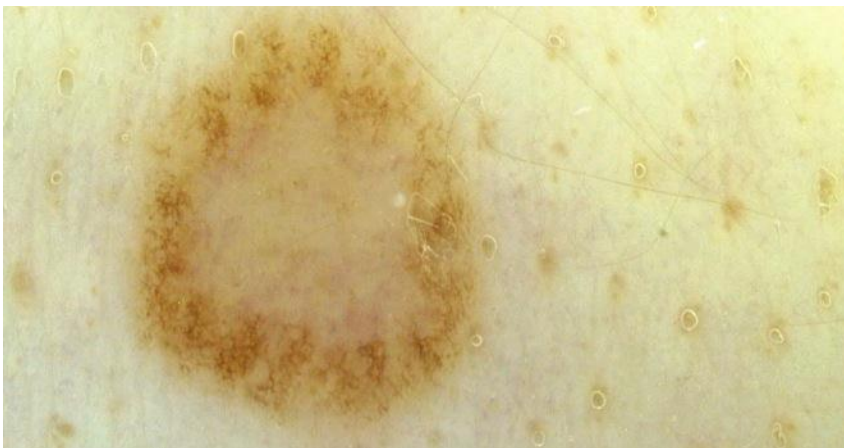
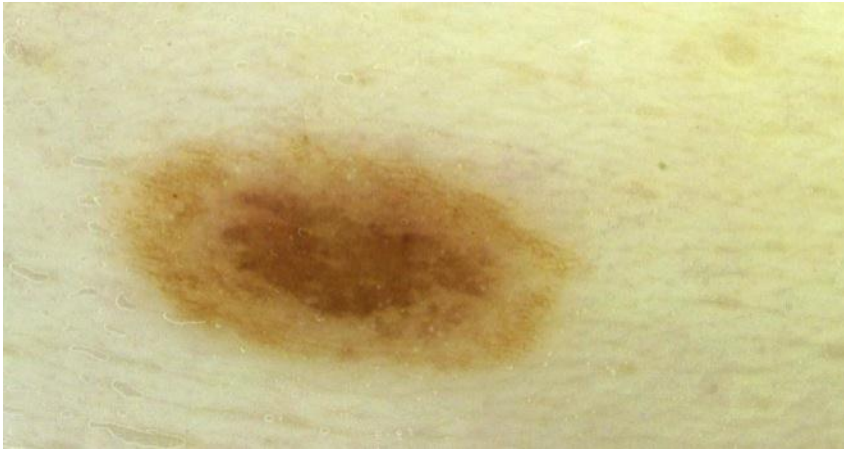
Symmetrical structure

Symmetry

- 2 patterns: complex
 - One inside the otherOR
 - Regularly distributed
- 3 patterns:
 - Concentric



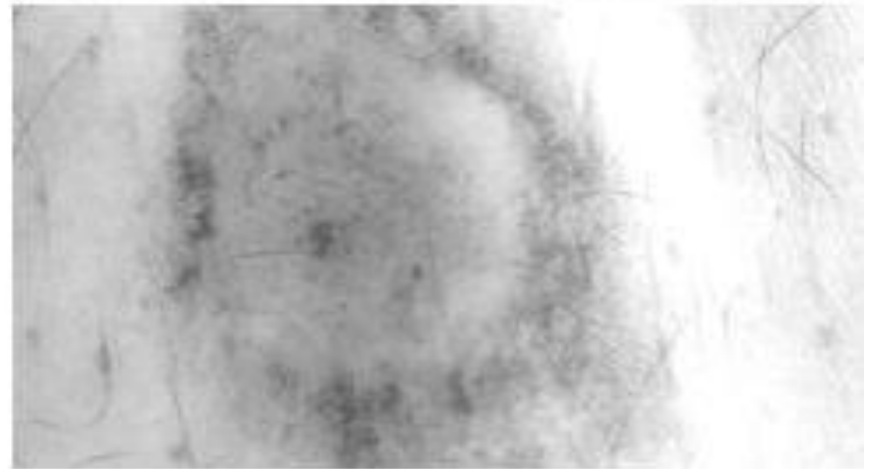
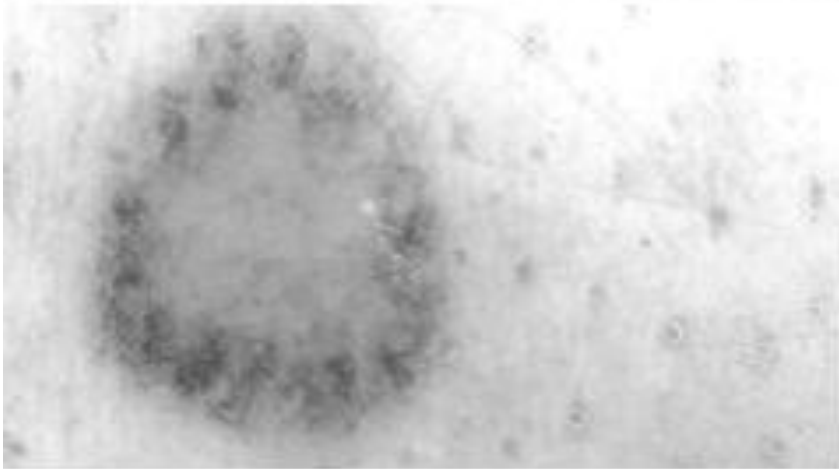
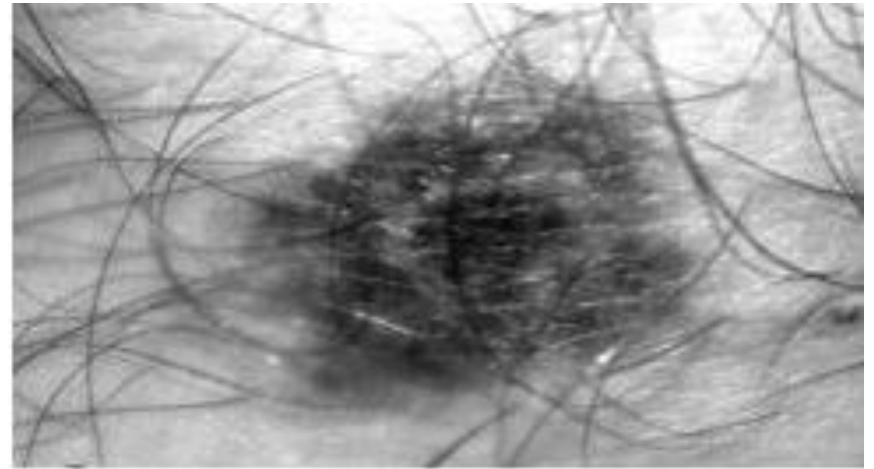
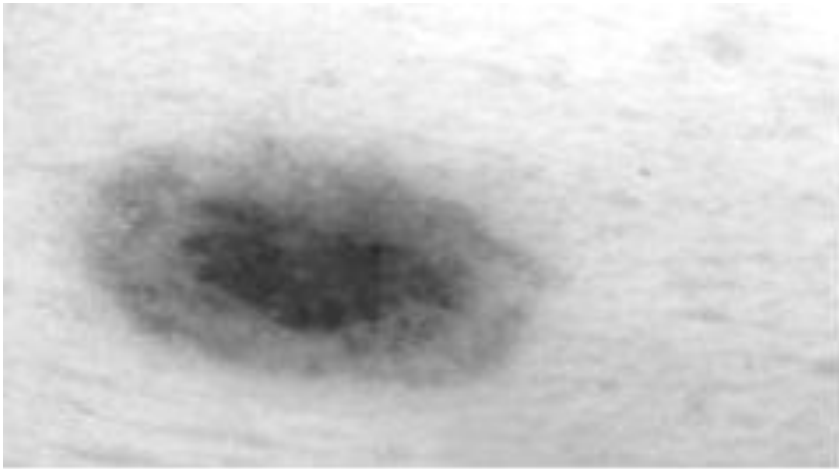
Symmetry



- 2 patterns

- 3 patterns

Symmetry



- 2 patterns

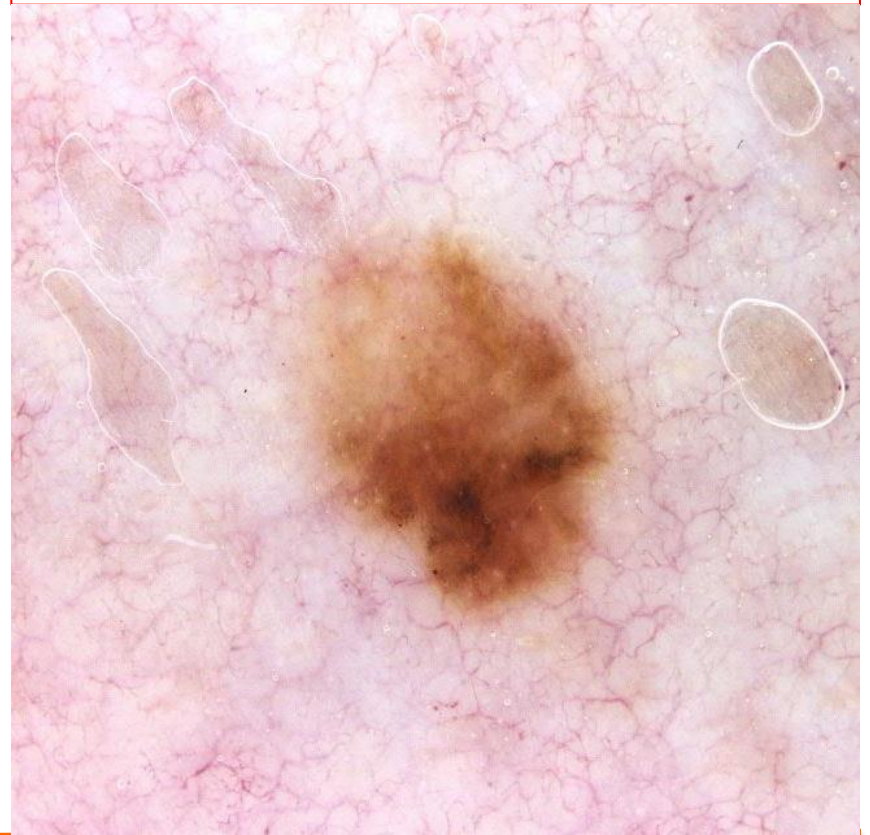
- 3 patterns

Which lesion has symmetry?

A



B



• A?

• B?

• Both?

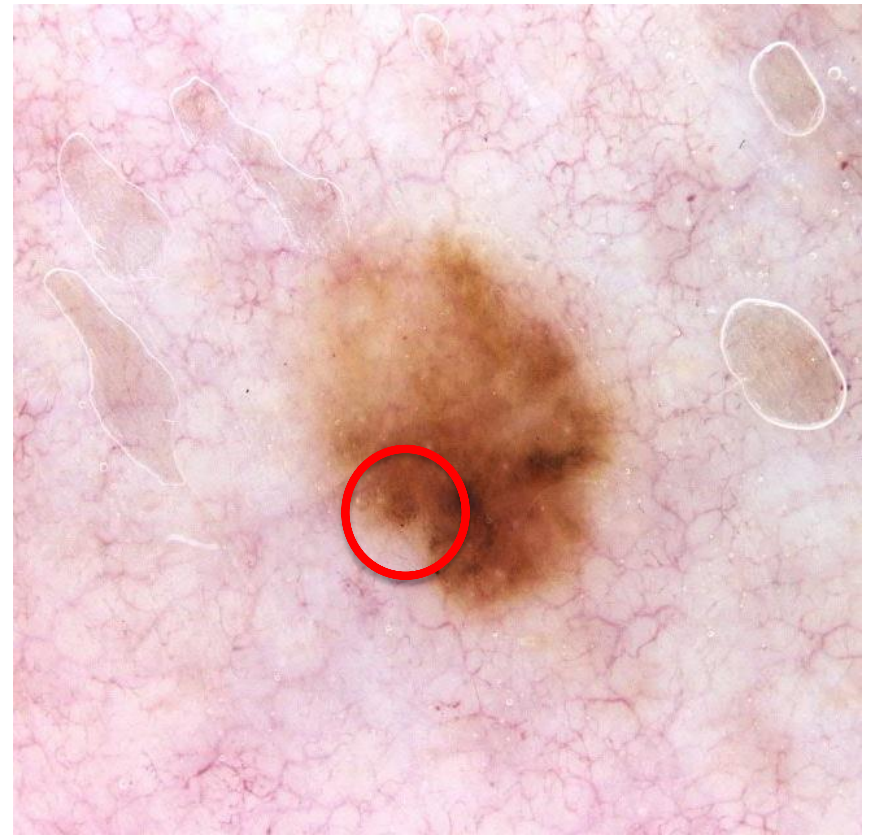
A has symmetry

Melanocytic naevus



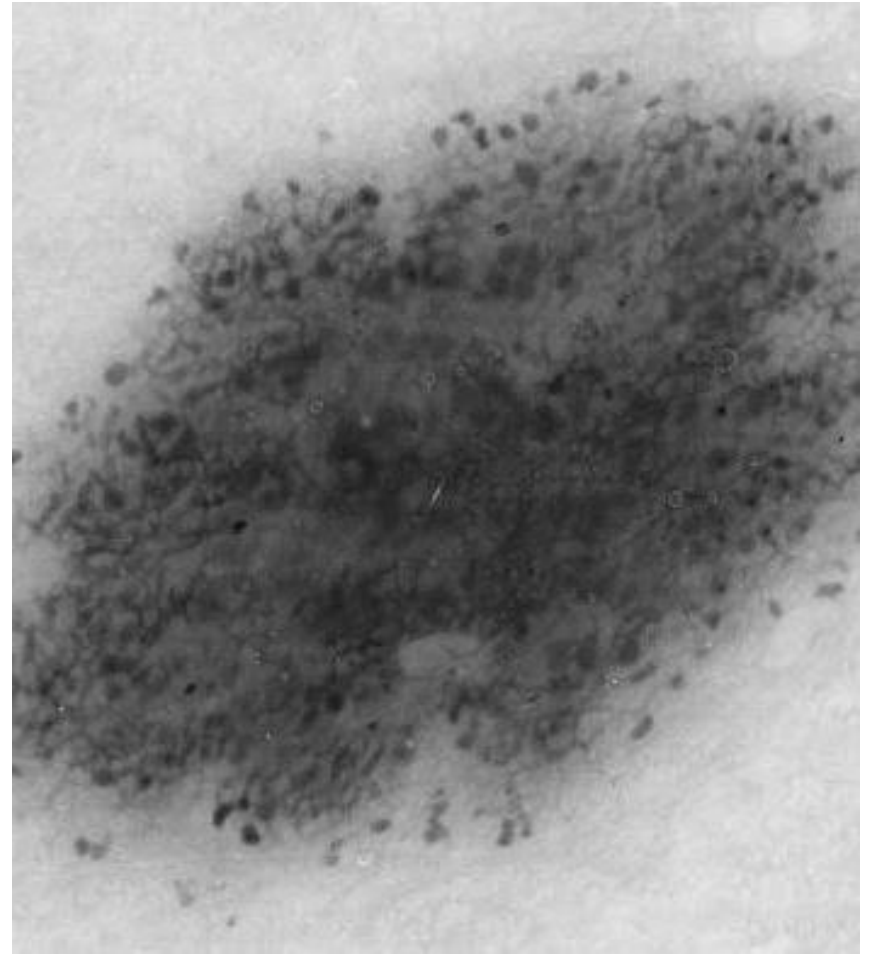
Reticular + central clod patterns

Melanoma in situ



Structureless + dotted pattern

Symmetry

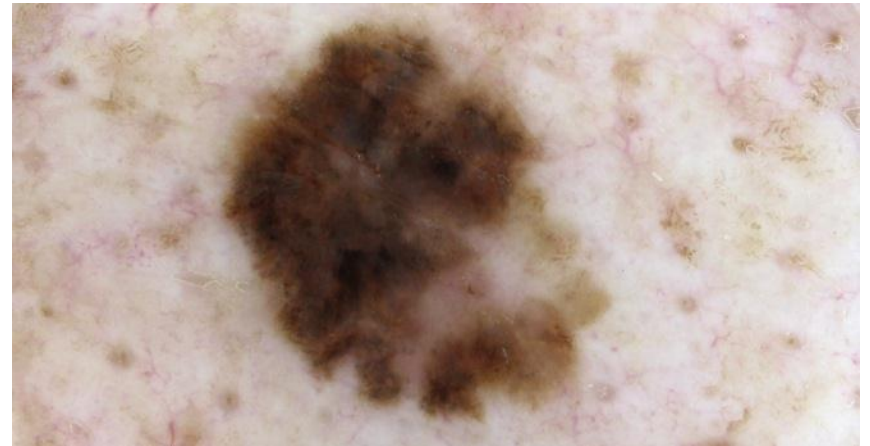
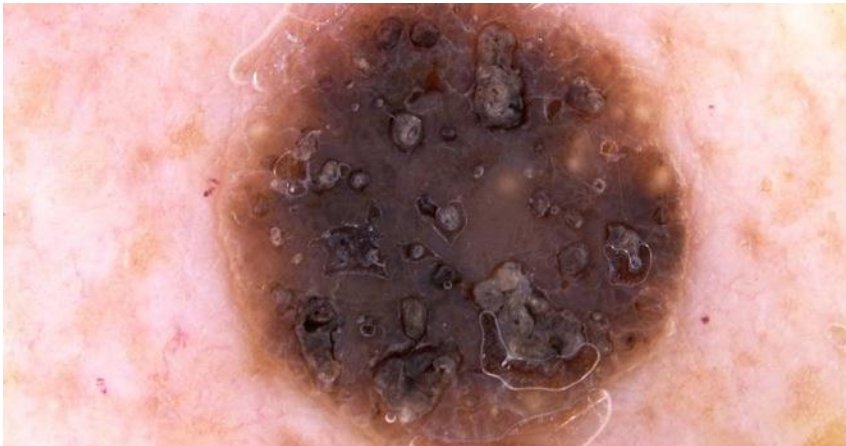
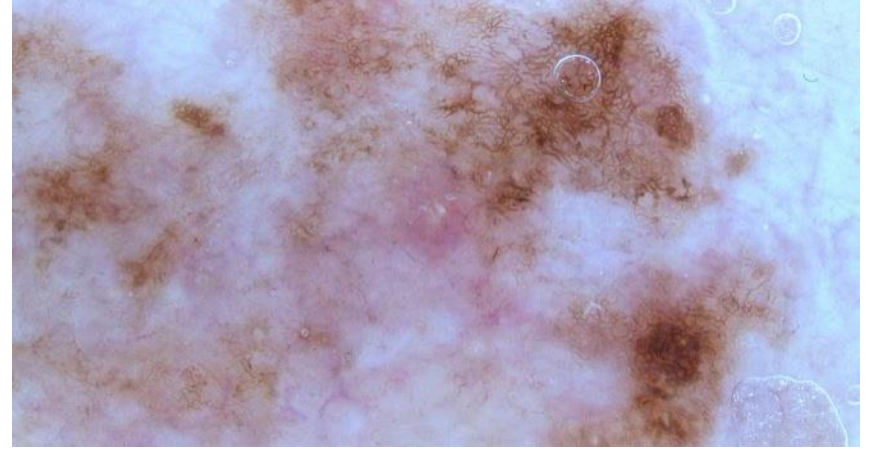
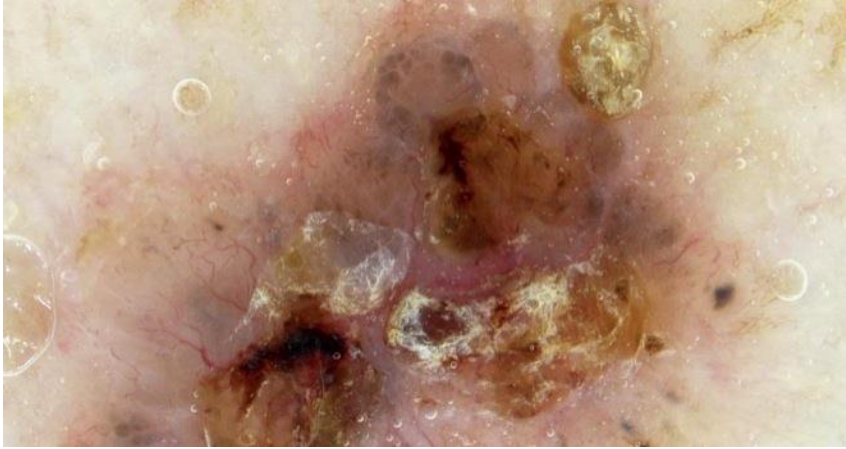


Asymmetry

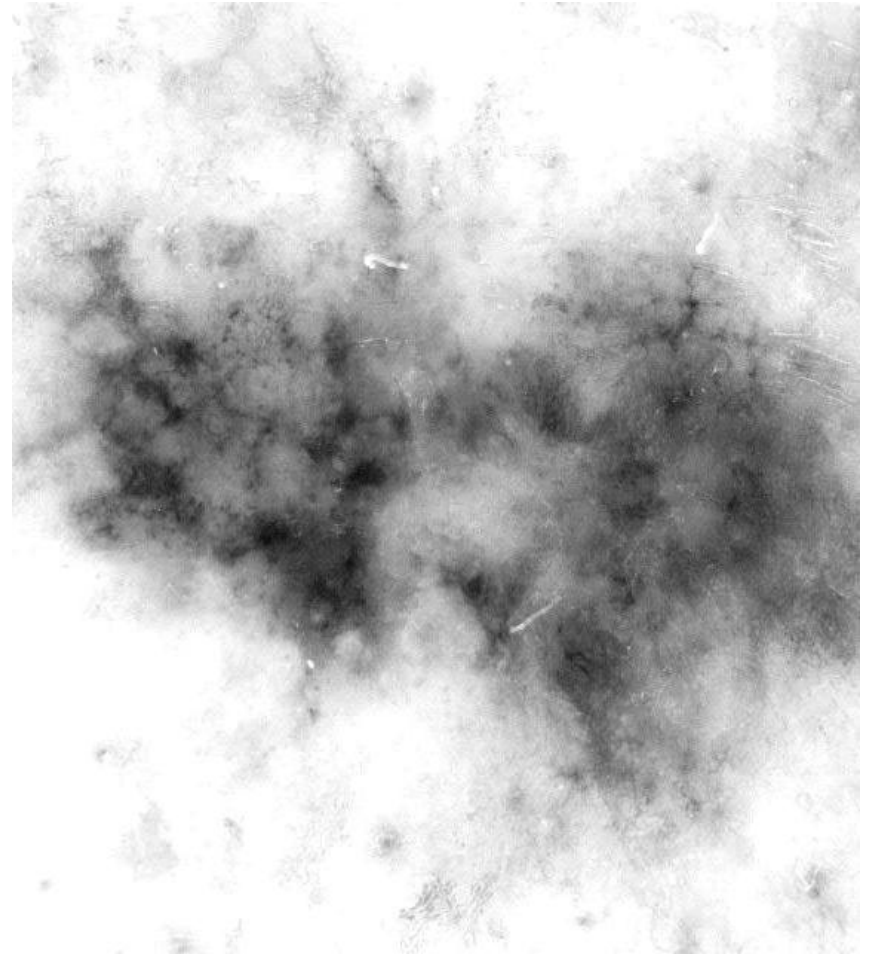
- 2 or more patterns
- Non-concentric



Asymmetry



Asymmetry

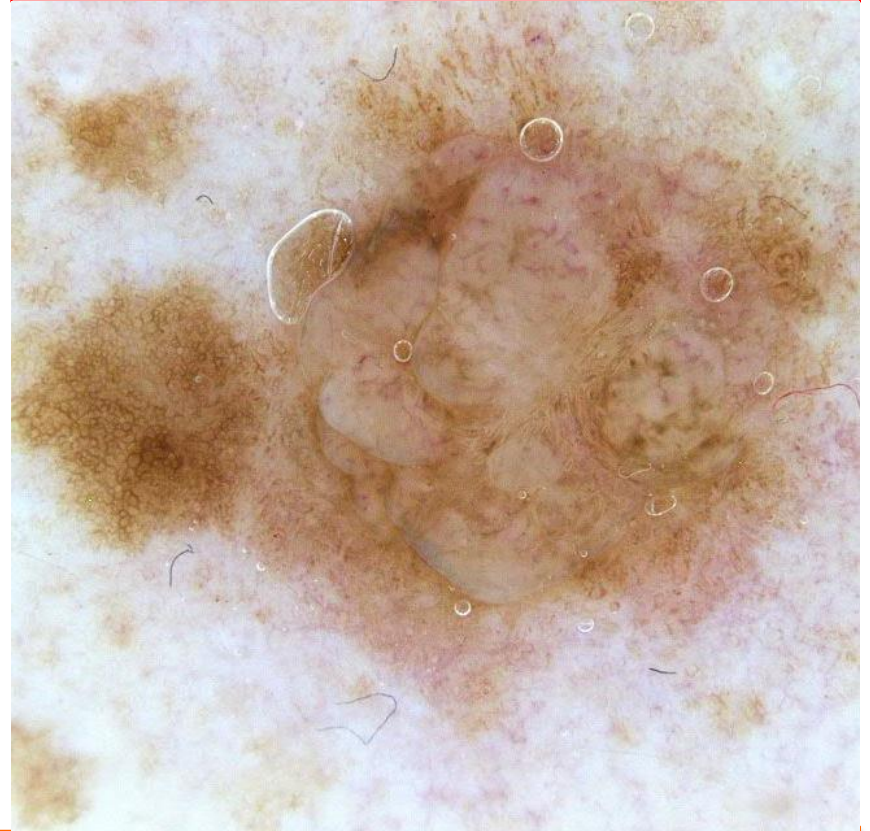


Which has symmetry of structure?

A



B



• A?

• B?

• Both?

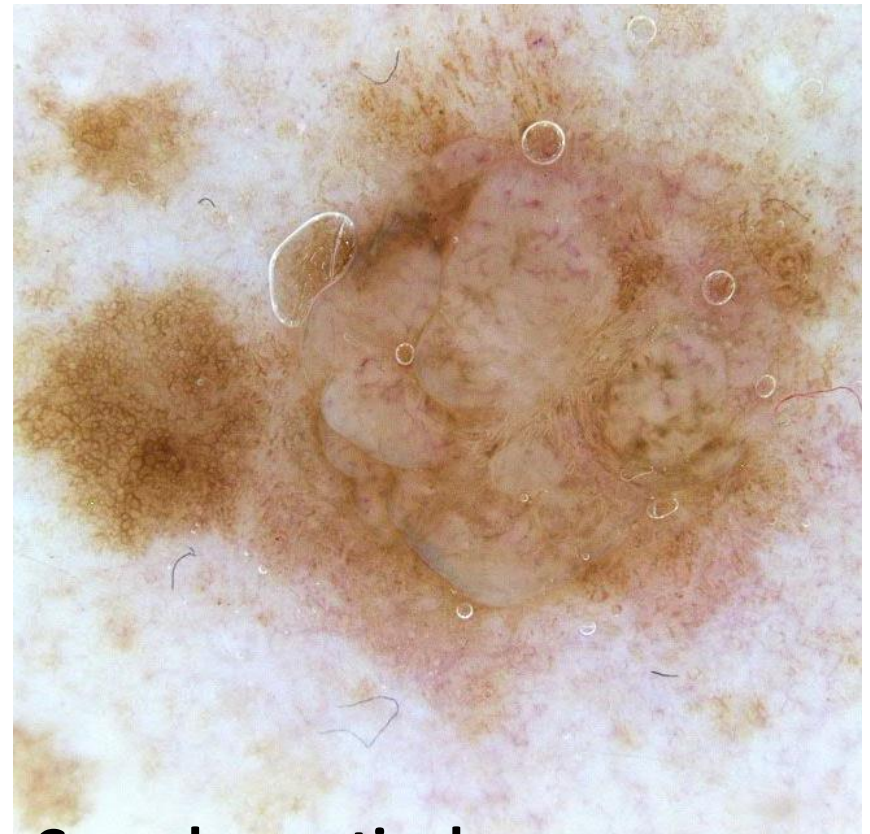
A has symmetry of structure

**Benign naevus
(no need to excise)**



Reticular pattern

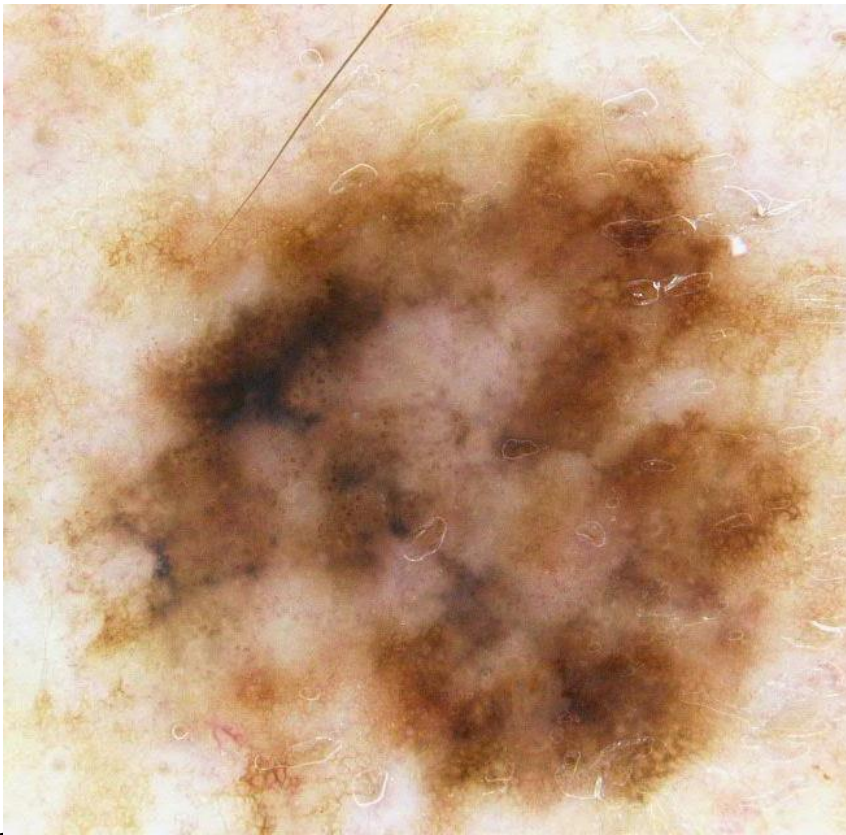
**Benign naevus
(consider excision)**



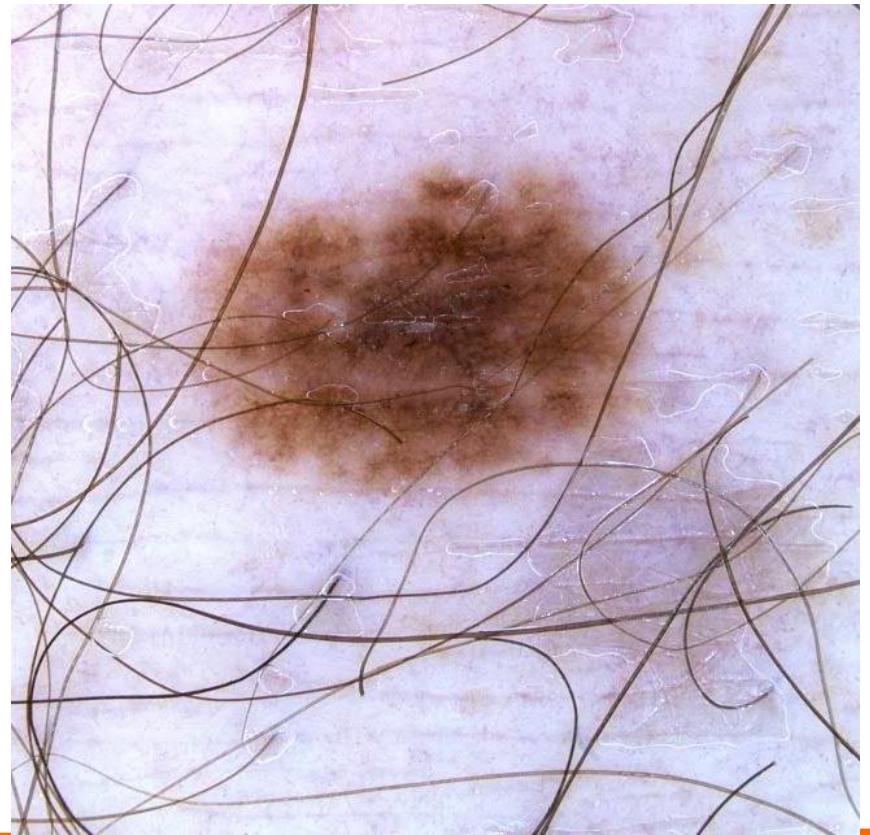
**Complex: reticular +
structureless**

Which lesion should you excise?

A



B



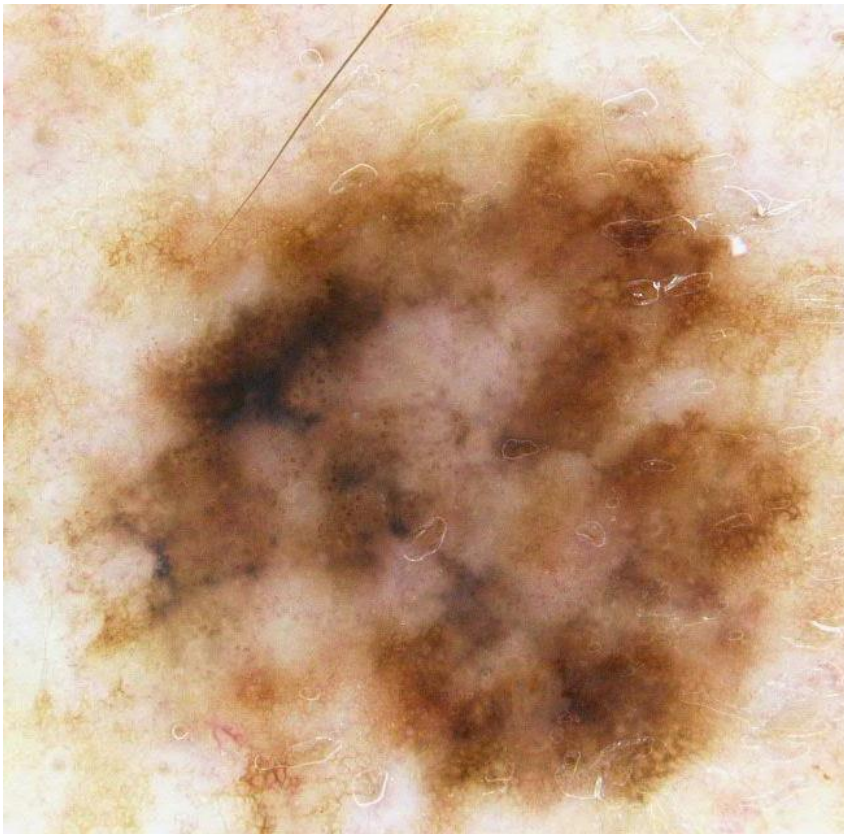
- A?

- B?

- Both?

Excise A

Melanoma: multicomponent



Asymmetrical structure

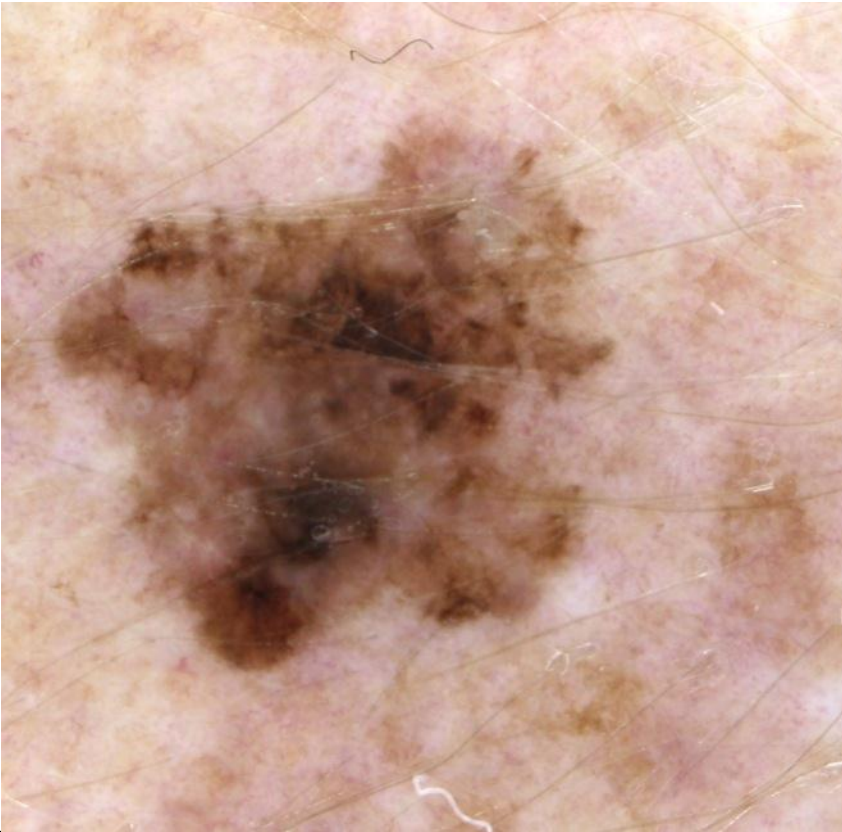
Benign naevus: reticular



Symmetrical structure

Which lesion should you excise?

A



B



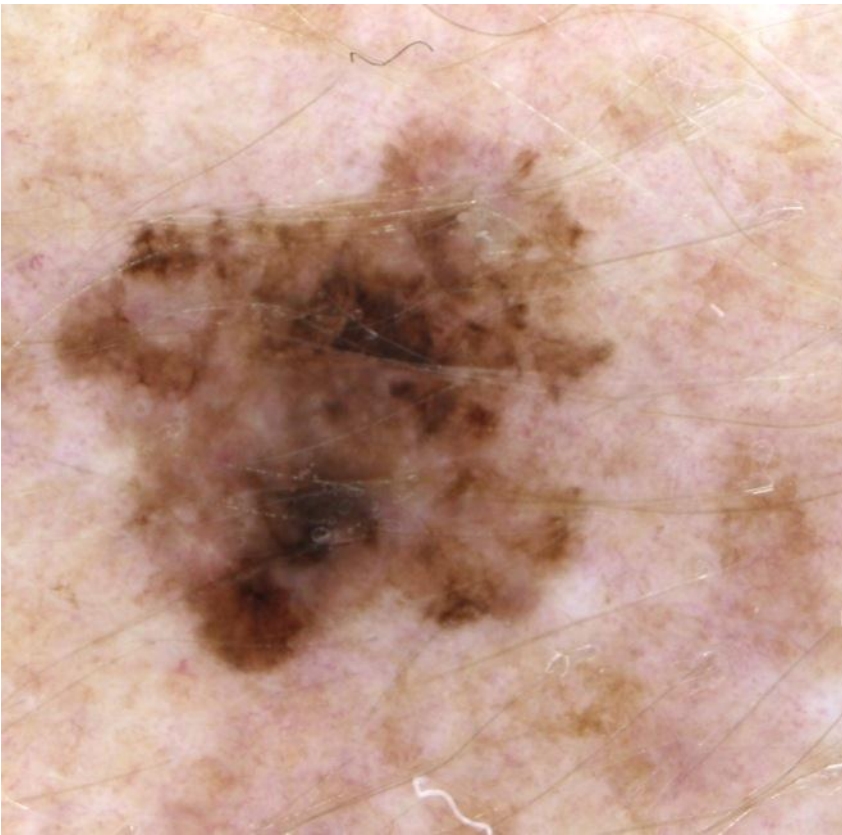
• A?

• B?

• Both?

Excise A +/- B

Melanoma: multicomponent



Asymmetrical structure

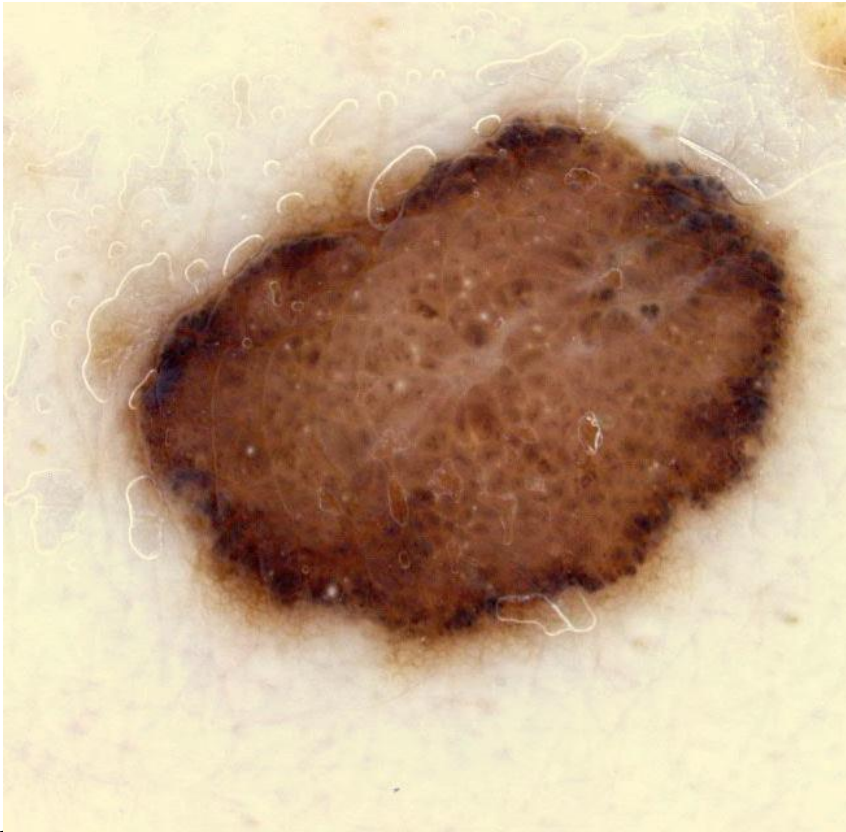
Congenital naevus: multicpnt



Asymmetrical structure

Which lesion should you excise?

A



B



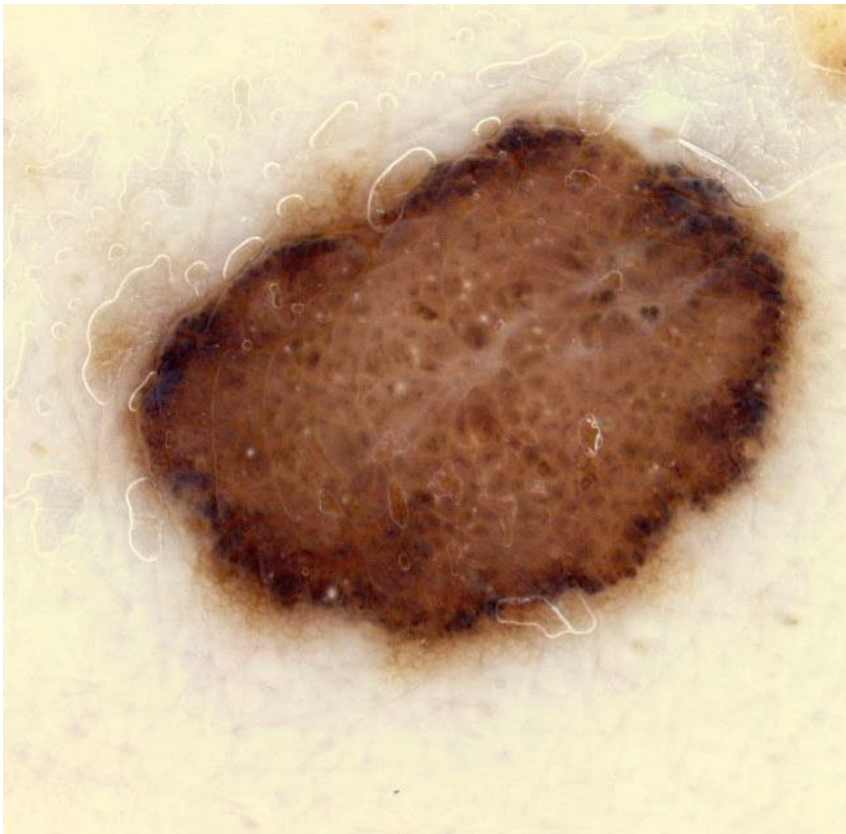
• A?

• B?

• Both?

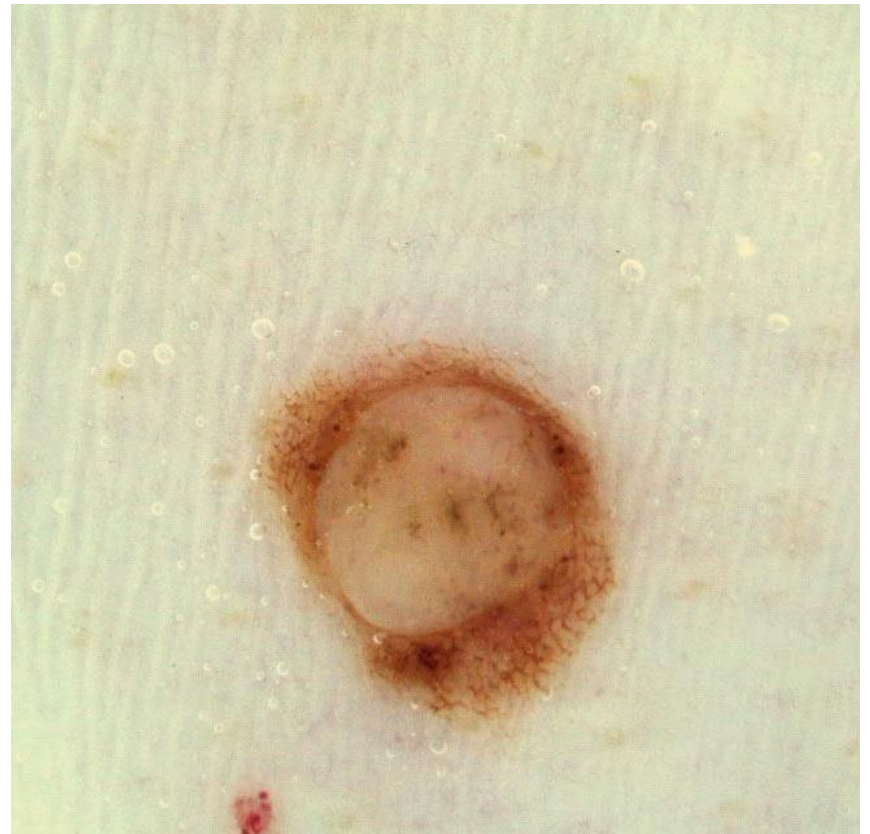
Excise neither!

Childhood onset eclipse naevus



Symmetrical structure

Fried egg naevus



Symmetrical structure

Dermatoscopy of specific lesions

Melanocytic naevi: ‘Congenital’

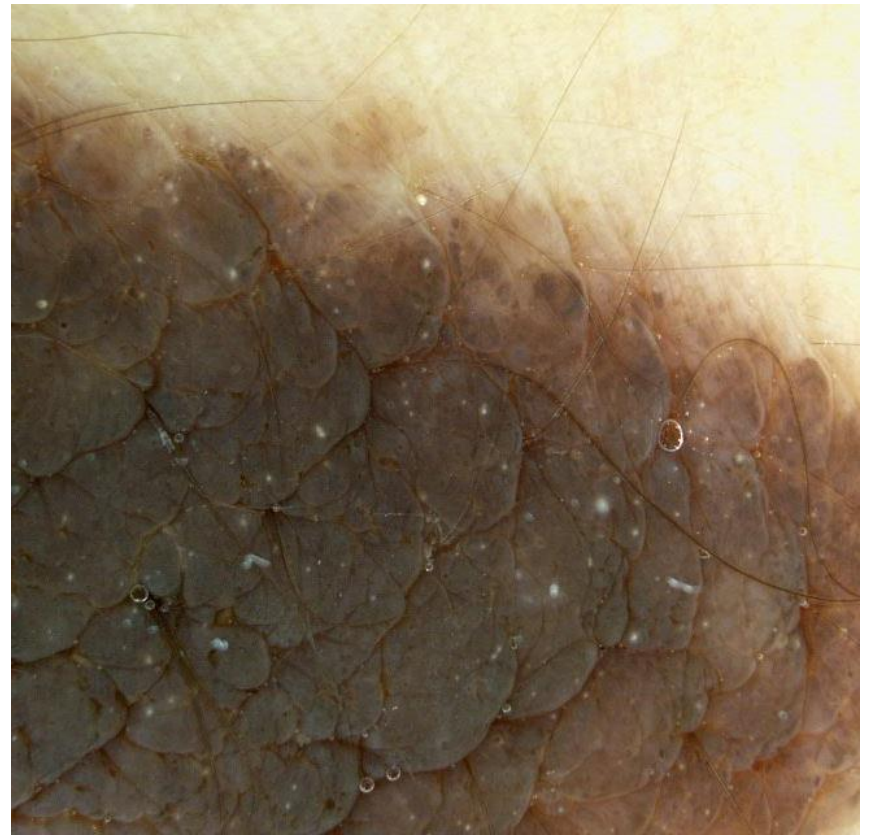
- Symmetrical structure
 - Often elevated
- Colour may be symmetrical or asymmetrical
 - Brown & black
- Various patterns
 - Clods
 - Central clods + reticular
 - Rarely, reticular +/- dots
 - Uniformly brown
 - Central hypopigmentation
- Terminal hairs
- Sometimes:
 - White clods (keratin cysts)
 - Orange clods
 - Brown circles
- “Aggregated globules”

True congenital naevi

Reticular



Globular pattern



True congenital naevi

Perifollicular hypopigmentation

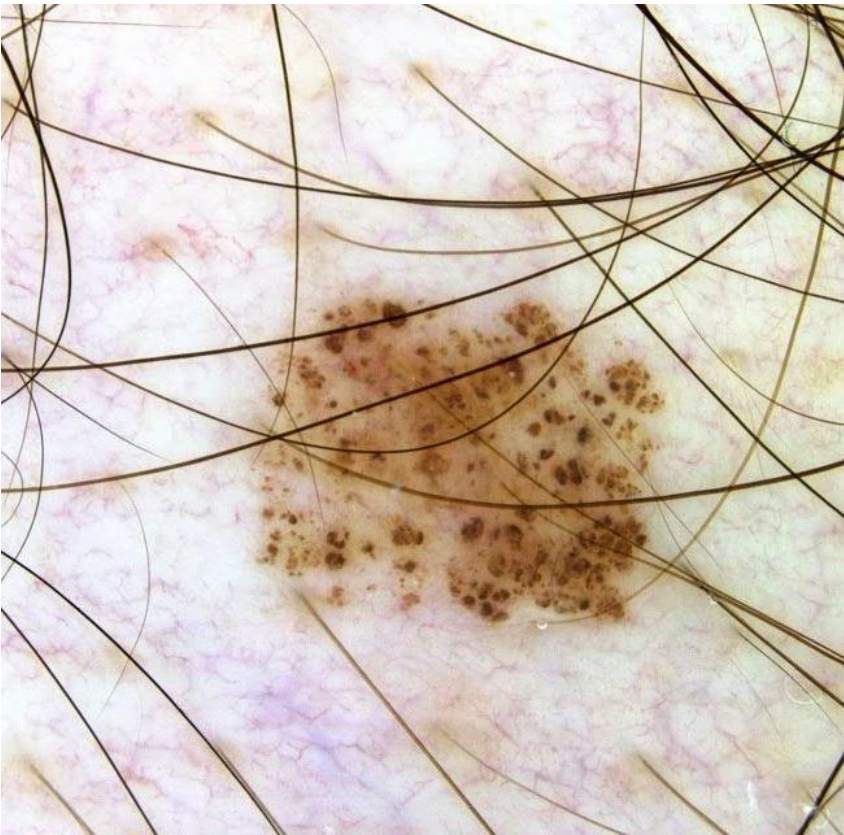


Clod or globular pattern



Childhood onset 'Congenital' naevi

Clod pattern



Brown structureless + hair



Childhood onset 'Congenital' naevi

Central hypopigmentation



Central hypopigmentation

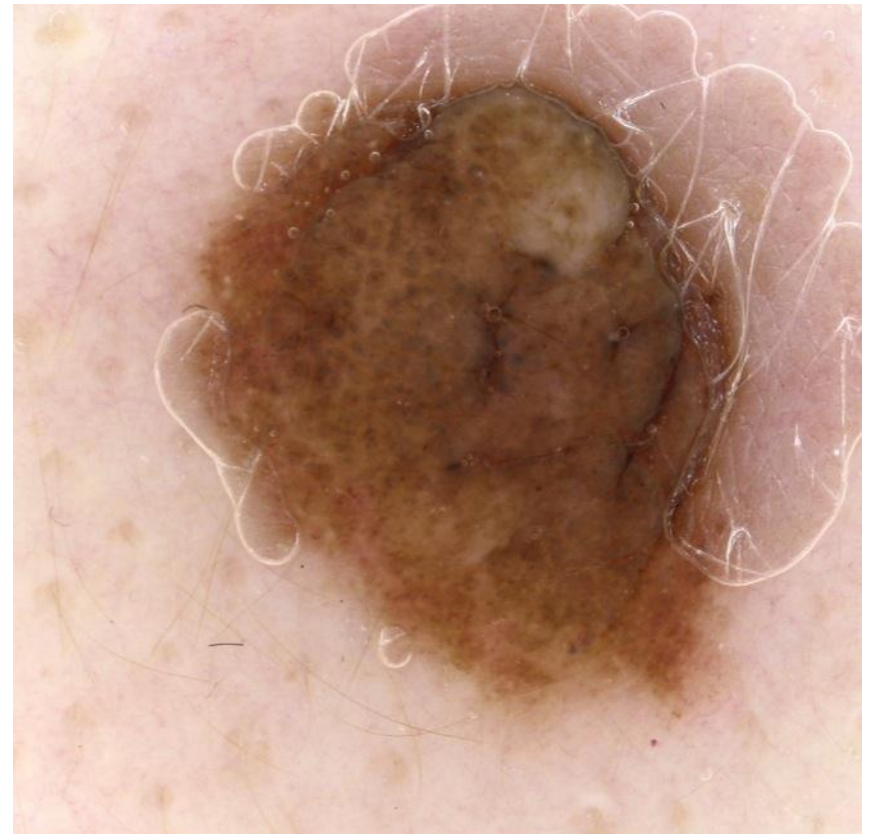


Childhood onset 'Congenital' naevi

Reticular + clods

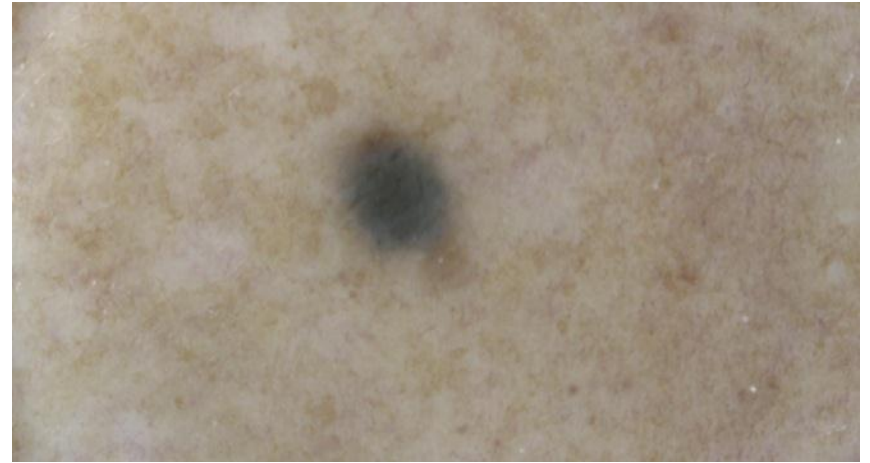


Clods + structureless



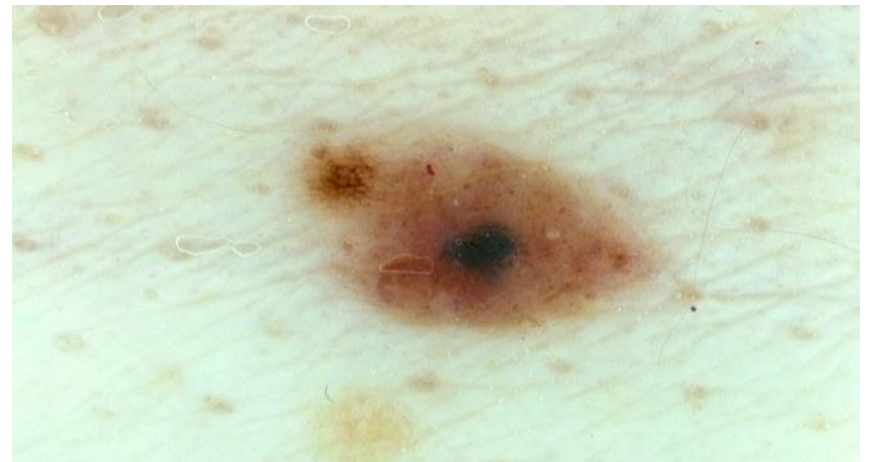
Blue naevus

- Structureless
- Variegate blue/gray
- May have brown periphery
- “Steel blue”



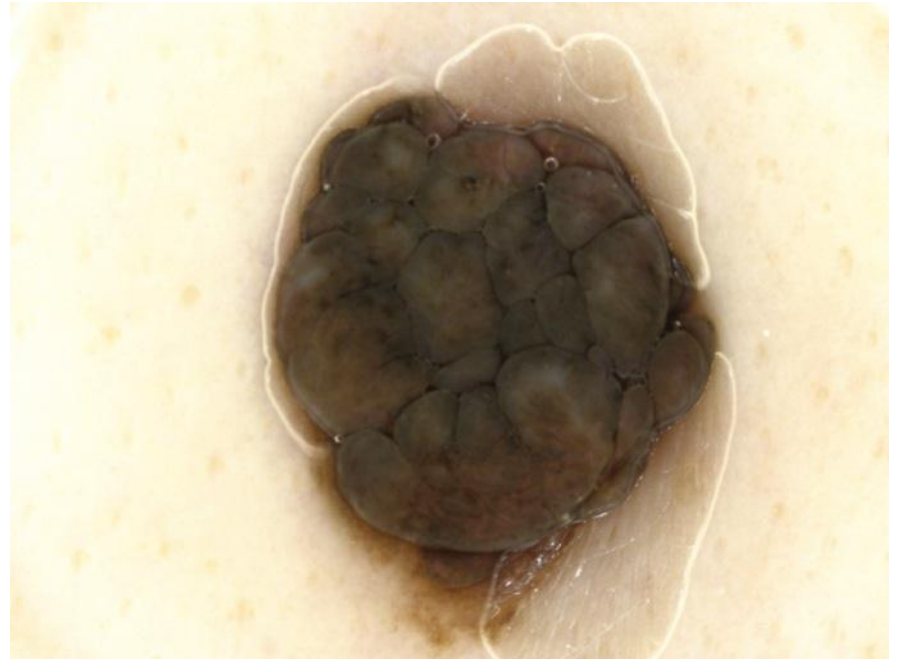
Combined congenital naevus

- Blue naevus + 'congenital' naevus
- Central blue clod or structureless area
- Peripheral lines or clods or both

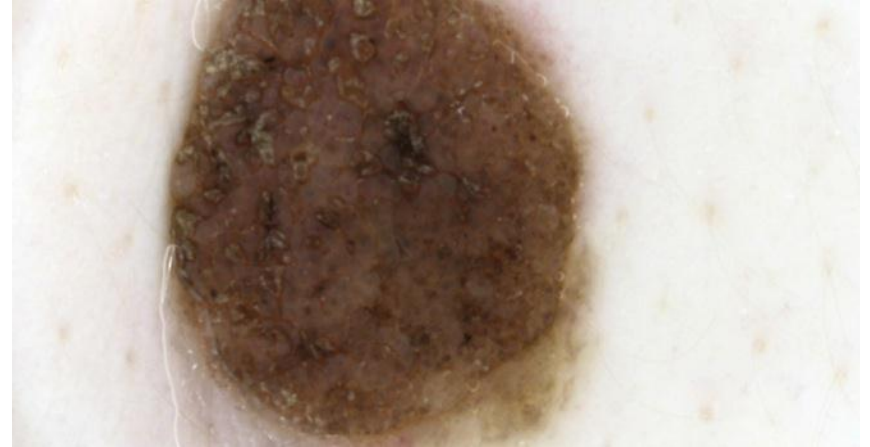


Unna or papillomatous naevus

- Polygonal skin-coloured or light-brown clods, or, structureless
- May have:
 - Small white clods
 - Small orange clods
 - Central curved vessels
- “Cobblestone pattern”
- “Milia-like cysts”
- “Comedo-like openings”

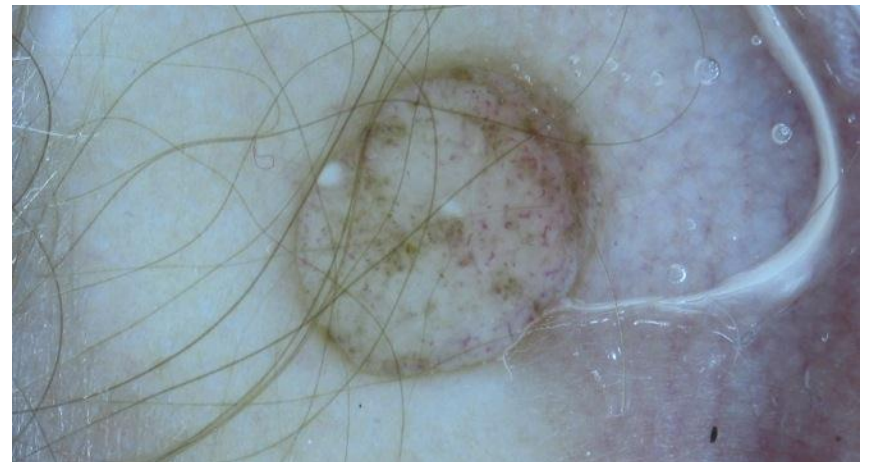
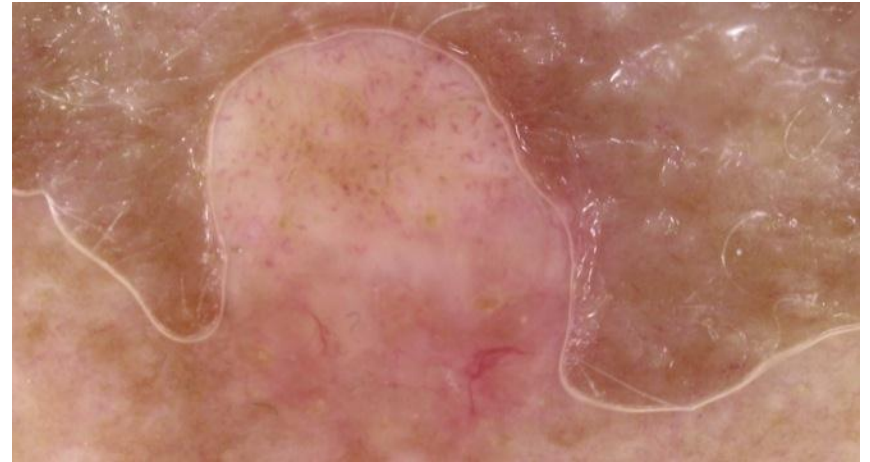


Unna or papillomatous naevus



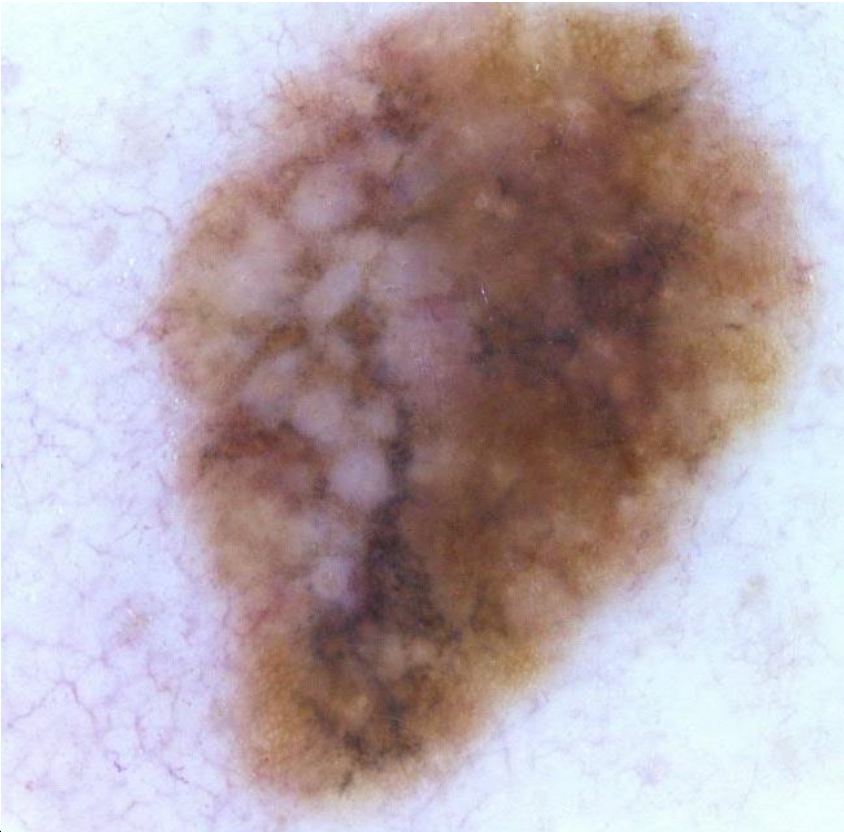
Miescher naevus

- Facial
- Like Unna naevus
- Circles instead of clods or structureless
- Often, terminal hairs

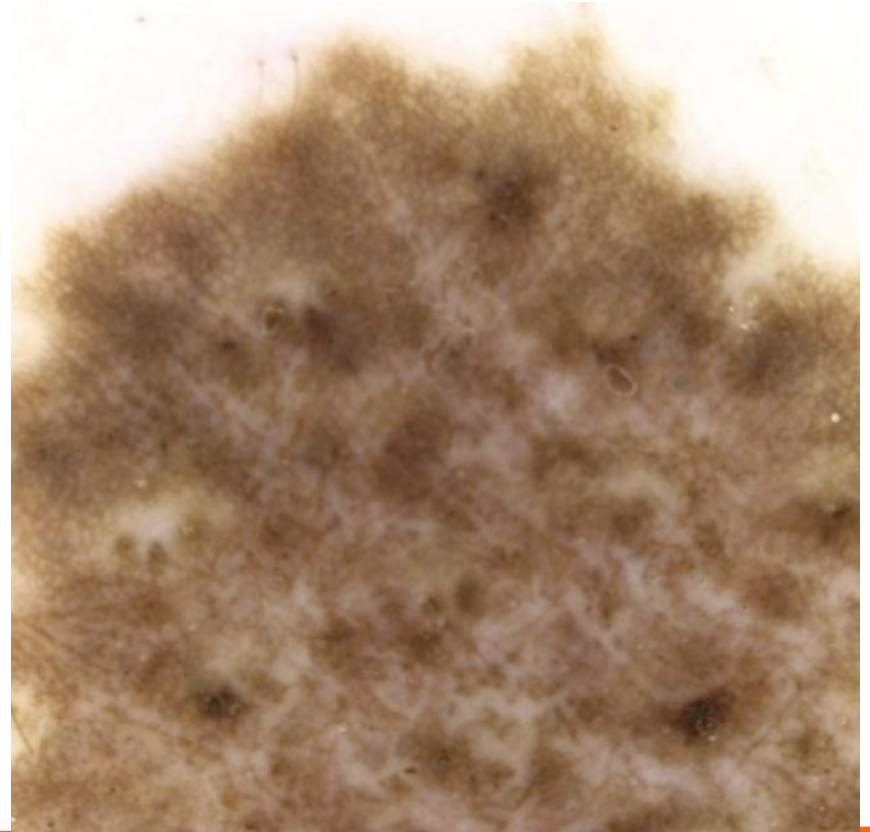


Which lesion should you excise?

A



B



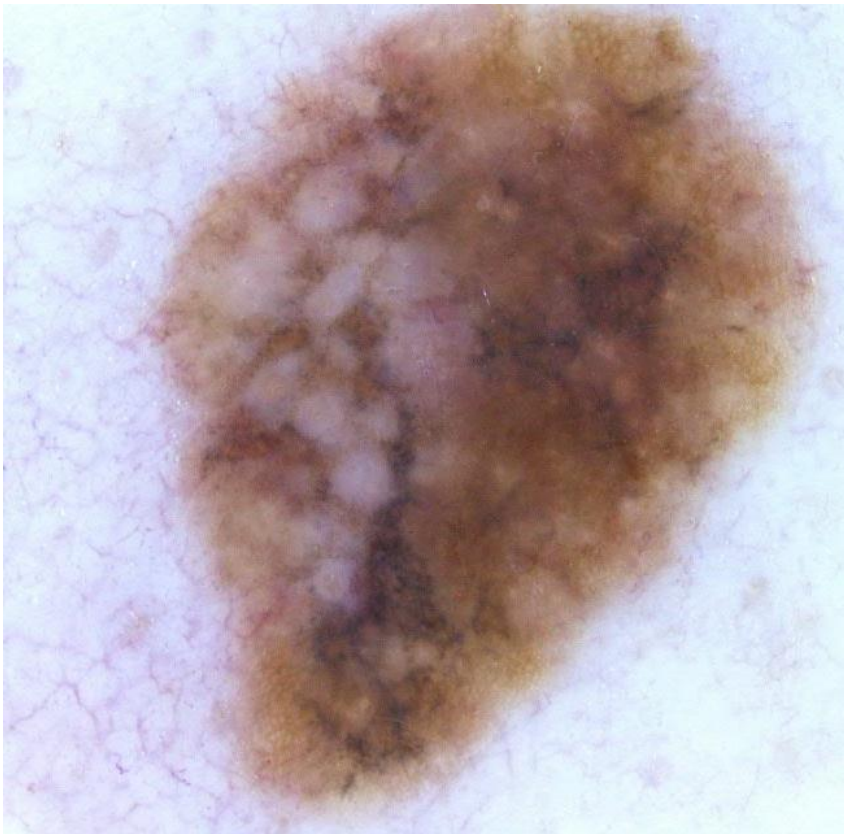
• A?

• B?

• Both?

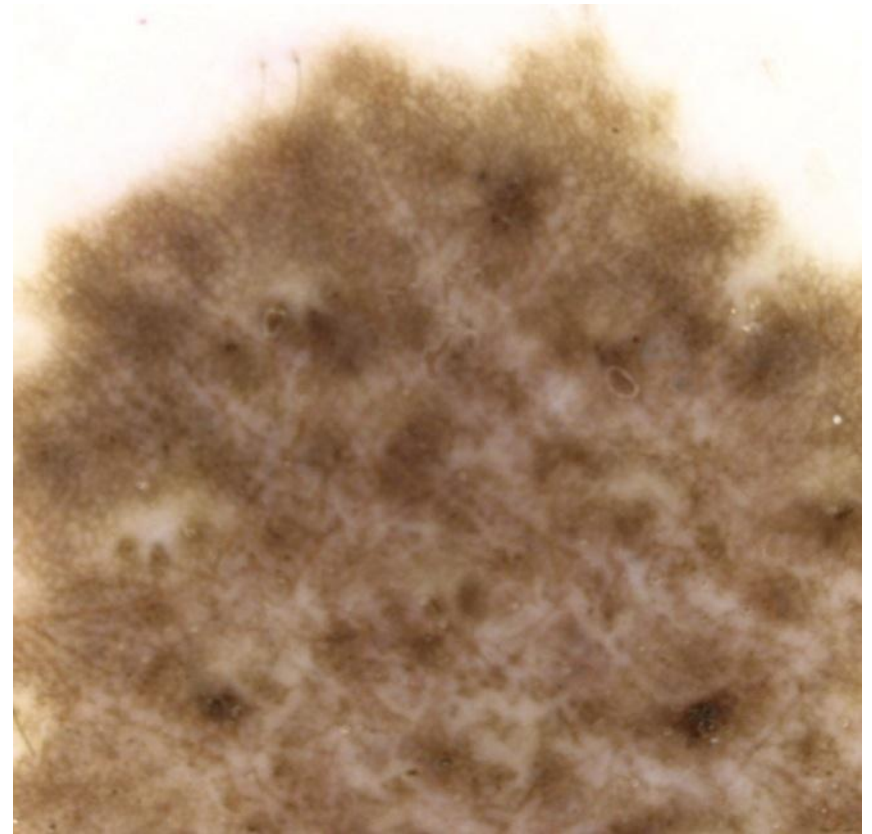
Excise A

Melanoma



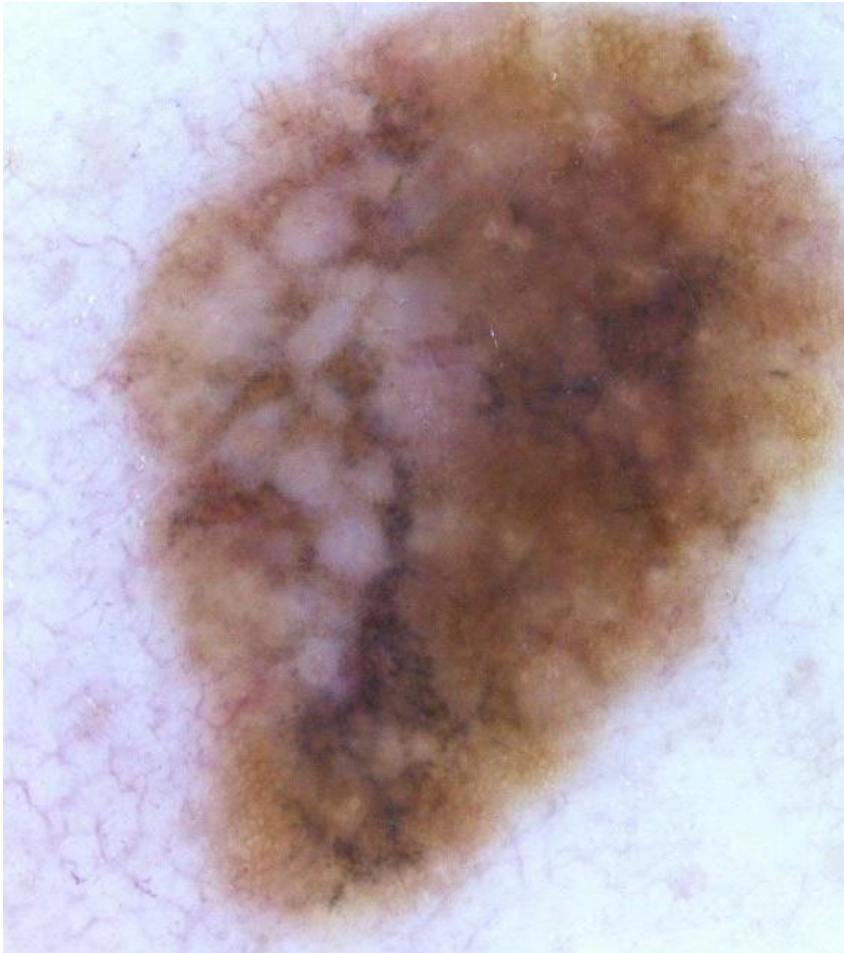
Asymmetrical structure

Congenital naevus



Symmetrical structure

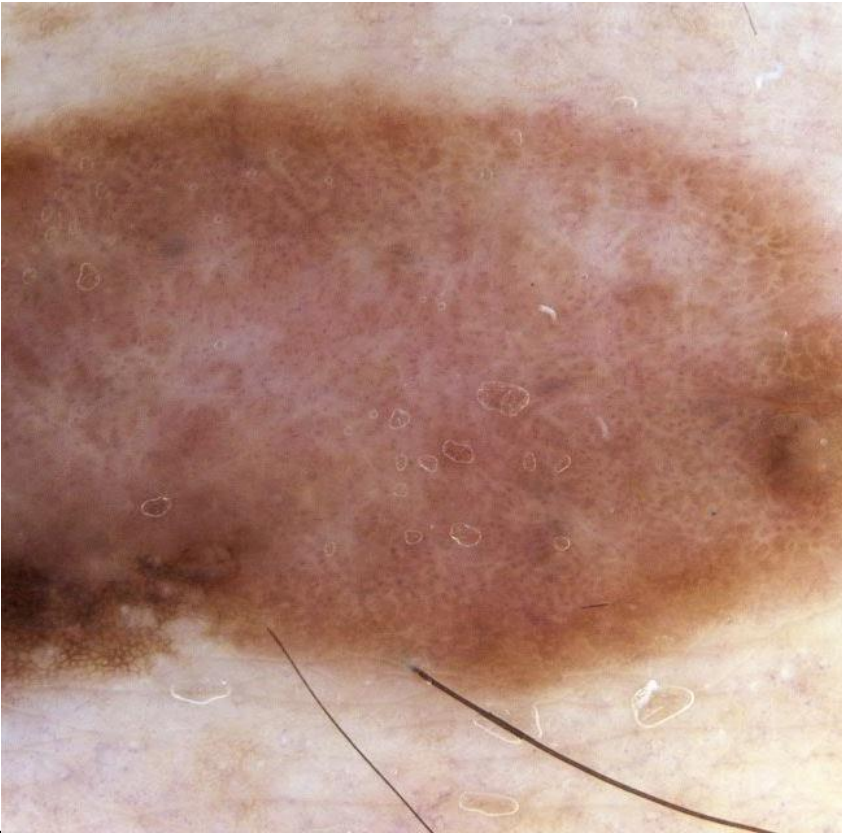
Melanoma



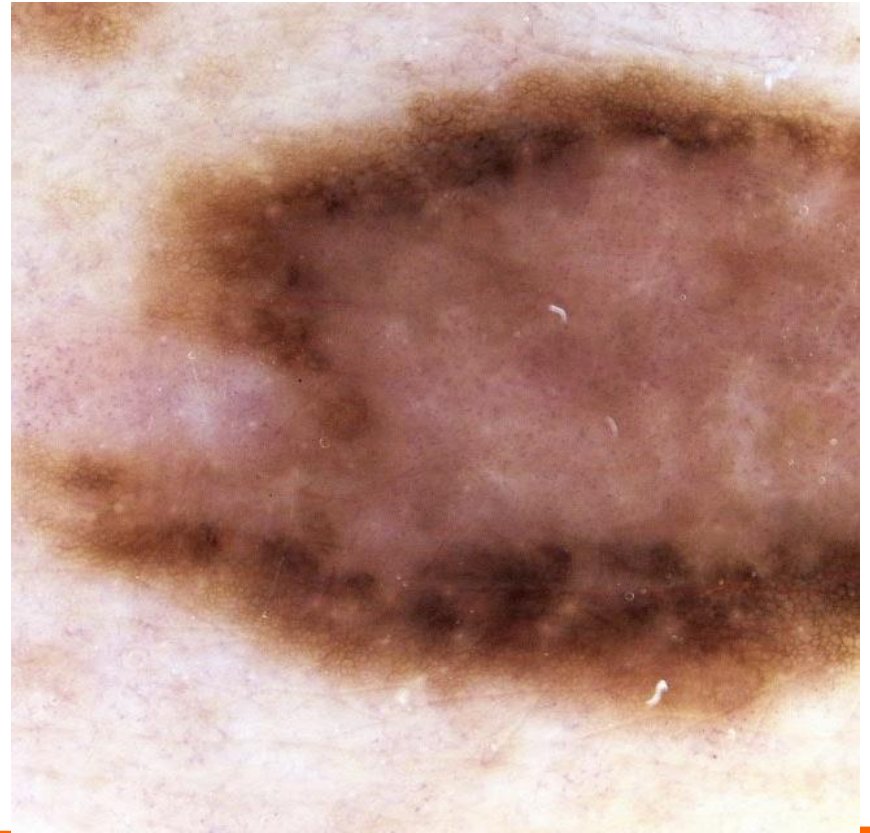
- Multicomponent
 - Lines / reticular
 - Dots
 - Clods / globules
 - Structureless areas
 - Multiple colours

Which lesion should you excise?

A



B



• A?

• B?

• Both?

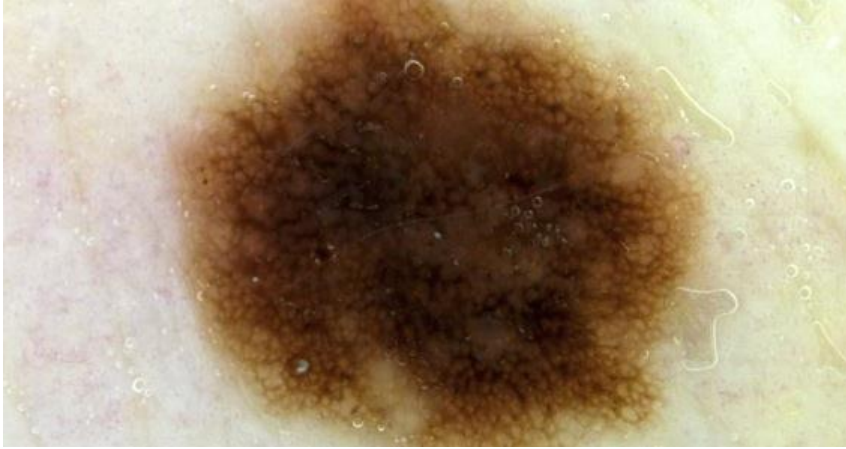
Excise both (same lesion!)



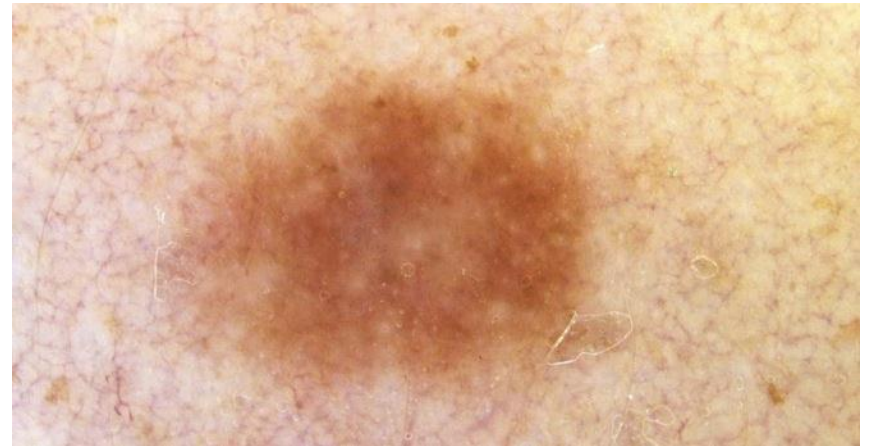
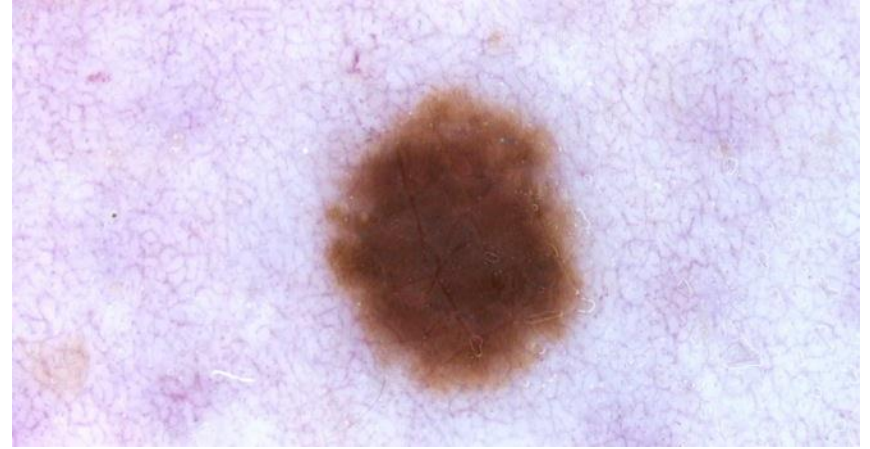
Melanocytic naevi: acquired 'Clark'

- Symmetrical structure
- Colour may be symmetrical or asymmetrical
 - Brown & black
- Various patterns
 - Reticular “pigment network”
 - Reticular + structureless
 - Reticular + dots
- Uniform brown
- Brown peripherally with central hyperpigmentation
- Variegate pigmentation
- Eccentric hyperpigmentation

Clark naevi: reticular



Clark naevi: uniform brown

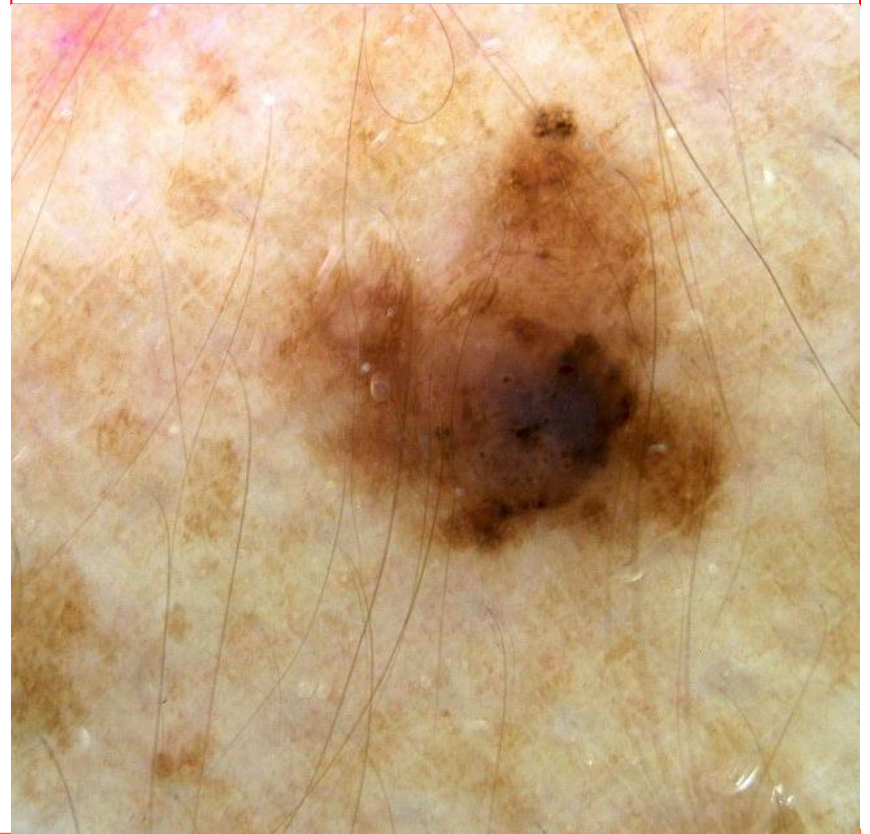


Excise which lesion?

A



B



• A?

• B?

• Both?

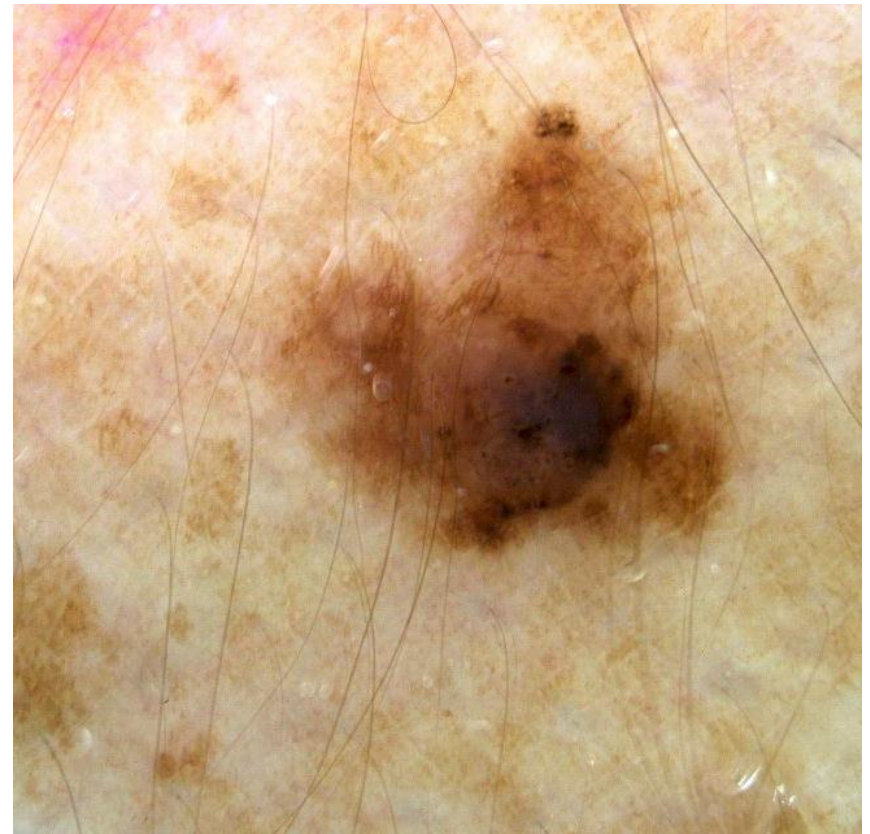
Excise B: both nearly structureless

Benign naevus



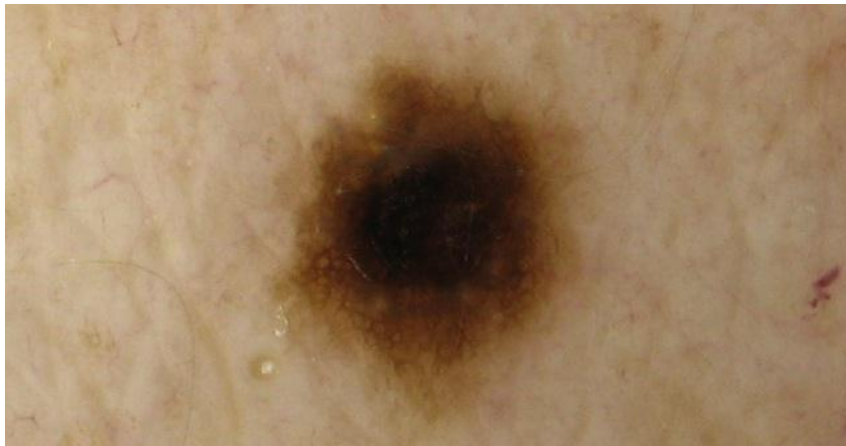
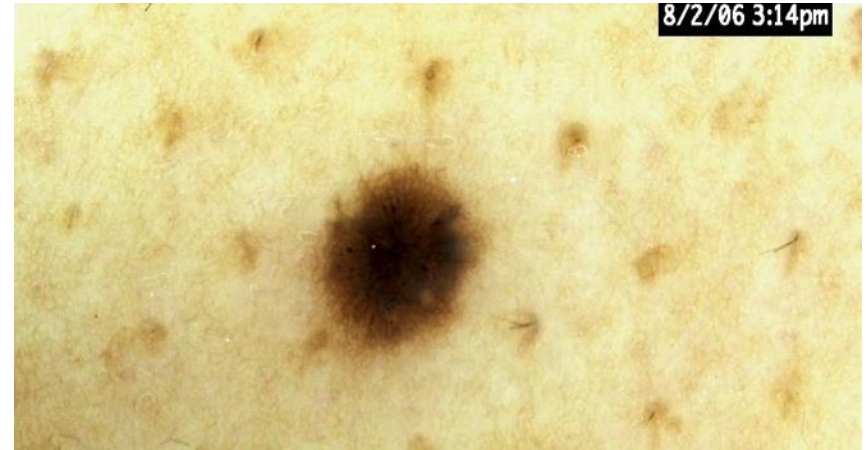
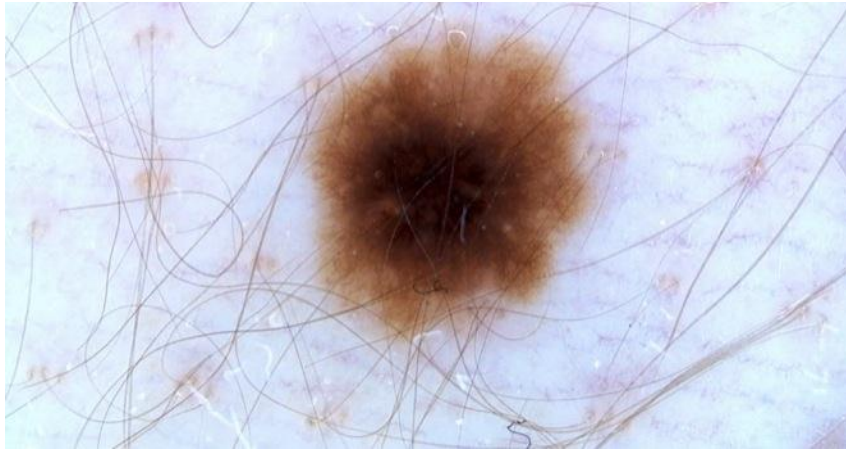
Uniform brown colour

Melanoma



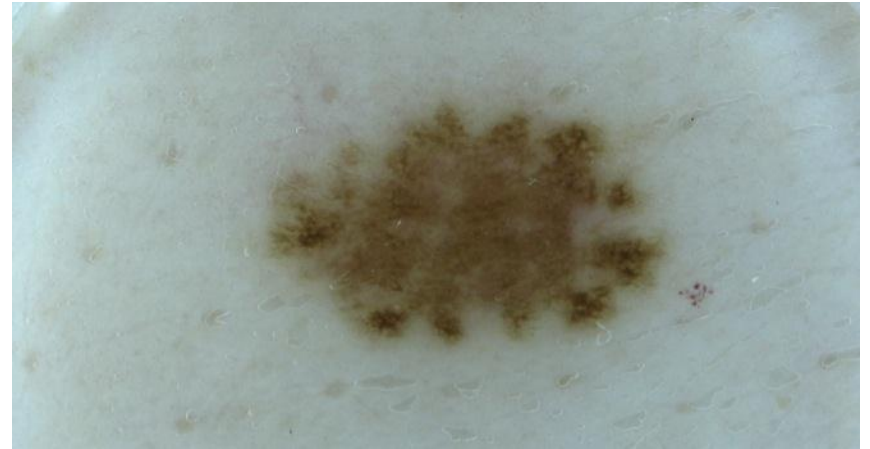
Variable colour

Clark naevi: central hyperpigmentation

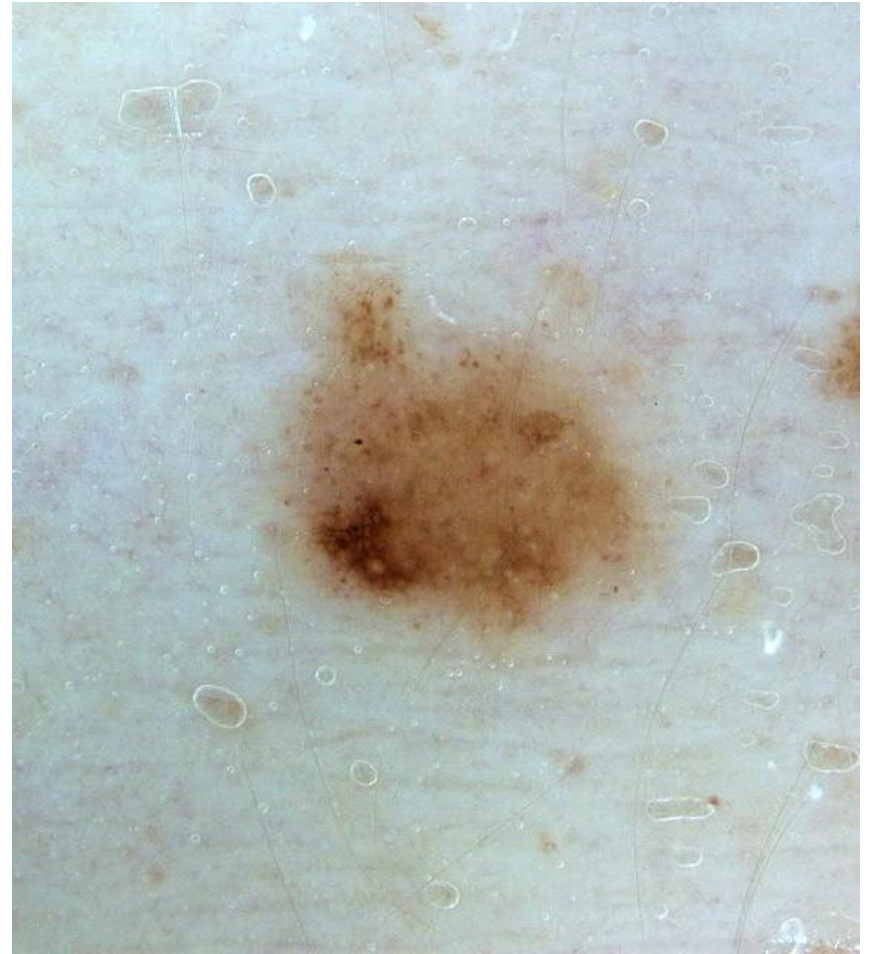


Small, dark lentiginous naevi, often radial lines

Clark naevi: variegate

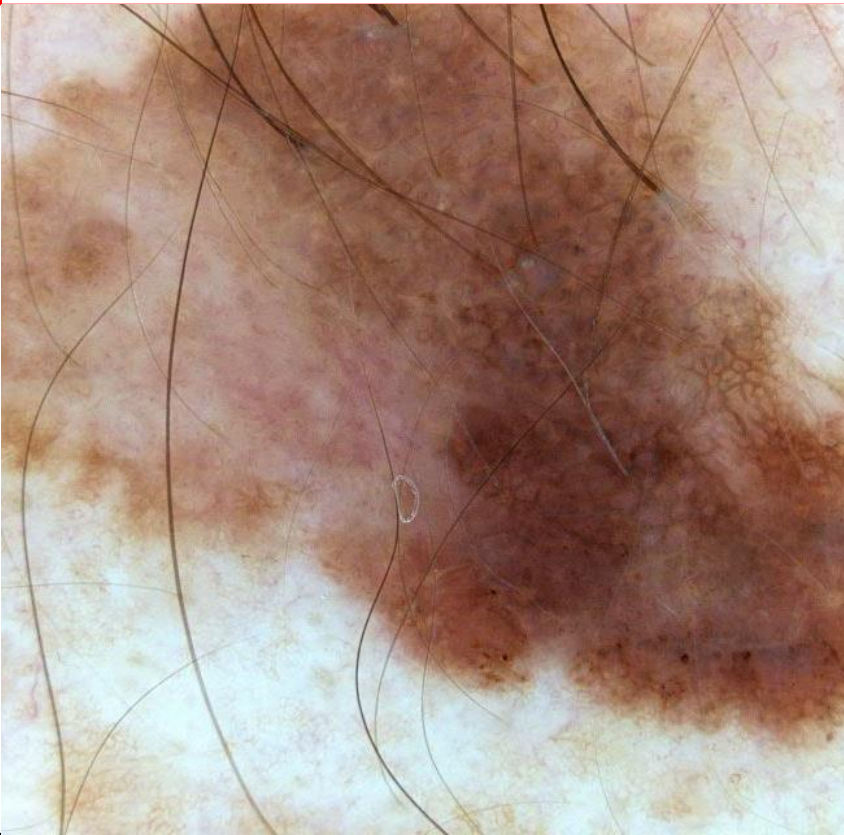


Clark naevi: eccentric pigmentation



Excise which one of these lesions?

A



B



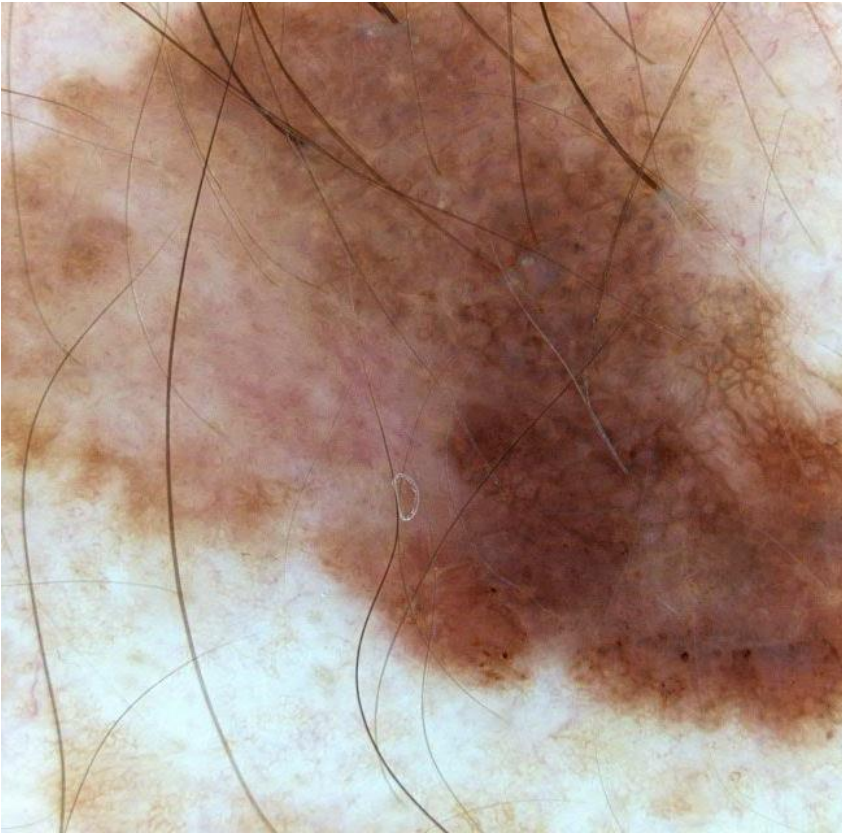
• A?

• B?

• Both?

Excise A & watch B

Melanoma



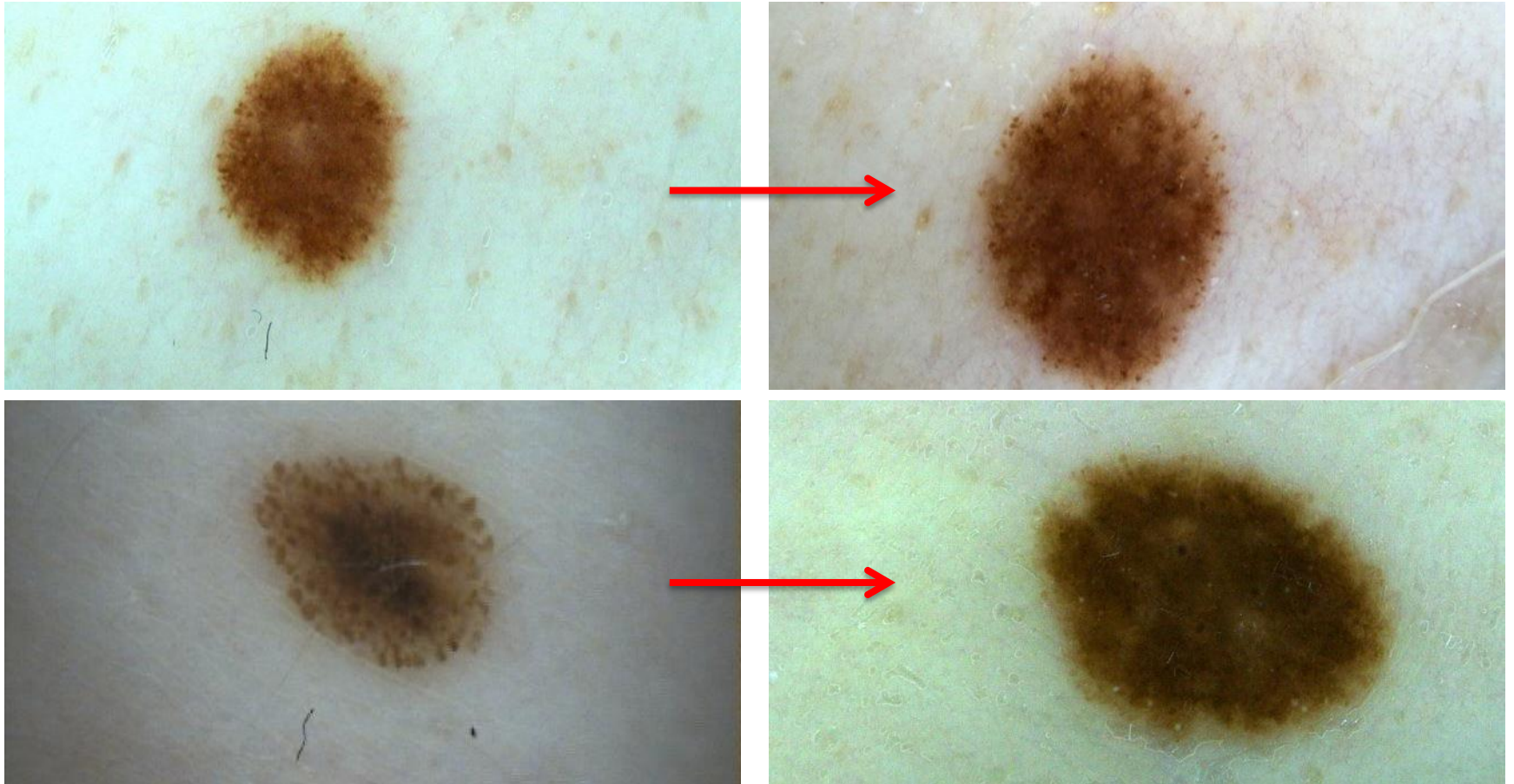
Multicomponent structure

Dysplastic (benign) naevus



Reticular, variegate colour

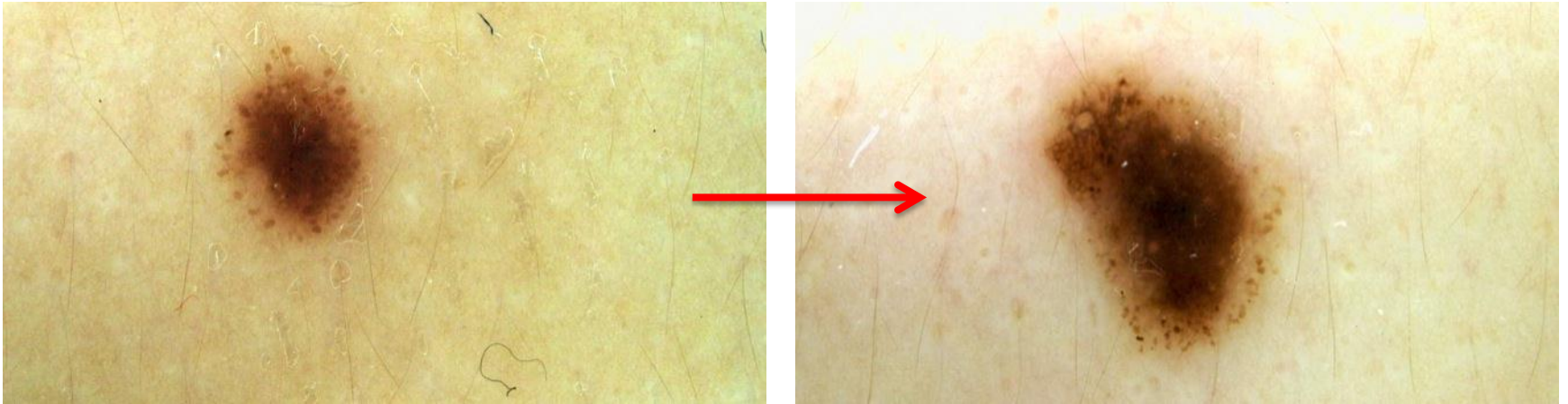
Clark naevi: peripheral dots/clods



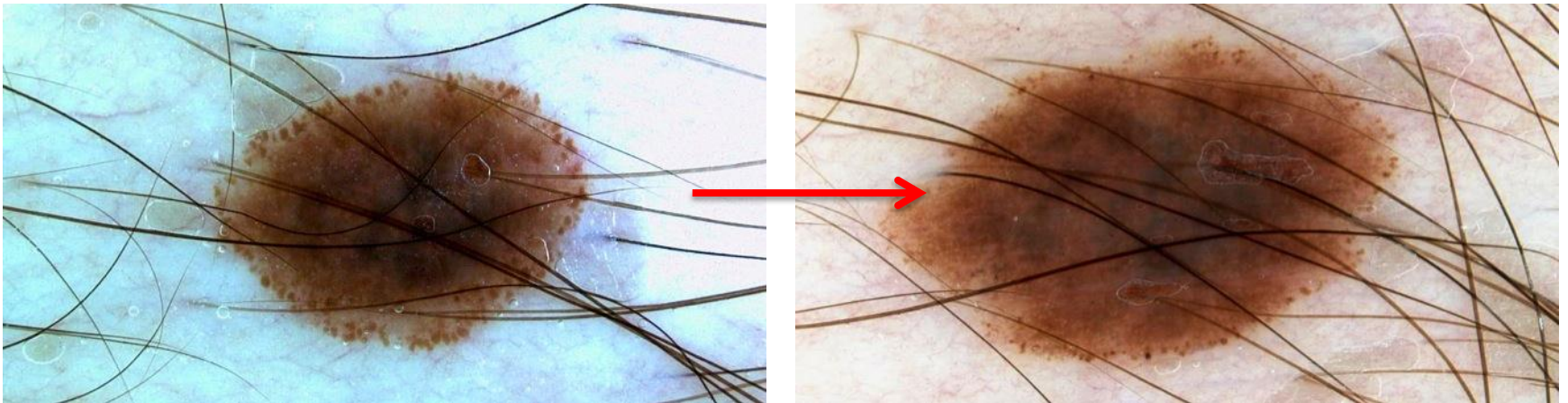
Peripheral dots/clods indicate lesion is enlarging

Excise which growing lesion?

A

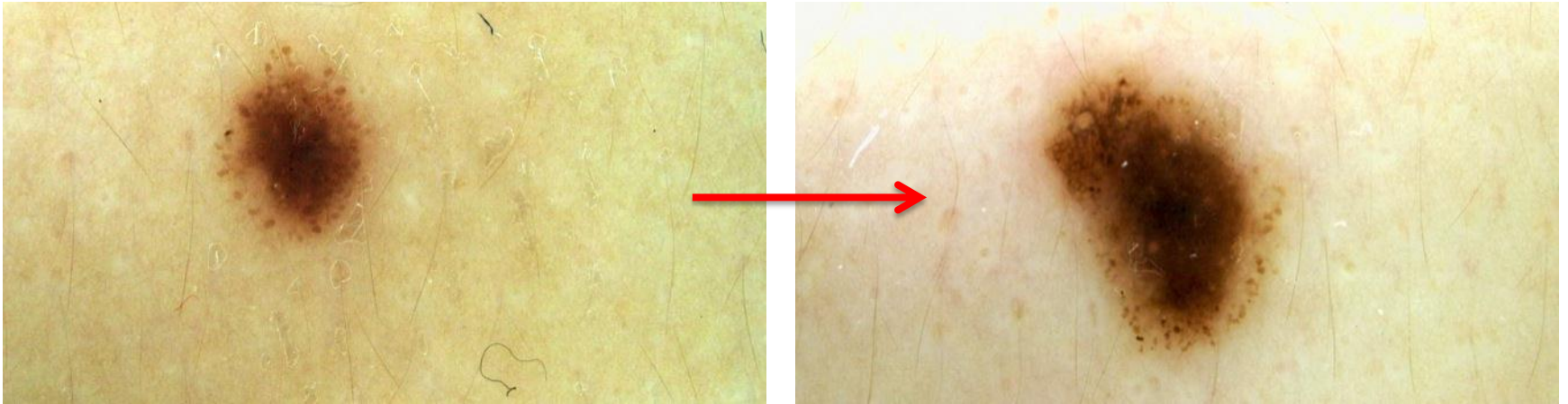


B

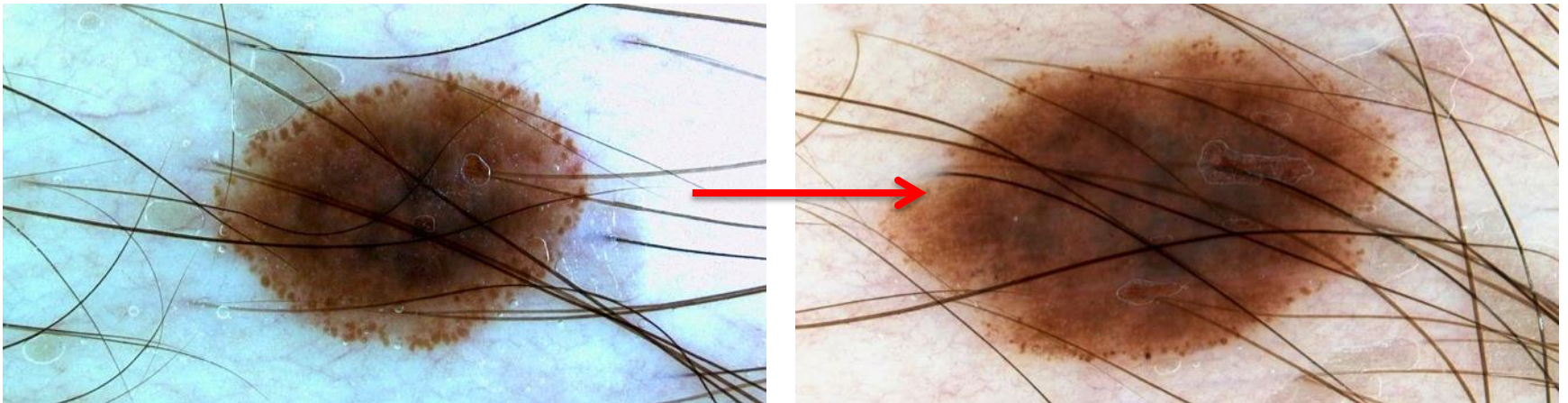


Excise A – asymmetrical growth

A

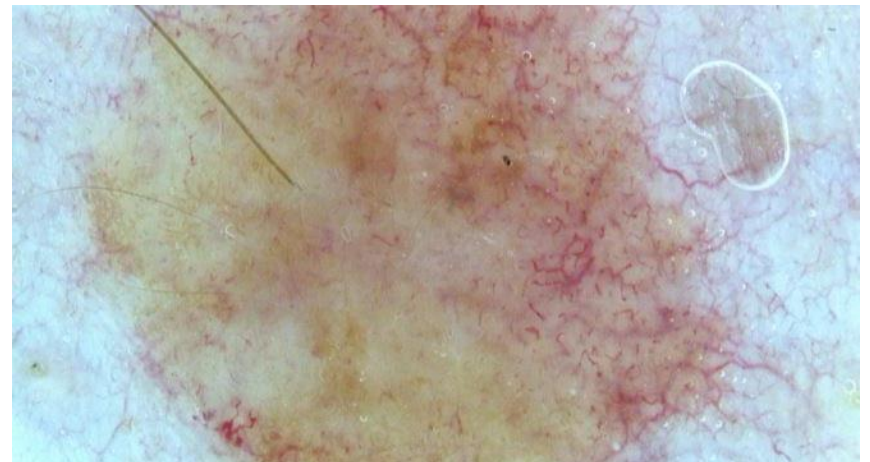
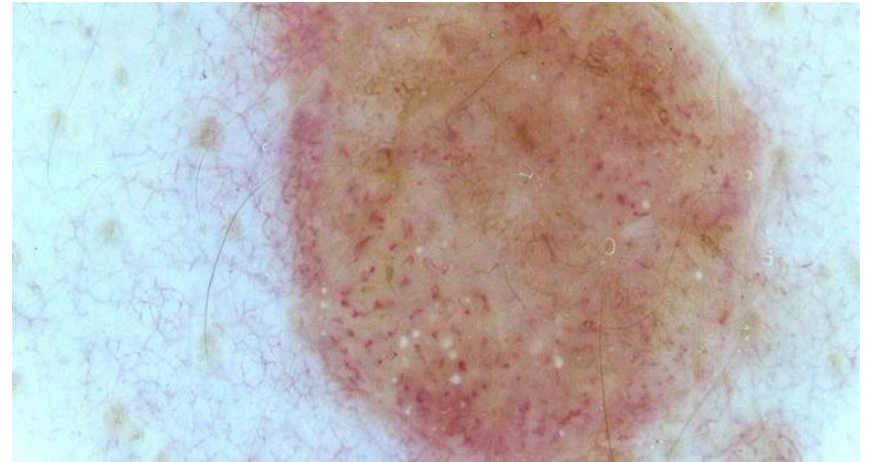


B



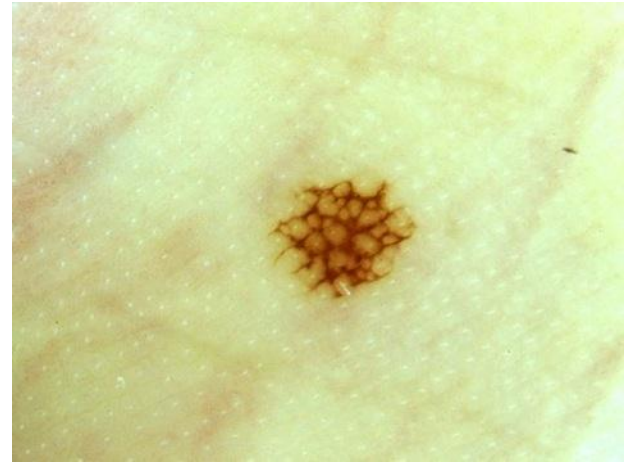
Clark naevi: vascular pattern

- Red dots
 - Short straight or curved lines
- “comma vessels”



Acral naevus

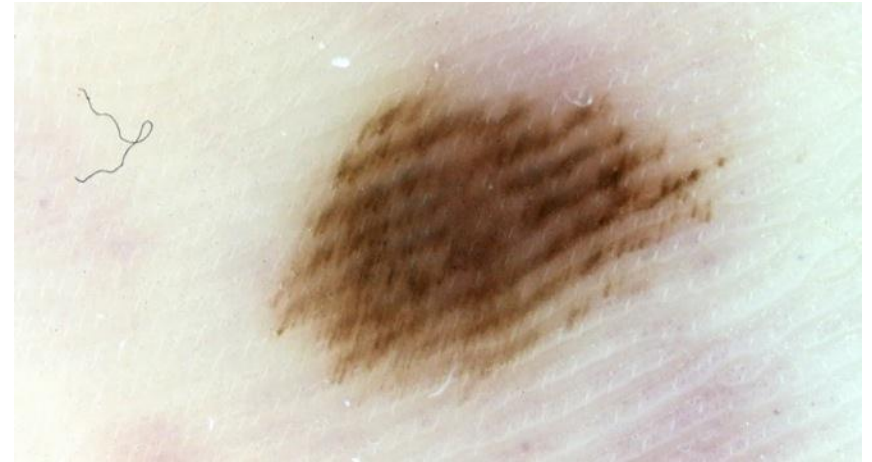
- Parallel lines in furrows
- Various subtypes



Acral naevus

- Parallel lines that cross ridges and furrows of acral skin at an oblique angle

“Fibrillar pattern”



Acral naevus: which is furrow?



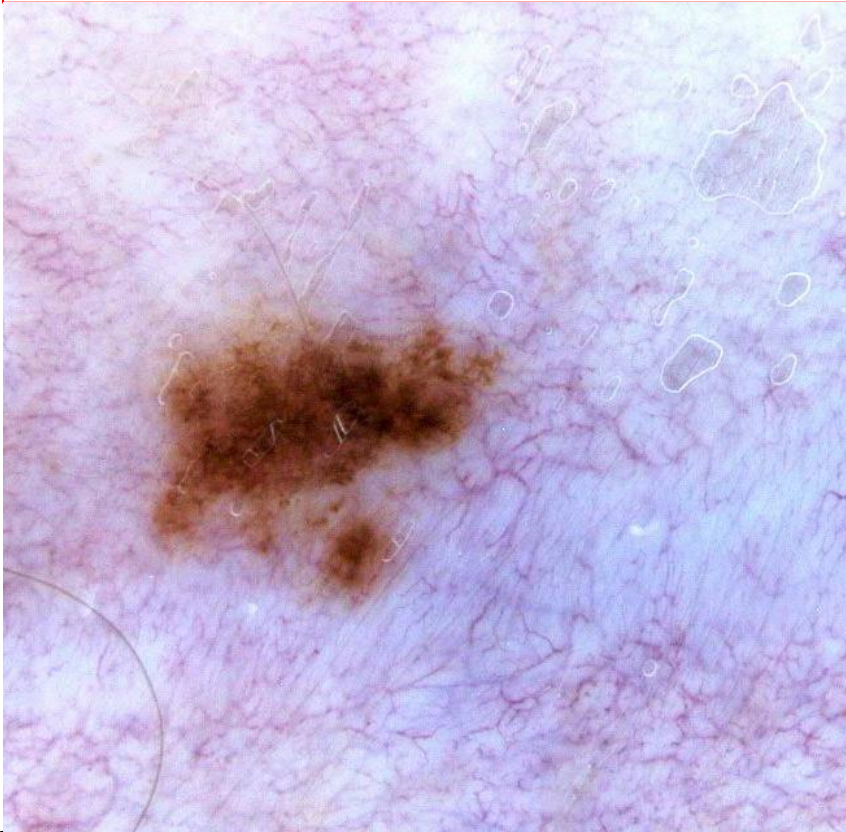
Recurrent naevus

- Scar: hypopigmented structureless zone
- Odd looking naevus: lines, clods, pseudopods

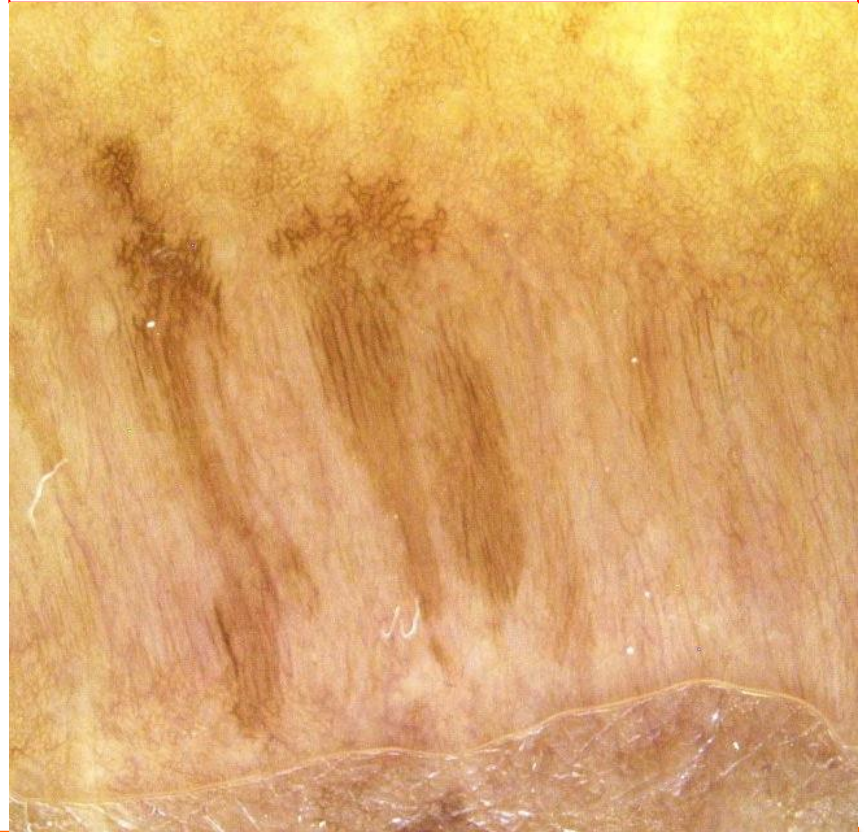


Which one is melanoma?

A



B

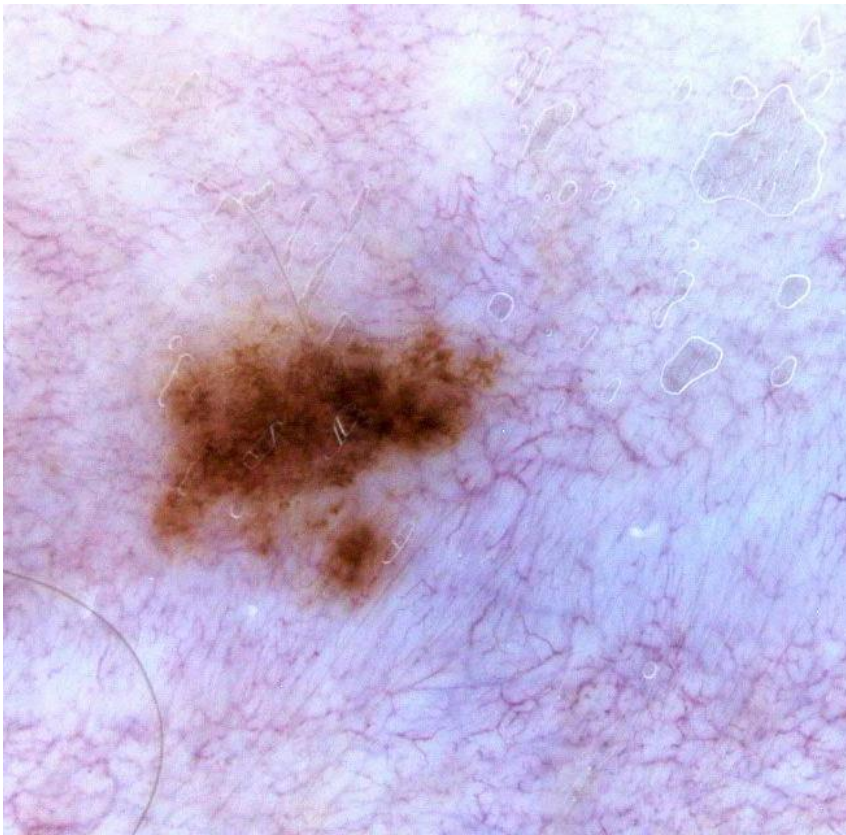


• A?

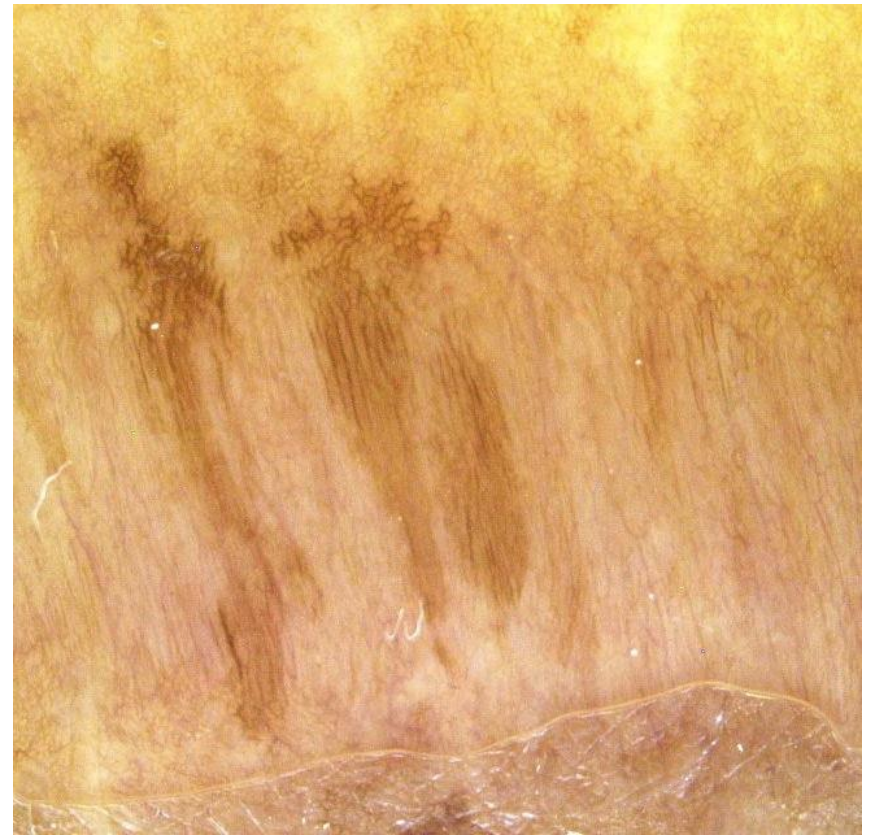
• B?

• Both?

A is recurrent melanoma



Previous melanoma, irregular



Previous naevus, regular

Spitz naevus: classic

- Unpigmented papule
- Skin-coloured clods
- White lines
- Red dots or clods
- “Inverse” or “negative pigment network”



Spitz naevus: pigmented

- Peripheral brown clods
- Central brown / gray clods or structureless
- White lines
- May have radial pattern



Pigmented Spitz naevus

2010

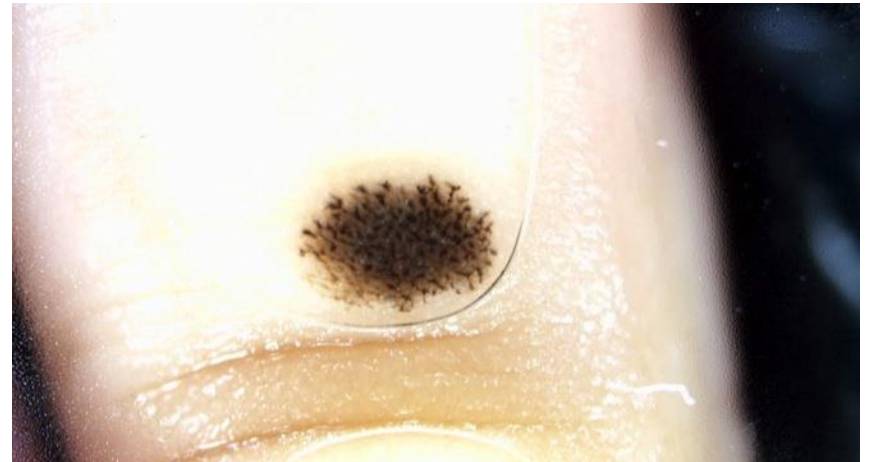


2012



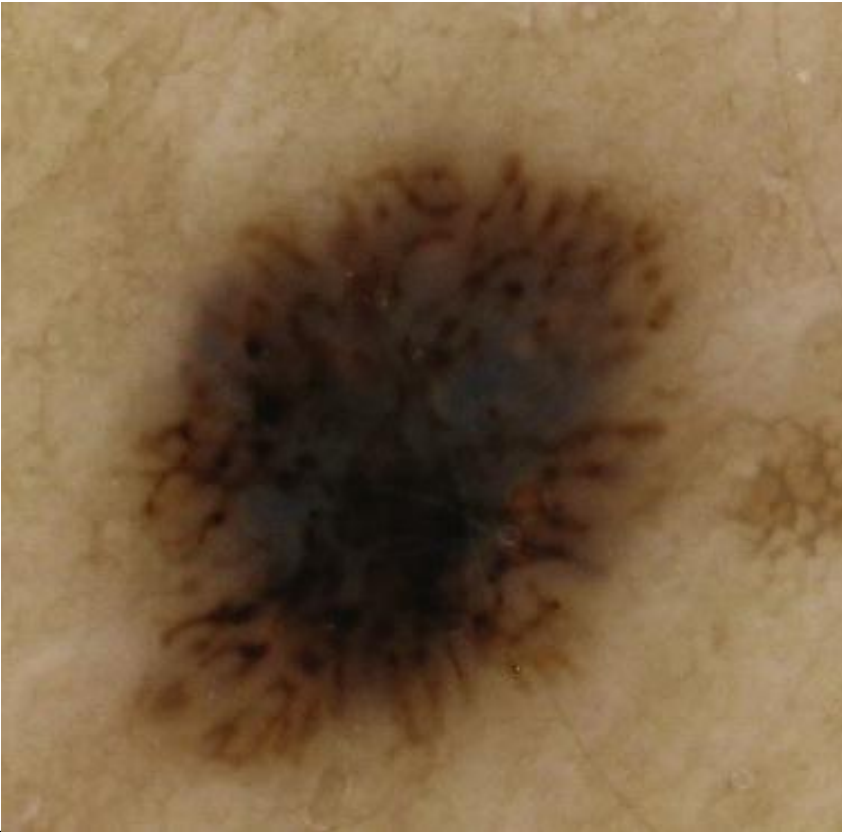
Reed naevus

- Centre structureless or clods
- Dark brown to black
- Radial lines or pseudopods
- “Starburst pattern”



Which lesion should you excise?

A



B



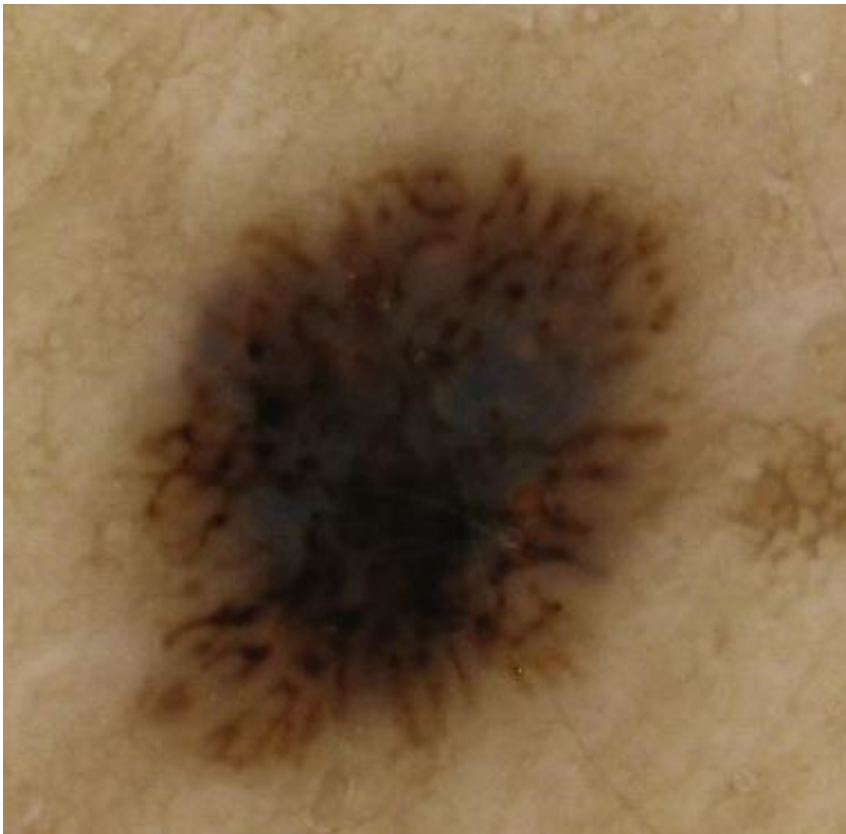
• A?

• B?

• Both?

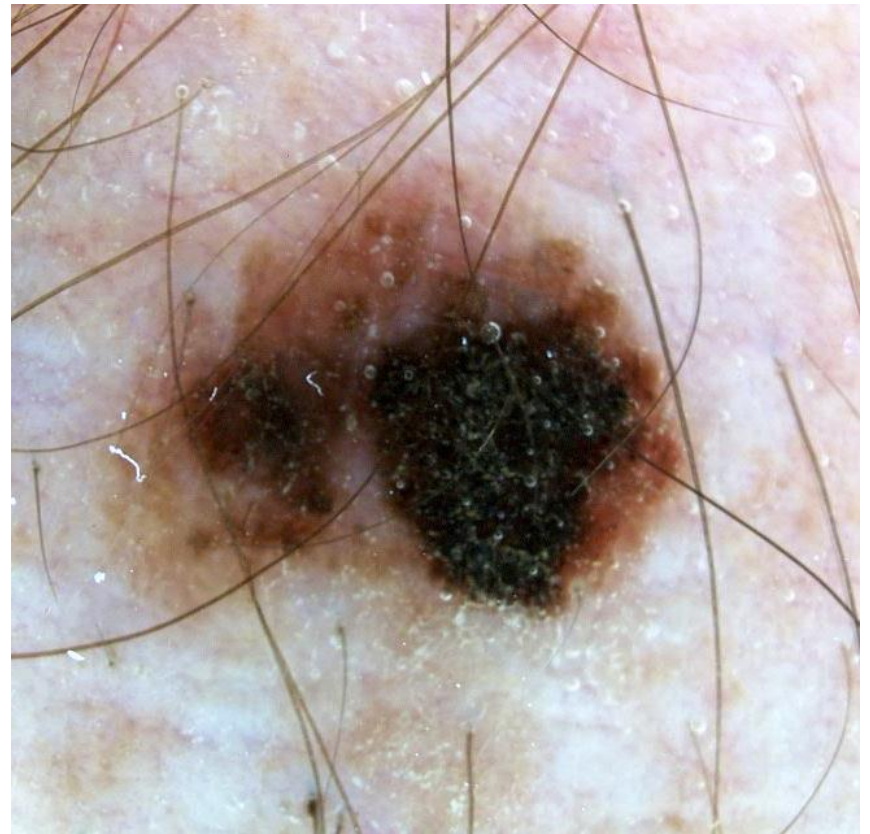
Both but $B > A$

Reed or pigmented Spitz naevus



Radial pattern

Melanoma

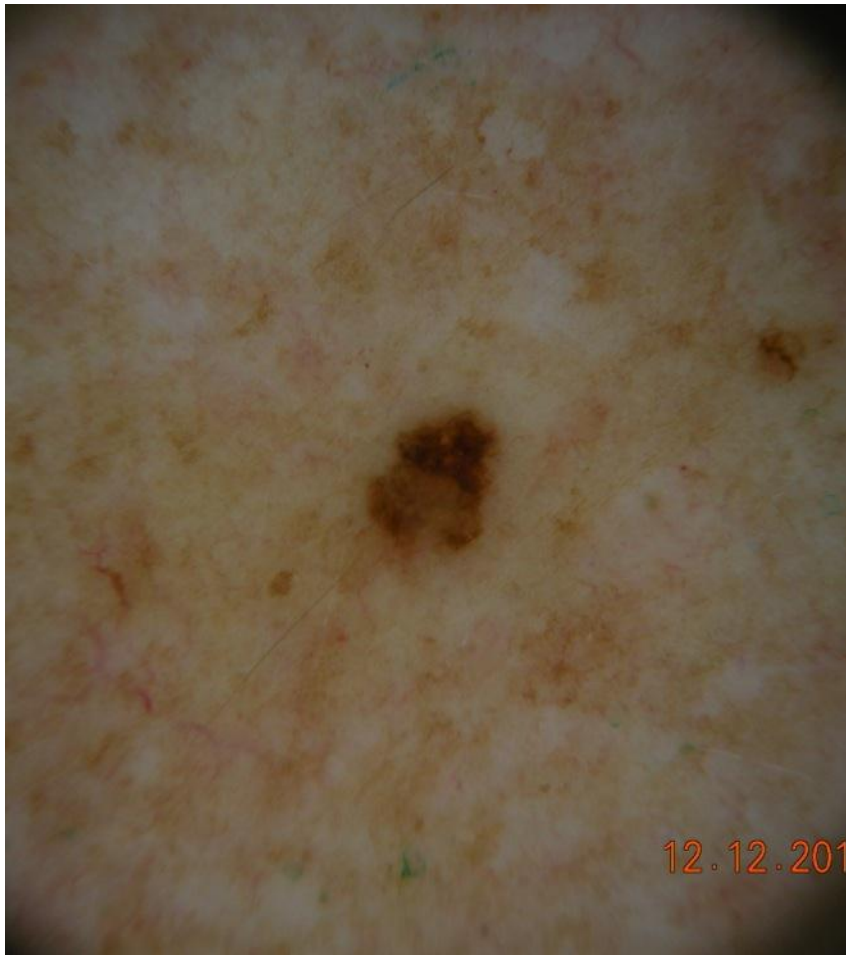


Structureless pattern

Melanoma

- Any pattern, any colour
- The more patterns and the more colours, the more likely that it's melanoma
- Asymmetry of structure (chaos) + clues

Early diagnosis of melanoma



8 clues to melanoma

1. Eccentric structureless zones of any colour
2. Gray circles, lines, dots, clods
3. Black dots or clods at periphery
4. Focal pseudopods or radial lines at periphery
5. White lines
6. Thick reticular lines
7. Polymorphous vessels
8. Parallel lines on the ridges (acral lesions only)

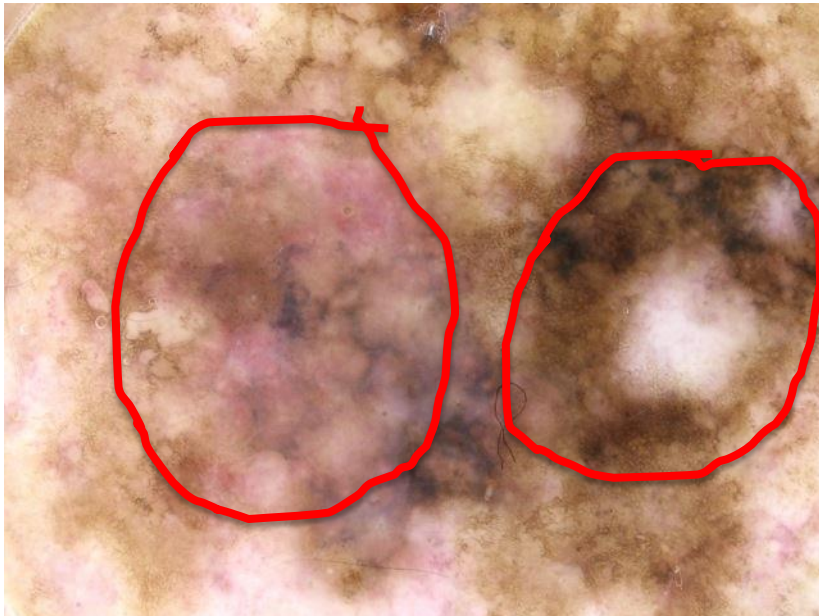
Eccentric structureless zones of any colour

- “Irregular blotch”
(if black)
- “Blue-white veil”
- “Blue veil”



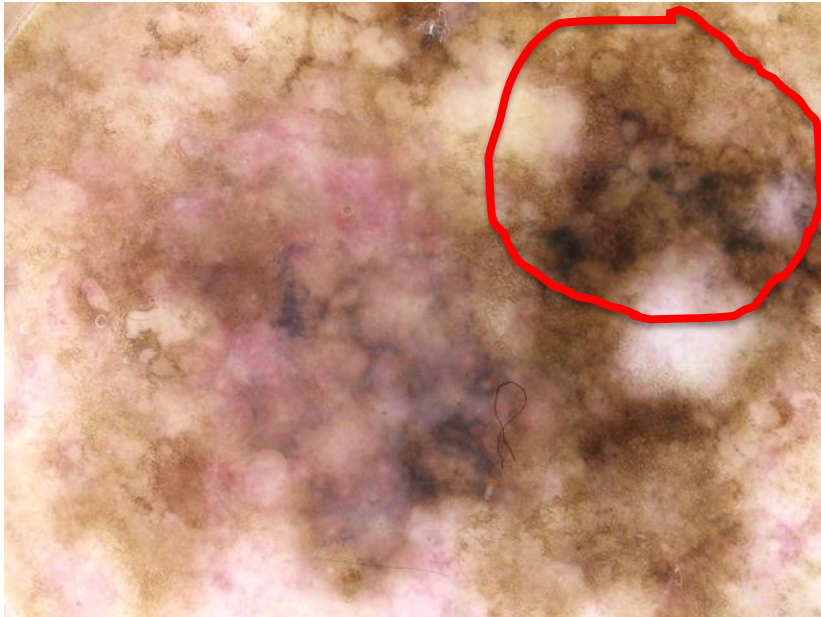
Eccentric structureless zones of any colour

- “Scar-like depigmentation”
- “Milky-red globules”

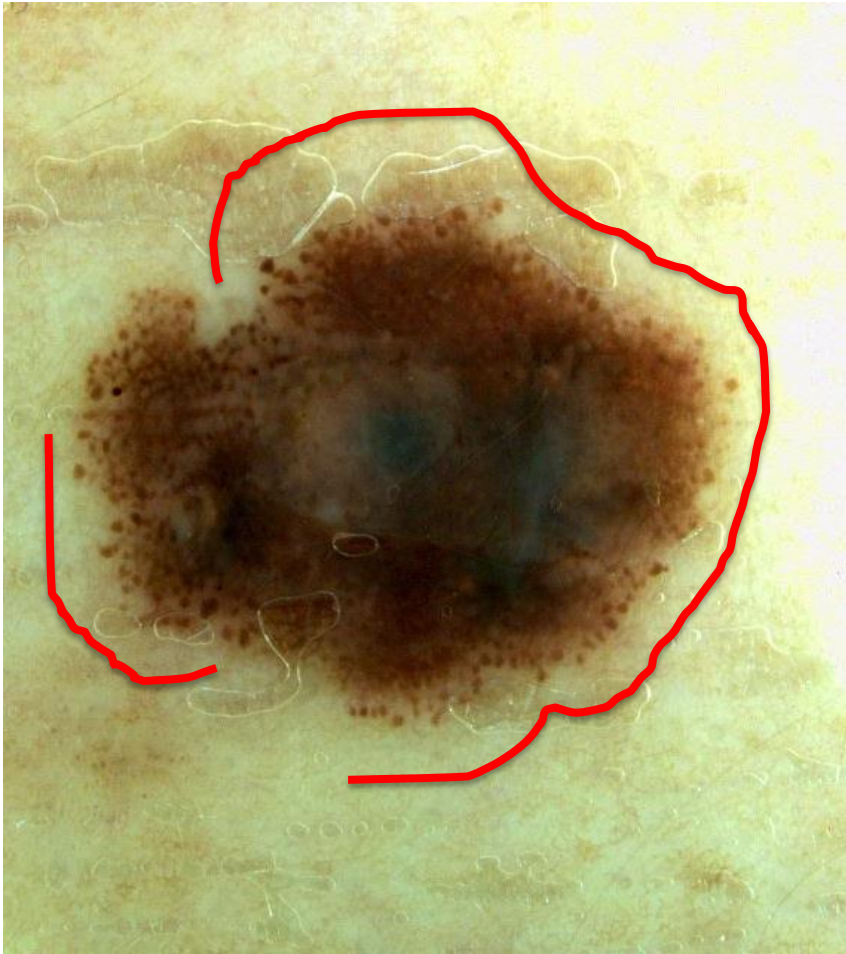


Gray circles, lines, dots, clods

- “Annular granular pattern”
- “Peppering”

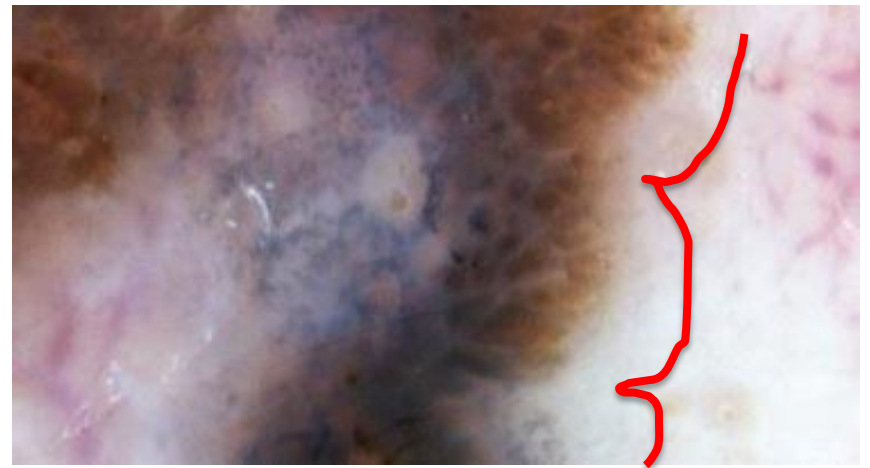
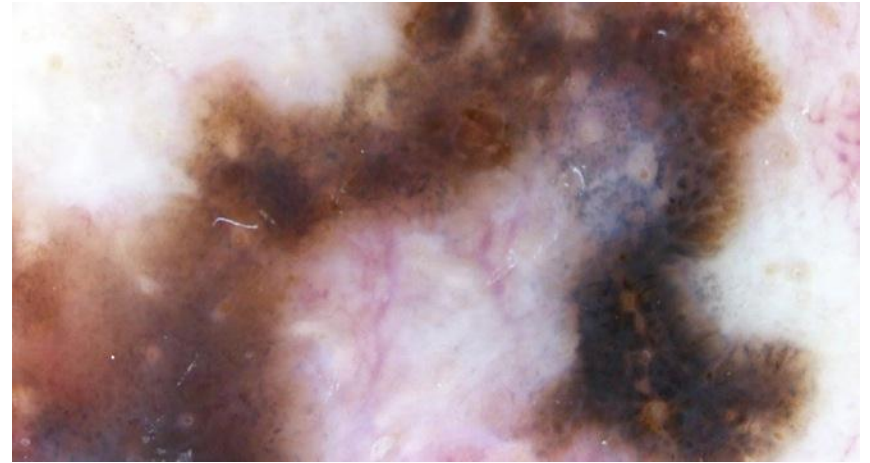


Black dots or clods at periphery



Focal pseudopods or radial lines at periphery

- “Peripheral streaks”
- “Radial streaming”



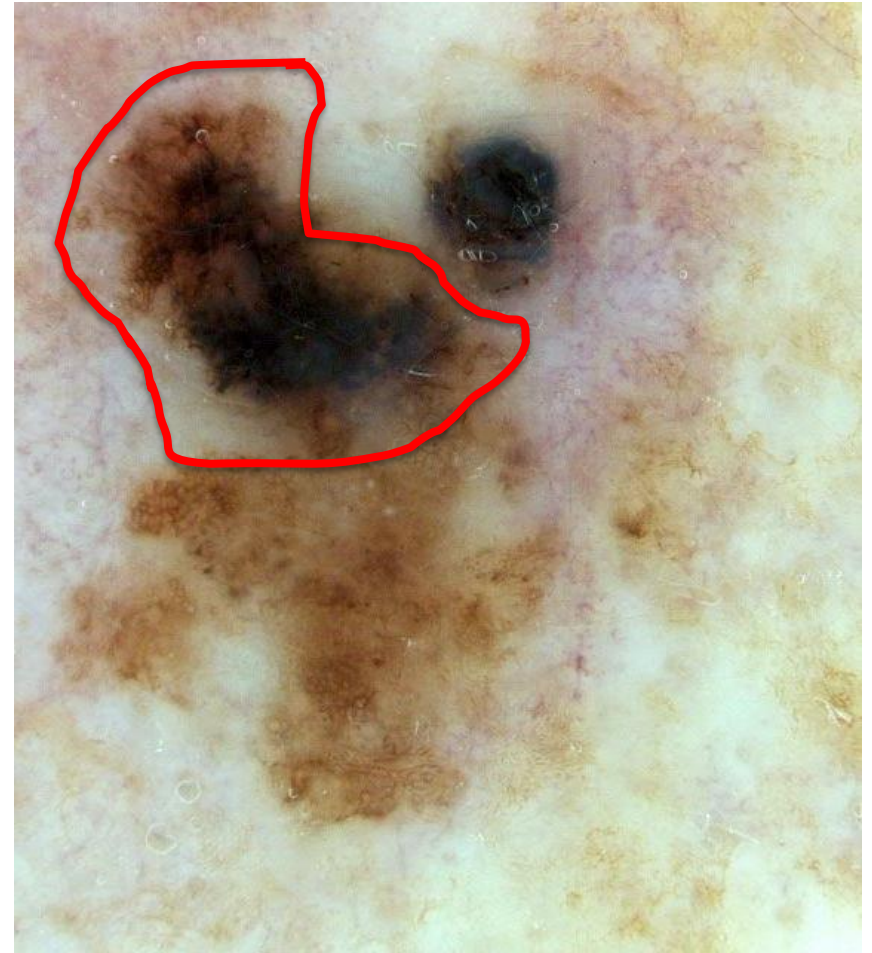
White lines

- “Chrysalis”
“chrysalids”
“crystalline”
- More obvious on polarised dermatoscopy
- Often perpendicular
- The lines must be whiter than surrounding skin
- “Inverse” or “negative pigment network”
- “Reticular depigmentation”

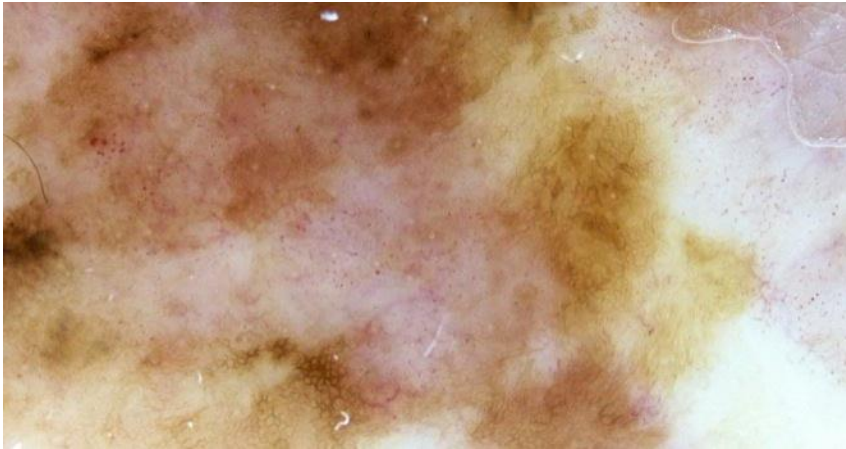


Thick reticular lines

- “Atypical pigment network”
- “Broadened pigment network”

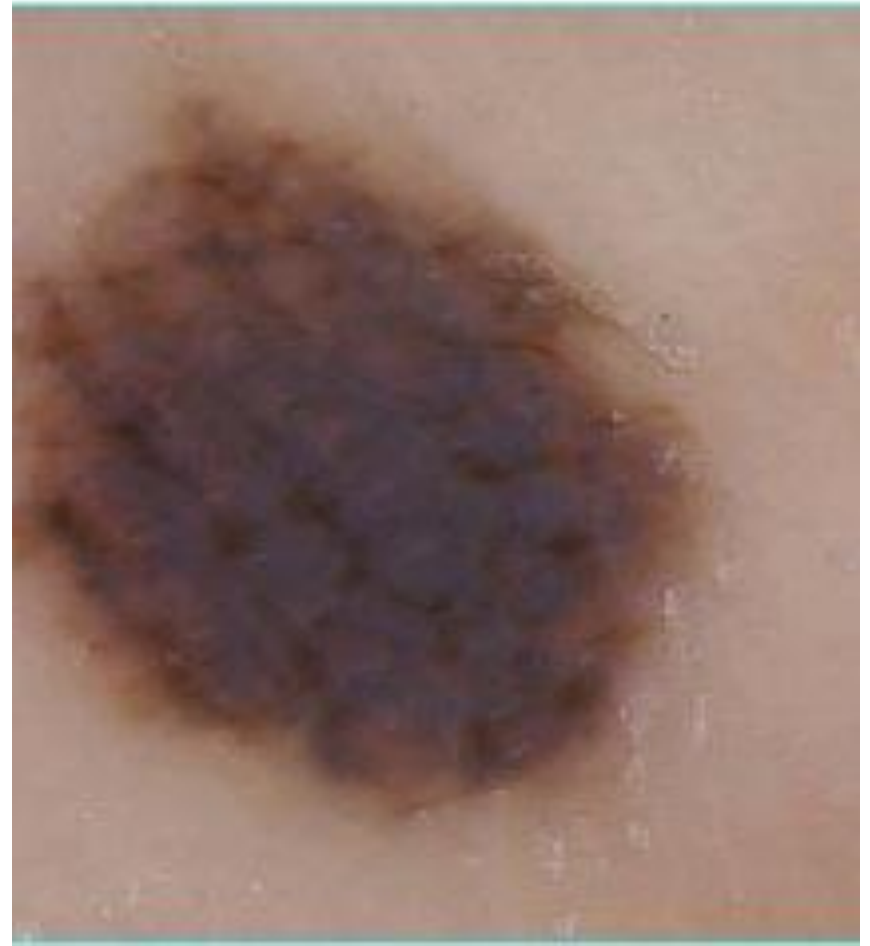


Polymorphous vessels



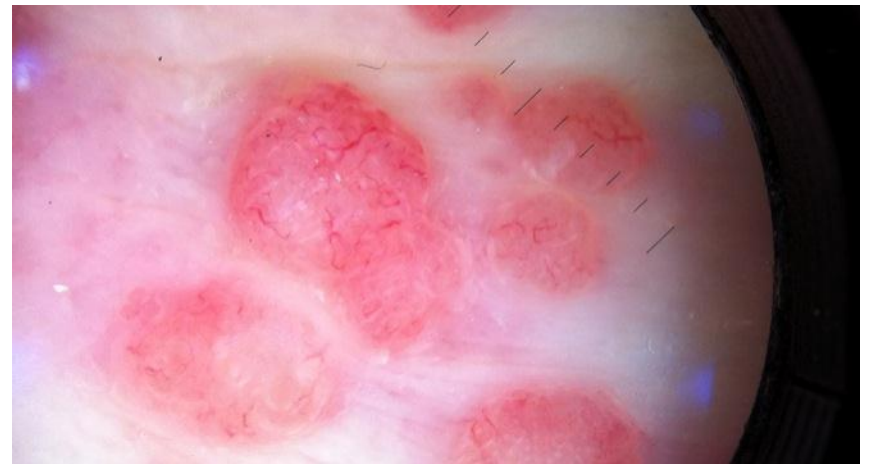
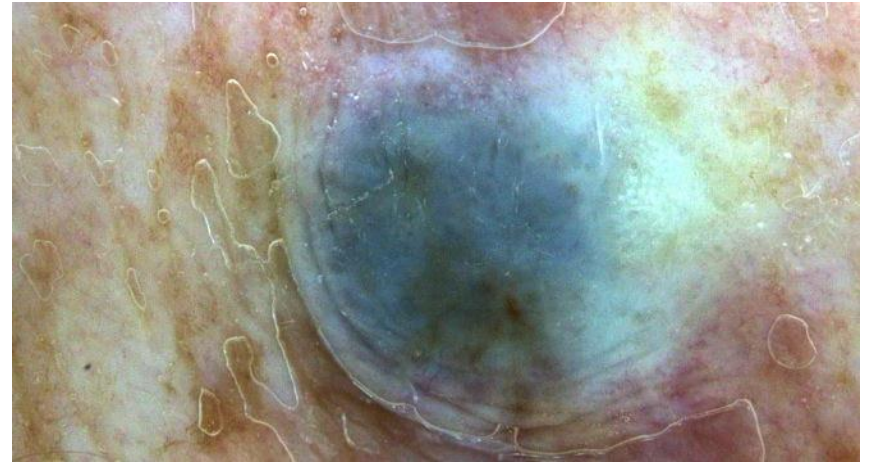
Dots, clods, short irregular lines, serpiginous, hairpin, weird ...

Parallel lines on the ridges (acral lesions only)



Melanoma metastases

- Structureless pattern
- Occasionally clods
- Blue > brown, grey > unpigmented with polymorphous vessels



What are signs of melanoma?

- CHAOS + Clues

1. Eccentric structureless zones of any colour
2. Gray circles, lines, dots, clods
3. Black dots or clods at periphery
4. Focal pseudopods or radial lines at periphery
5. White lines
6. Thick reticular lines
7. Polymorphous vessels
8. Parallel lines on the ridges (acral lesions only)

Does this lesion show chaos?



Yes

No

Asymmetry of structure / colour



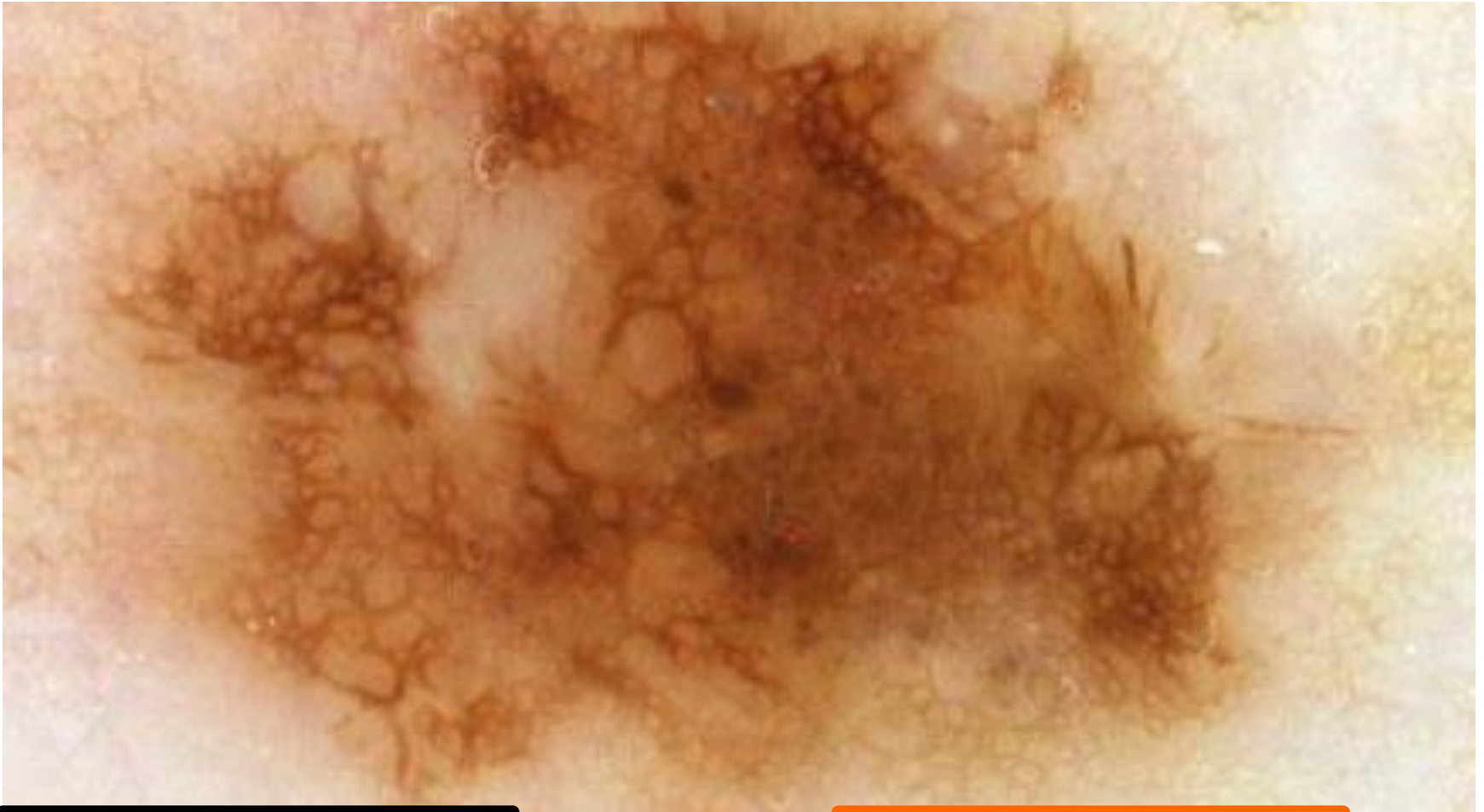
Yes

What are the clues?



1. Eccentric structureless zones of any colour
2. Gray circles, lines, dots, clods
3. Black dots or clods at periphery
4. Focal pseudopods or radial lines at periphery
5. White lines
6. Thick reticular lines
7. Polymorphous vessels
8. Parallel lines on the ridges: N/A

Does this lesion show chaos?



Yes

No

Asymmetry of structure



Yes

Are there any clues?



1. Eccentric structureless zones of any colour
2. Gray circles, lines, dots, clods
3. Black dots or clods at periphery
4. Focal pseudopods or radial lines at periphery
5. White lines
6. Thick reticular lines
7. Polymorphous vessels
8. Parallel lines on the ridges: N/A

No

Does this lesion show chaos?



Yes

No

Asymmetry of structure + colour



Yes

What are the clues?



1. Eccentric structureless zones of any colour
2. Gray circles, lines, dots, clods
3. Black dots or clods at periphery
4. Focal pseudopods or radial lines at periphery
5. White lines
6. Thick reticular lines
7. Polymorphous vessels
8. Parallel lines on the ridges: N/A

Does this lesion show chaos?



Yes

No

Asymmetry of structure / colour



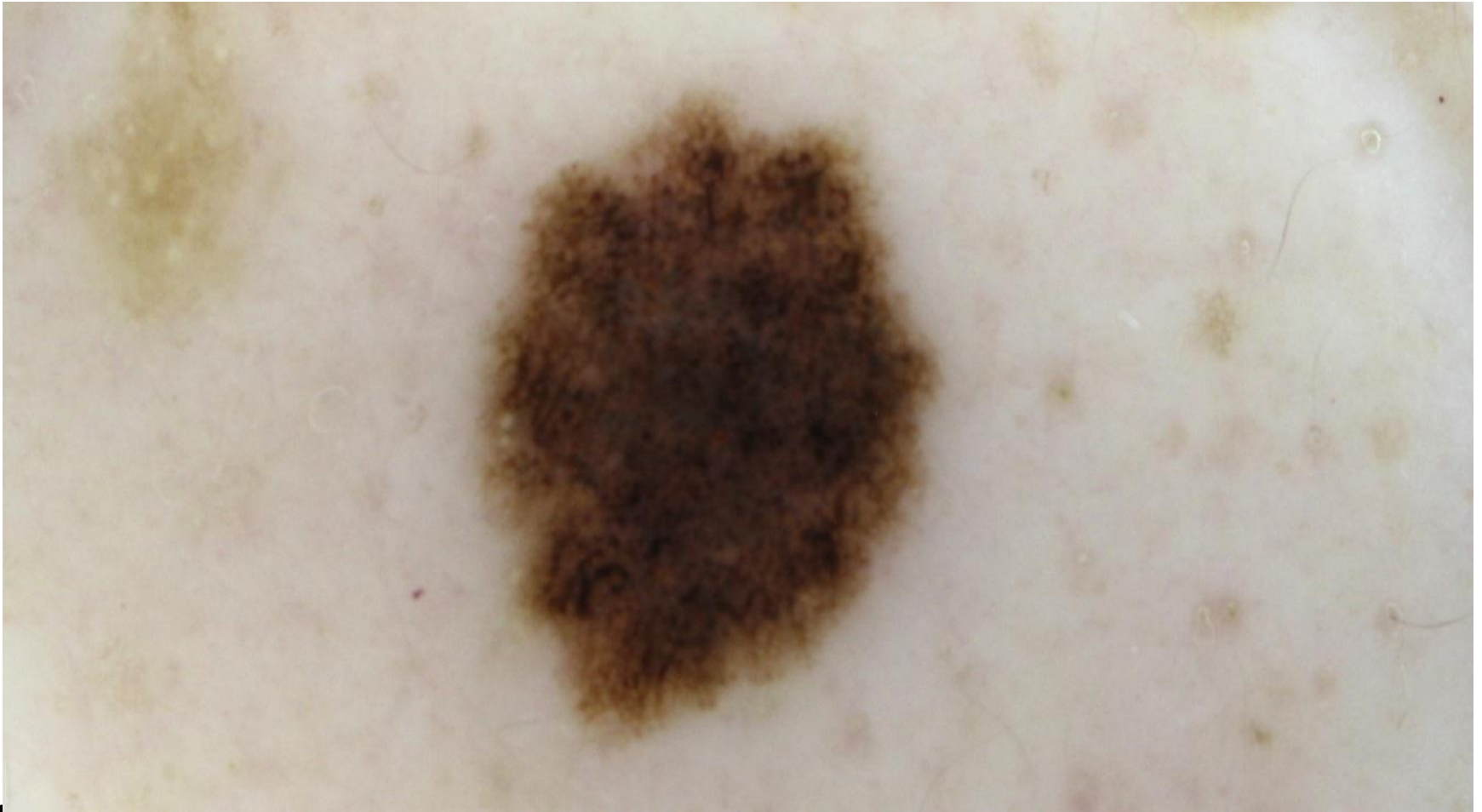
Yes

What are the clues?



1. Eccentric structureless zones of any colour
2. Gray circles, lines, dots, clods
3. Black dots or clods at periphery
4. Focal pseudopods or radial lines at periphery
5. White lines
6. Thick reticular lines
7. Polymorphous vessels
8. Parallel lines on the ridges

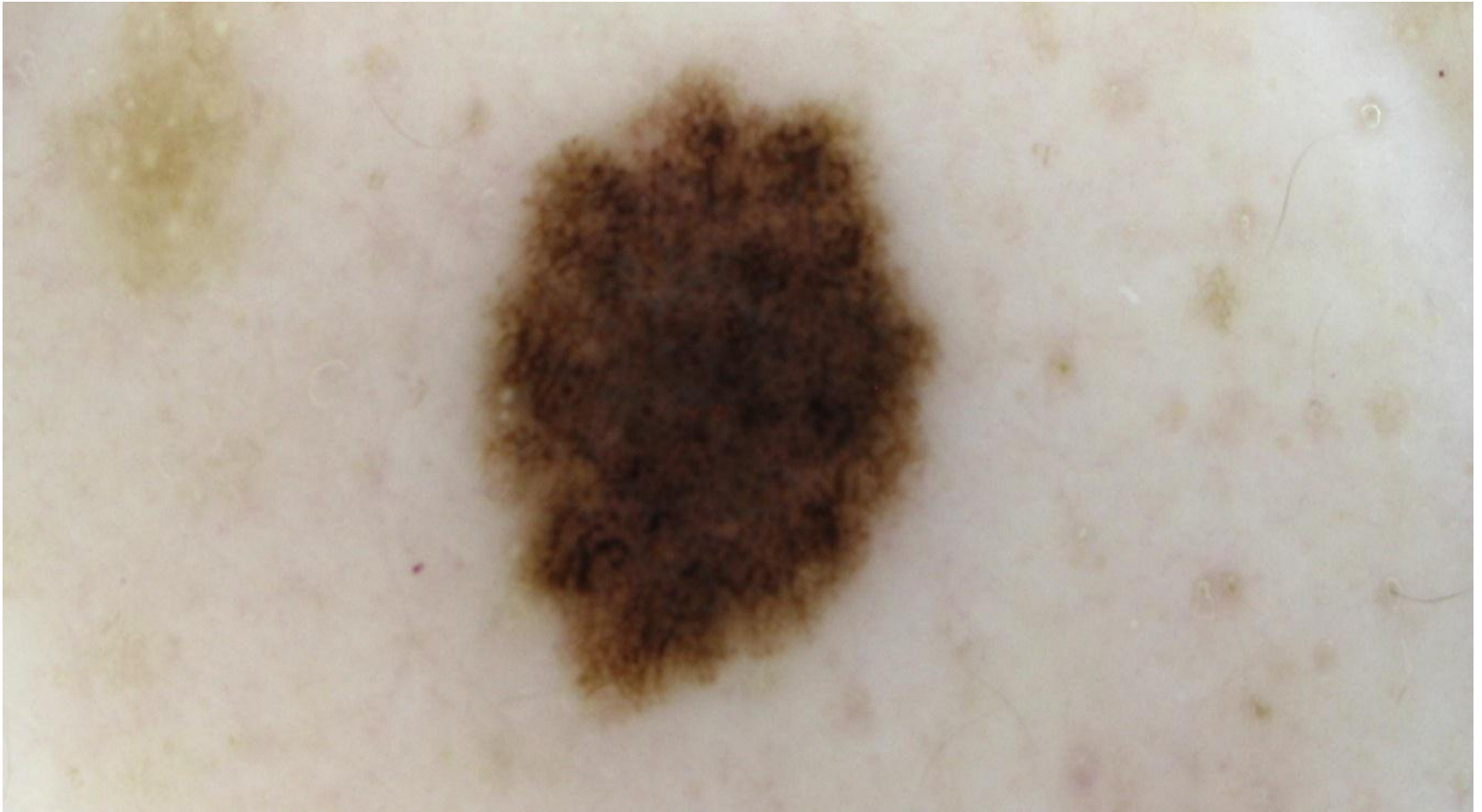
Does this lesion show chaos?



Yes

No

No: so 'clues' are irrelevant



Not really

Does this lesion show chaos?



Yes

No

Asymmetry of structure + colour



Yes

Seborrheic keratosis!



Epithelial lesions

Which is melanoma?

A



B



• A?

• B?

• Both?

B is melanoma

Solar lentigo



Bland + scale

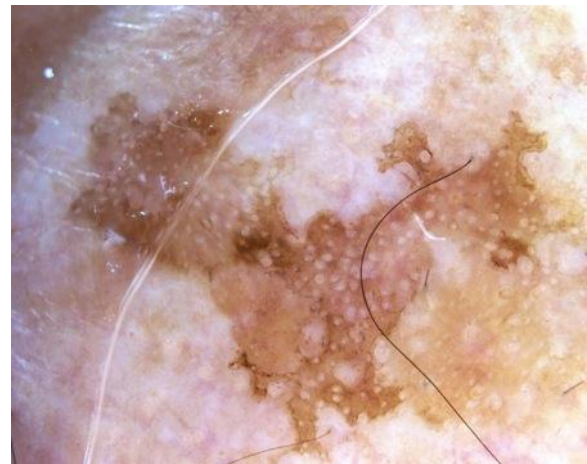
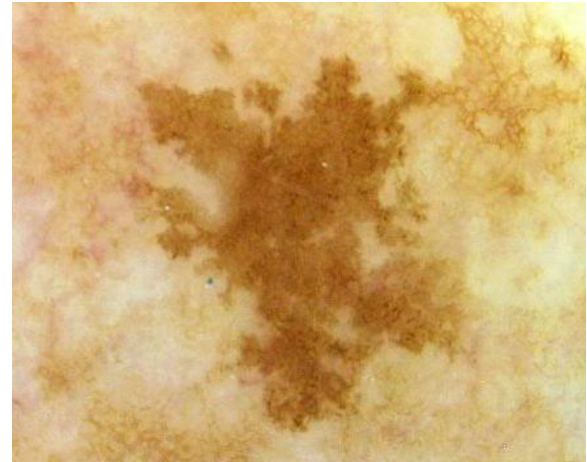
Melanoma in situ



Multicomponent: chaos + clues

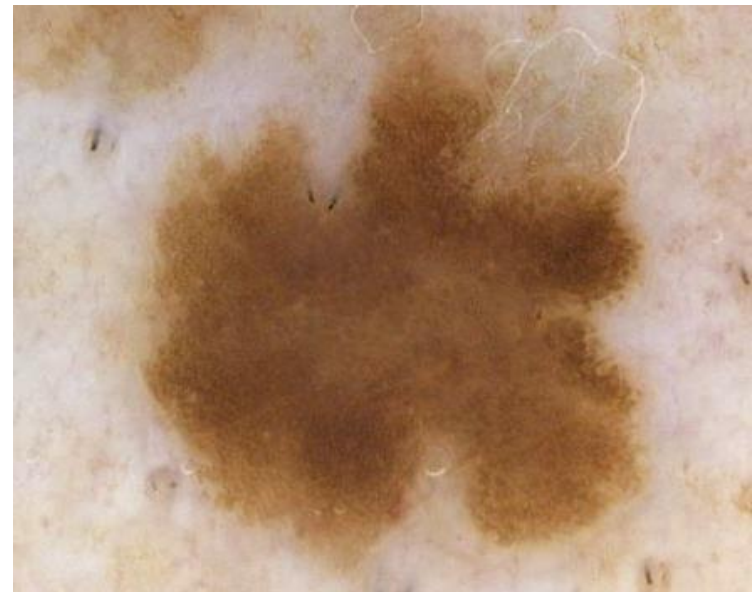
Solar lentigo

- Well-demarcated, scalloped border
 - “Moth eaten”
- Small or large
- Yellowish-brown



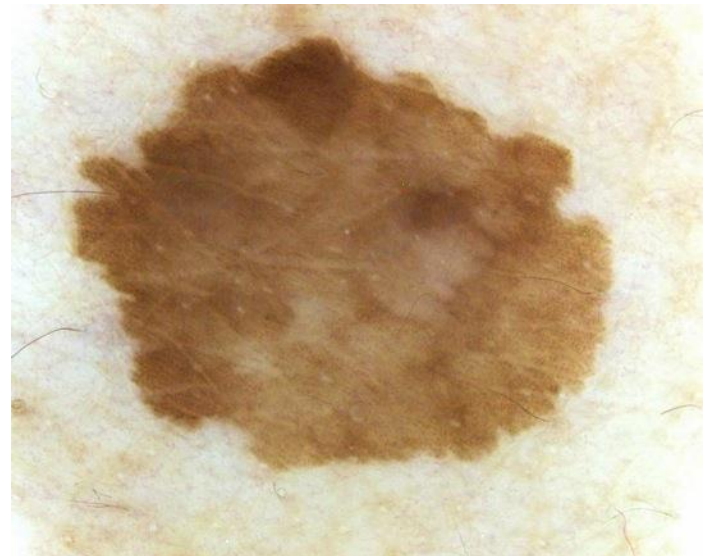
Solar lentigo: forearm, hands

- Light brown structureless
- $\pm$ brown dots



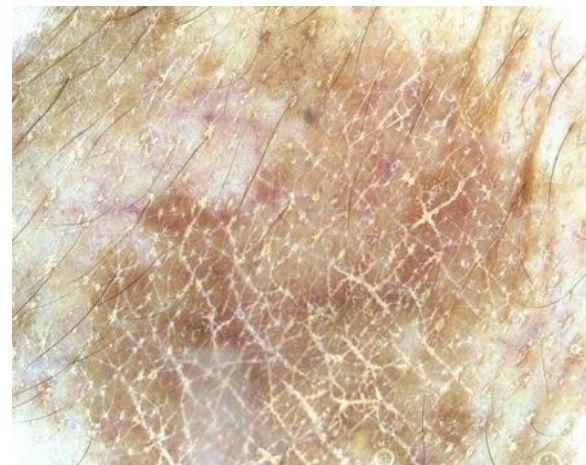
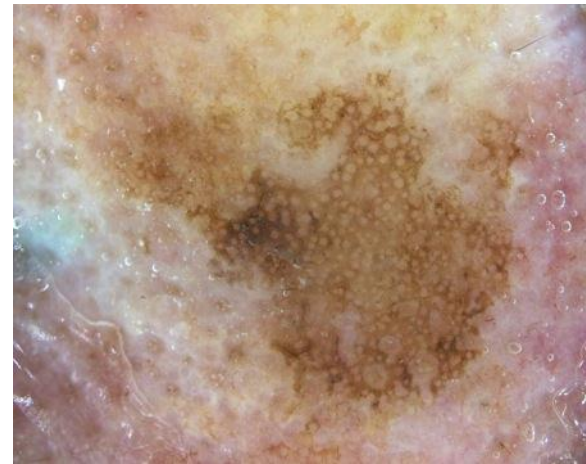
Solar lentigo

- Trunk:
 - reticular &/or curved lines $\pm$ brown circles
 - “Fingerprinting”



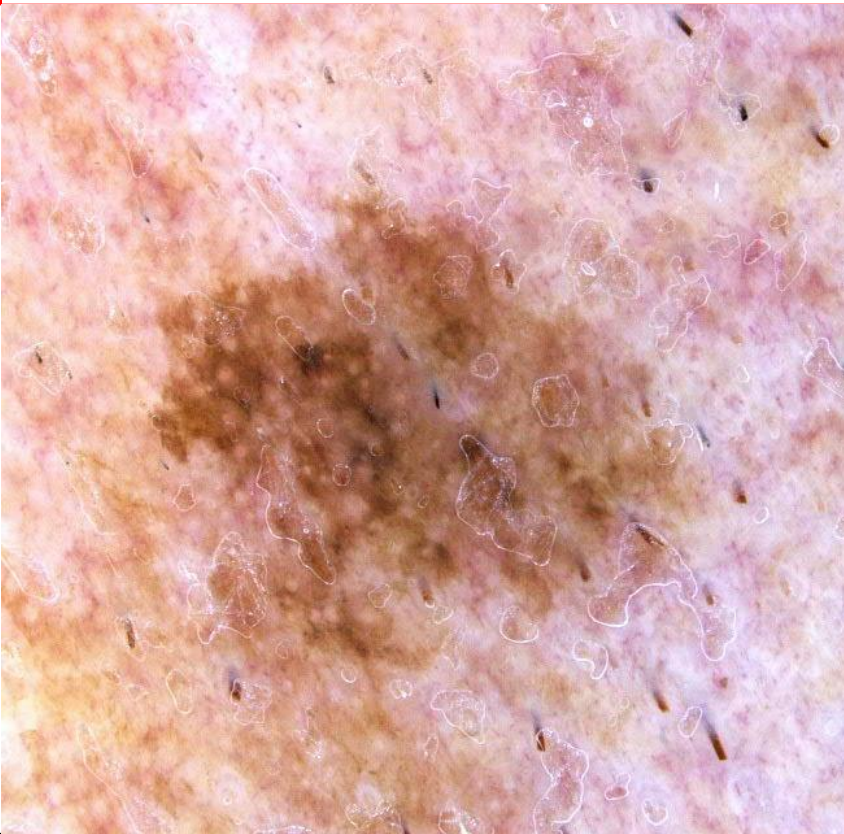
Solar lentigo: face

- Regularly spaced white dots (follicles)
 - “Pseudonetwork”
- Regularly spaced brown circles
- Wipe off make-up!

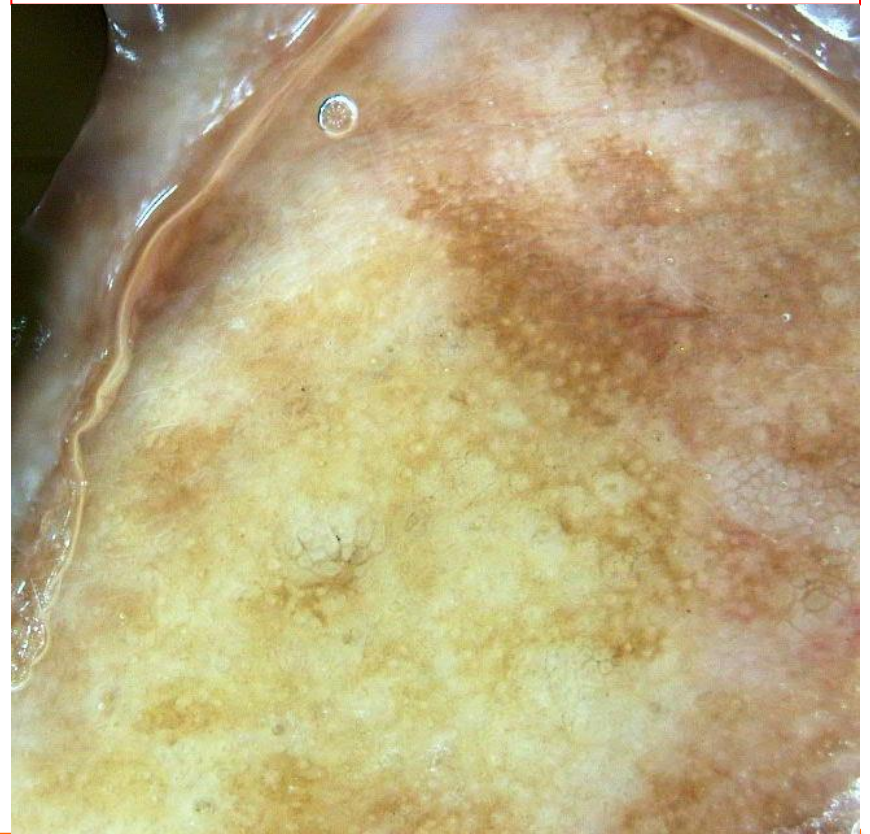


Which one should you biopsy?

A



B



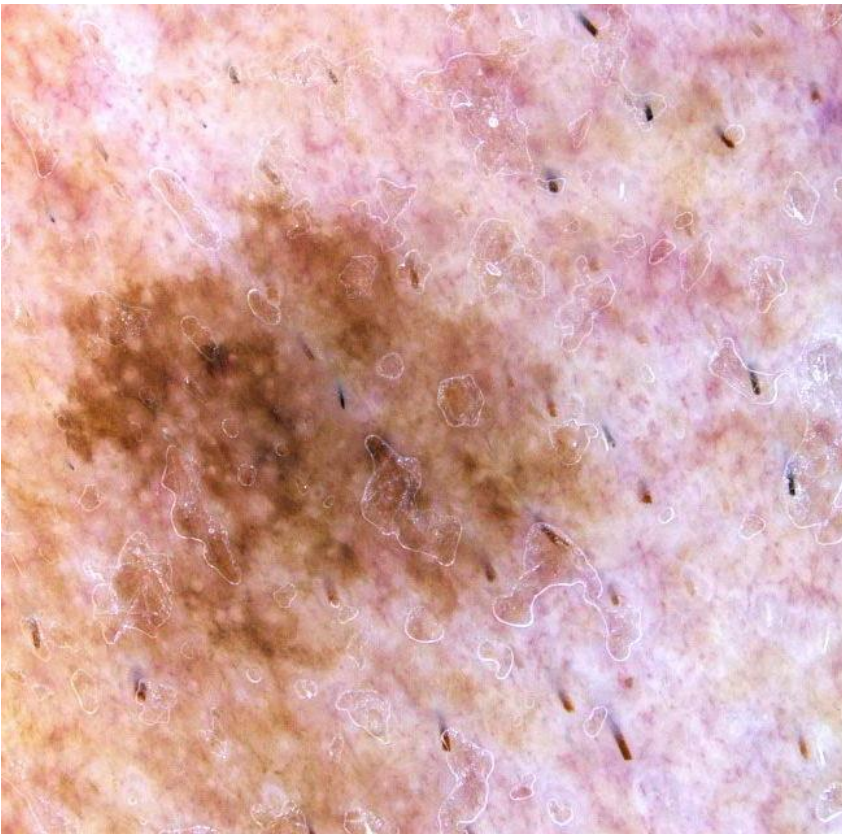
• A?

• B?

• Both?

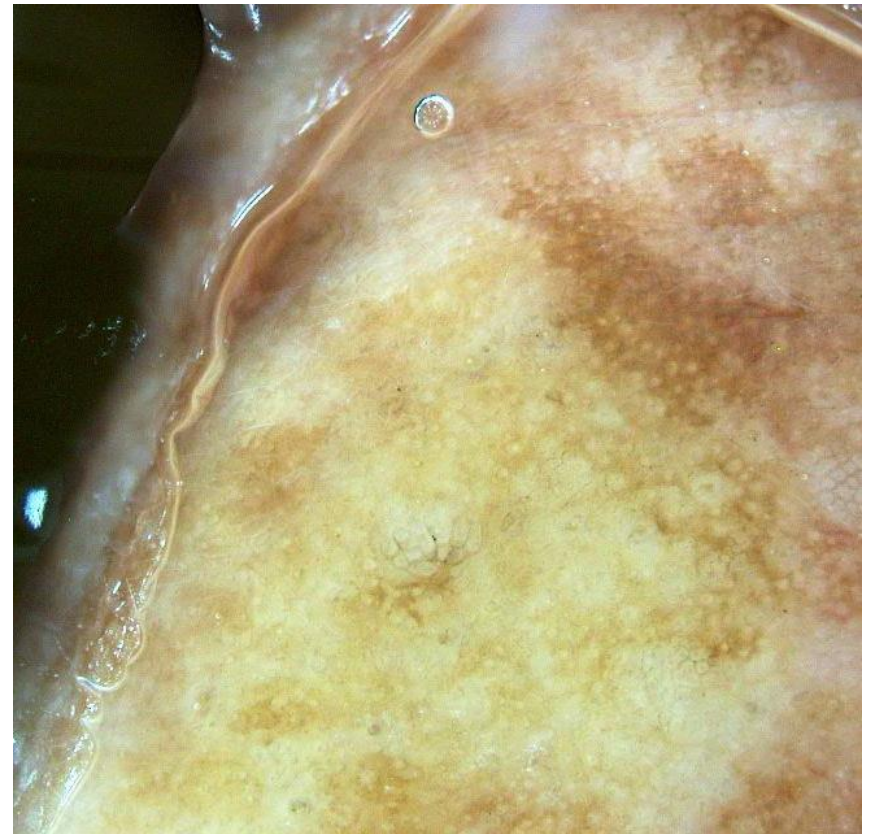
You should biopsy A

Possible lentigo maligna



Irregular holes and lines

Benign solar lentigo



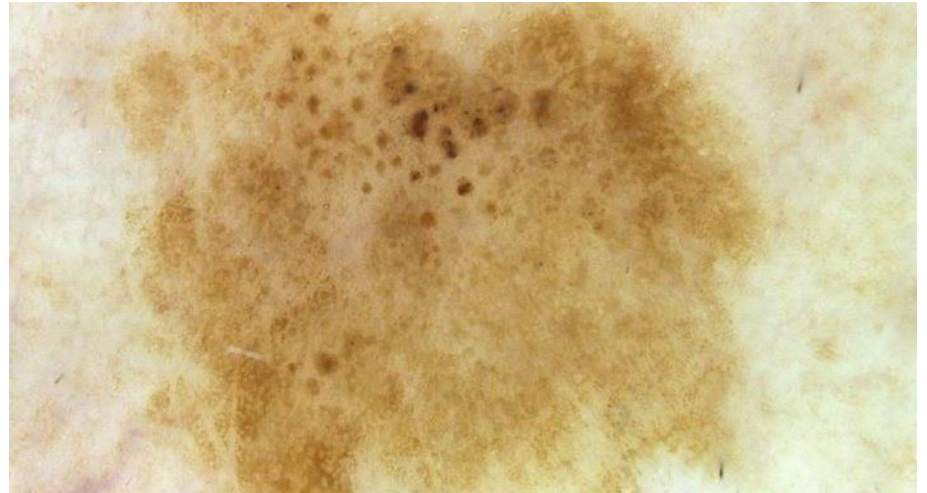
Regularl holes and lines

Solitary pigmented facial lesions

- Very tricky to diagnose at times
 - Lentigo maligna $\approx$ solar lentigo $\approx$ solar keratosis
- If structure / colour irregular, biopsy or review
 - Large or multiple biopsies

Seborrhoeic keratosis

- Any colour
- Any shape
- Flat or thickened
 - Flat like solar lentigo
 - Verrucous like wart
- Various and variable patterns

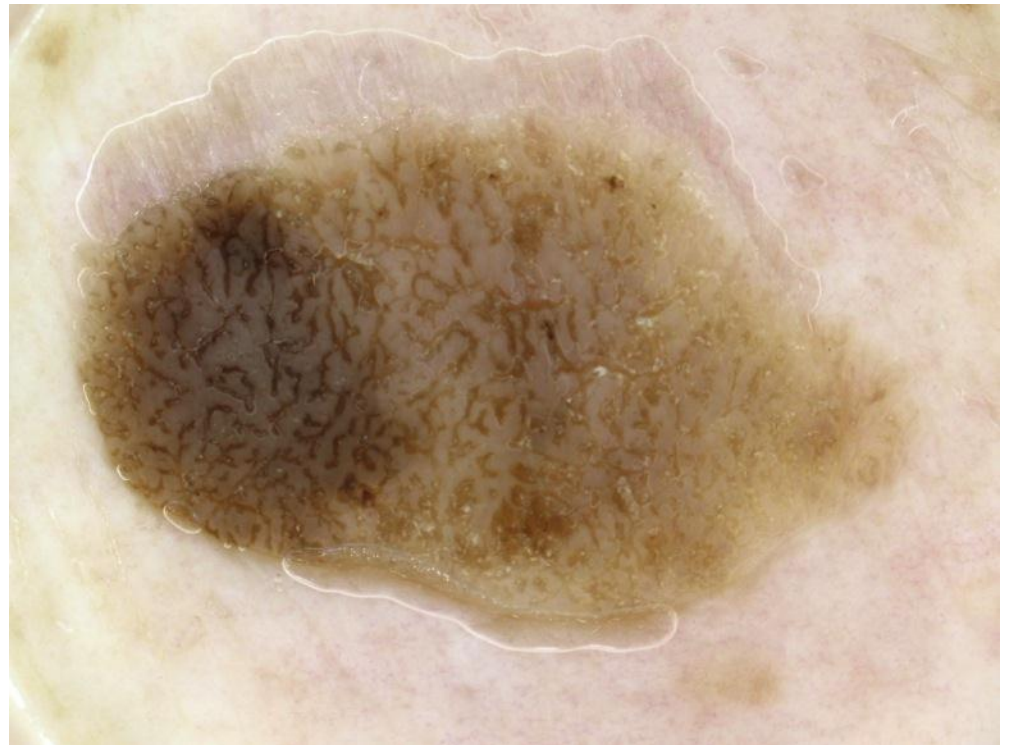


Seborrhoeic keratosis

- Thick curved lines
- Brown circles
- Clods, structureless
 - Brown, orange, skin-coloured, brown, blue, grey, black, white
- Looped or coiled vessels
- “Cerebriform” or “brain-like pattern”
- “Gyri & sulci”
- “Fissures & ridges”
- “Fat fingers”
- “Comedo-like openings”
- “Crypts”
- “Milia-like cysts”
- “Exophytic papillary structures”

Seborrheic keratosis

- Thick curved lines
 - Any colour
- “Cerebriform” or “brain-like pattern”
- “Gyri & sulci”
- “Fissures & ridges”
- “Fat fingers”



Thick curved lines



Seborrheic keratosis

- Clods, structureless
 - Brown, orange, skin-coloured, brown, blue, grey, black, white
- “Comedo-like openings”
- “Crypts”
- “Milia-like cysts”



White/yellow clods: milia-like cysts

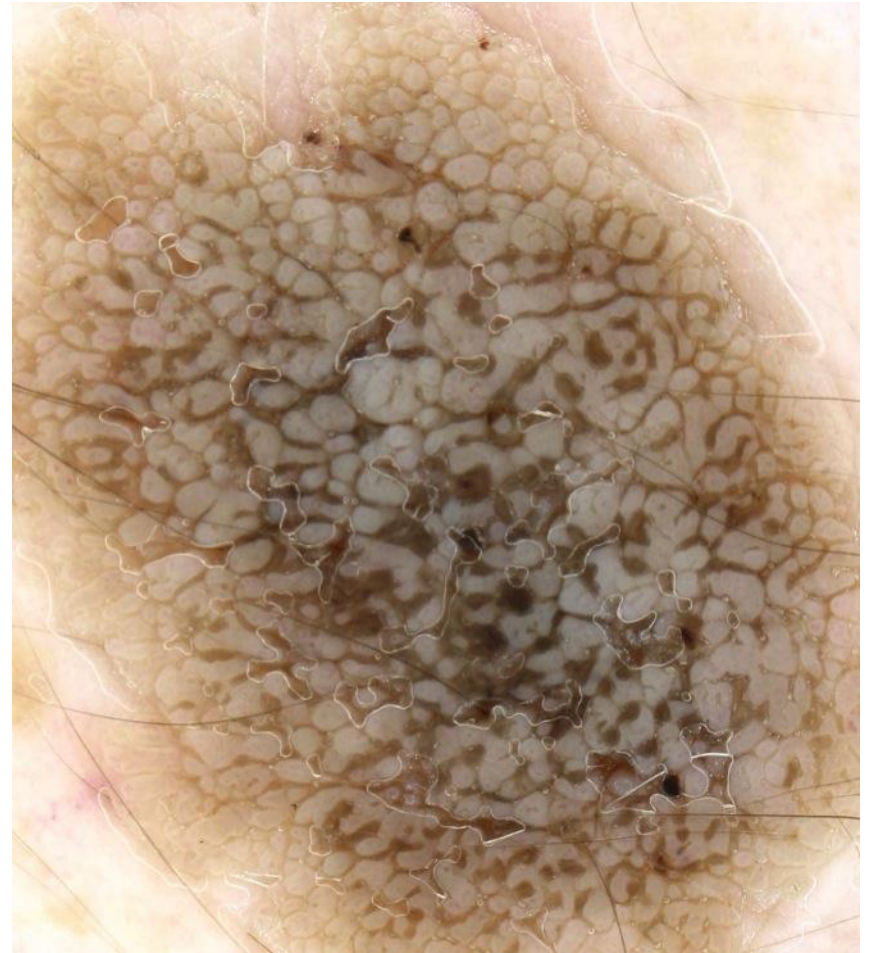
No polarisation



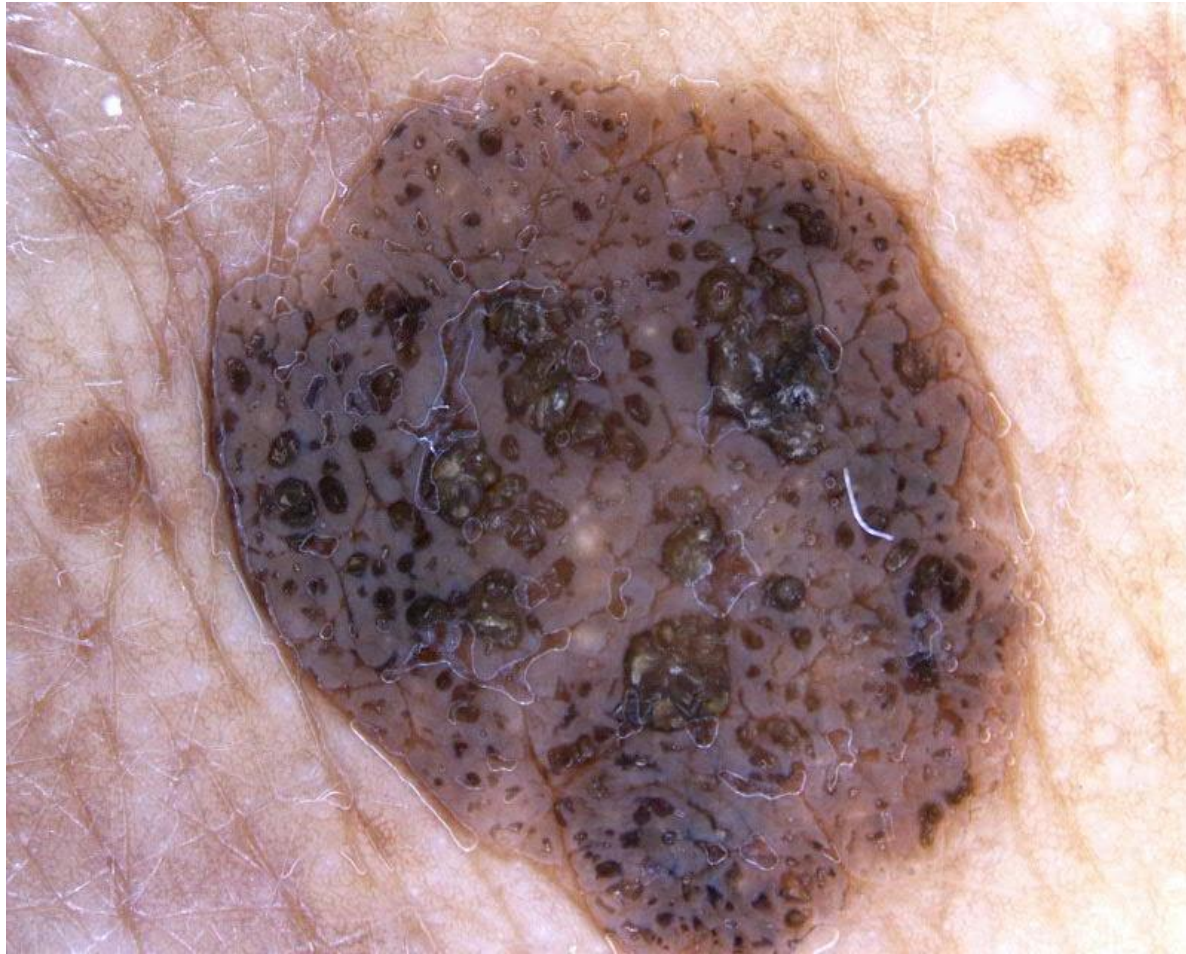
Polarisation



Exophytic papillary structures

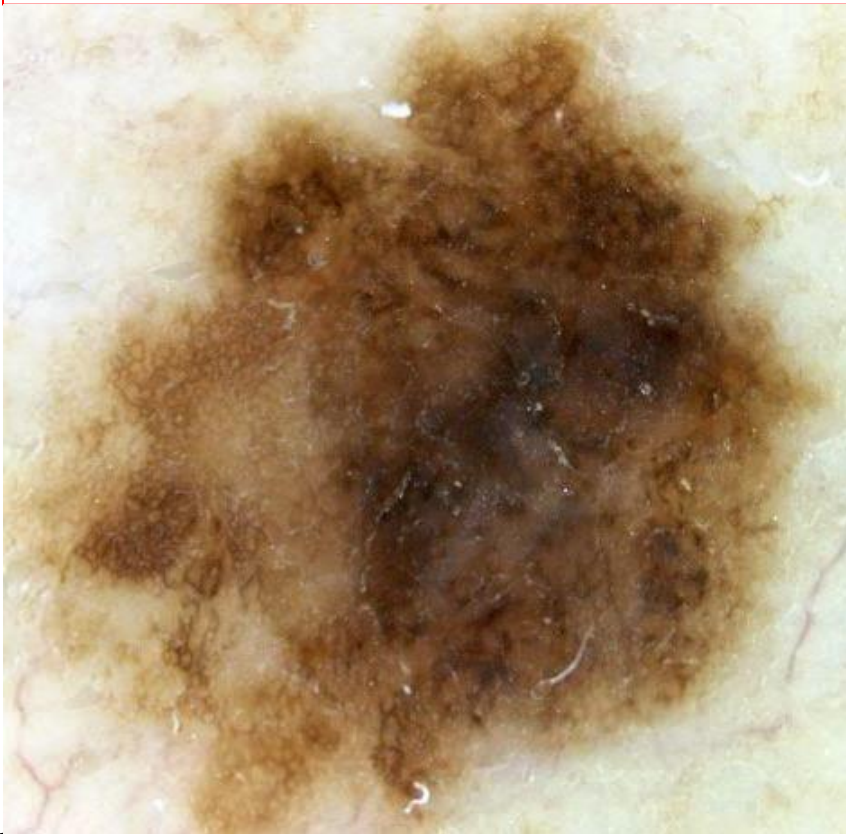


What structures can you see?

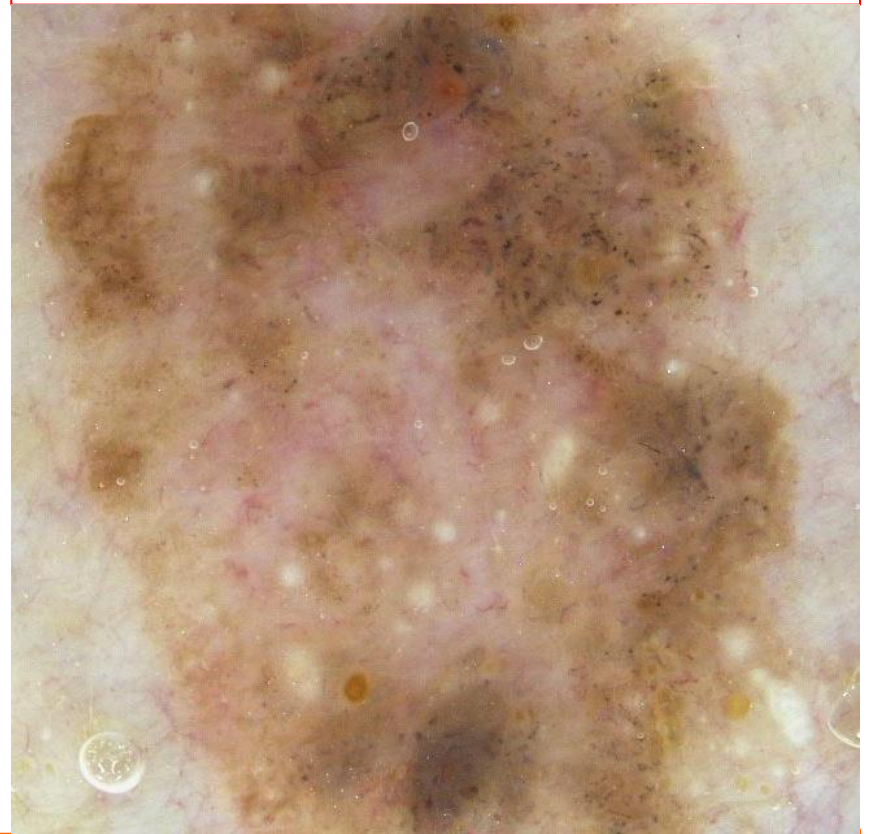


Which is melanoma?

A



B



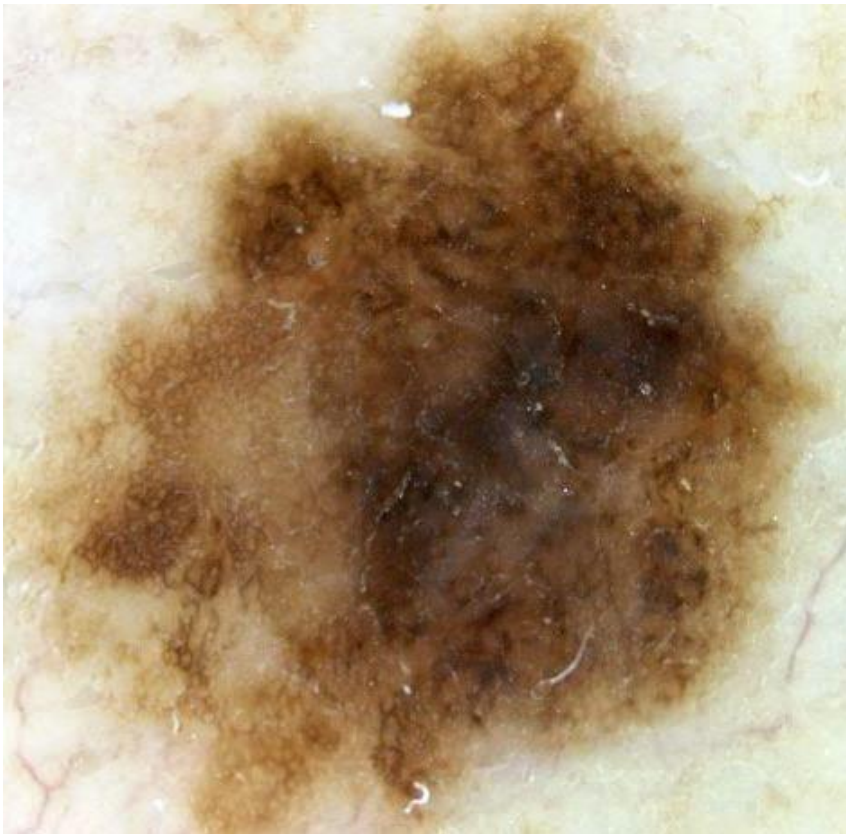
• A?

• B?

• Both?

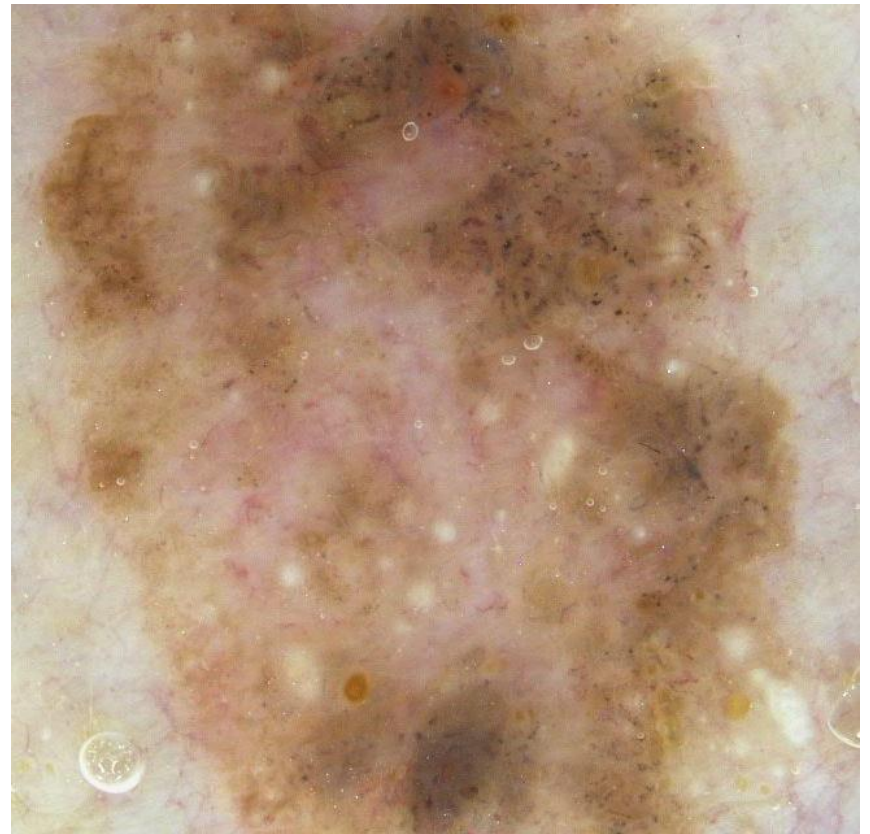
A is melanoma

Melanoma



Prominent network of lines

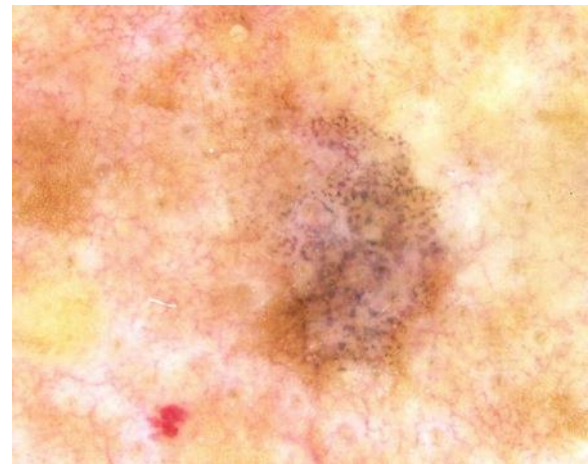
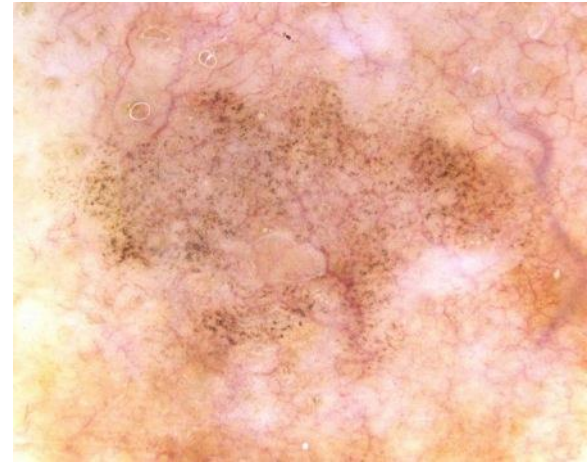
Seborrhoeic keratosis



White, yellow clods

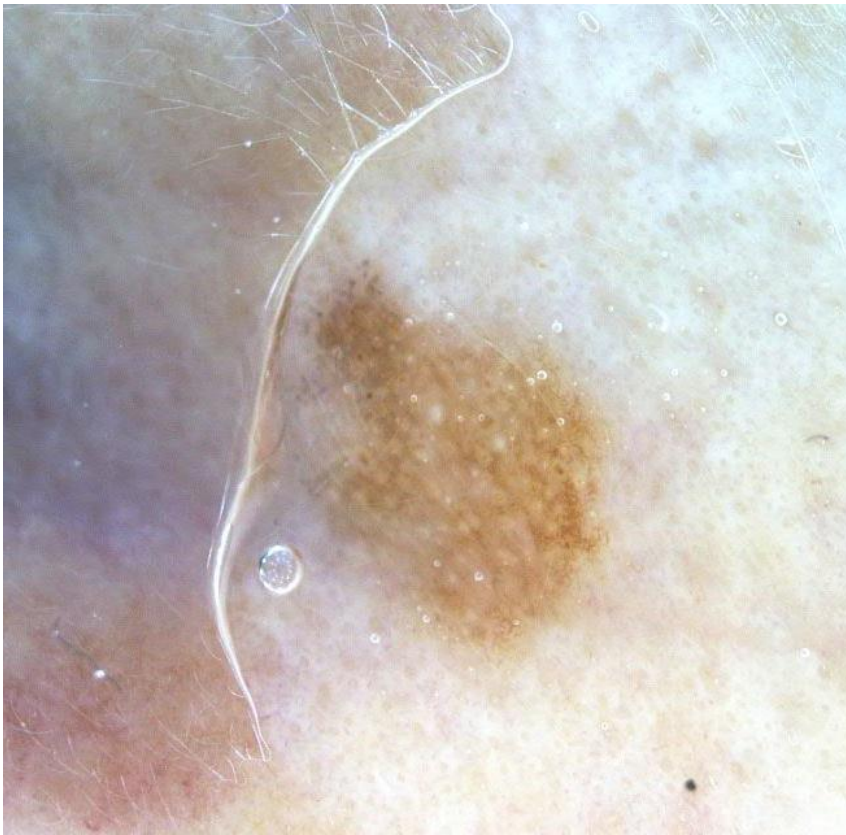
Lichen-planus like keratosis

- Pre-existing solar lentigo or seborrhoeic keratosis
- “Lichenoid keratosis”
- Grey dots



Lichen planus-like keratosis

2010

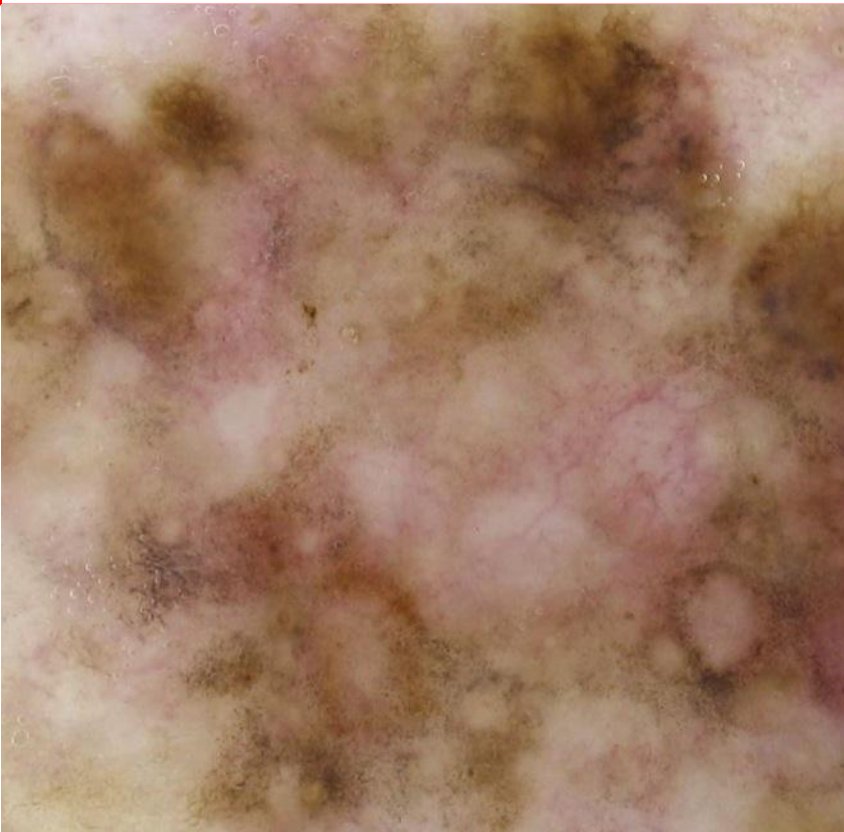


2011

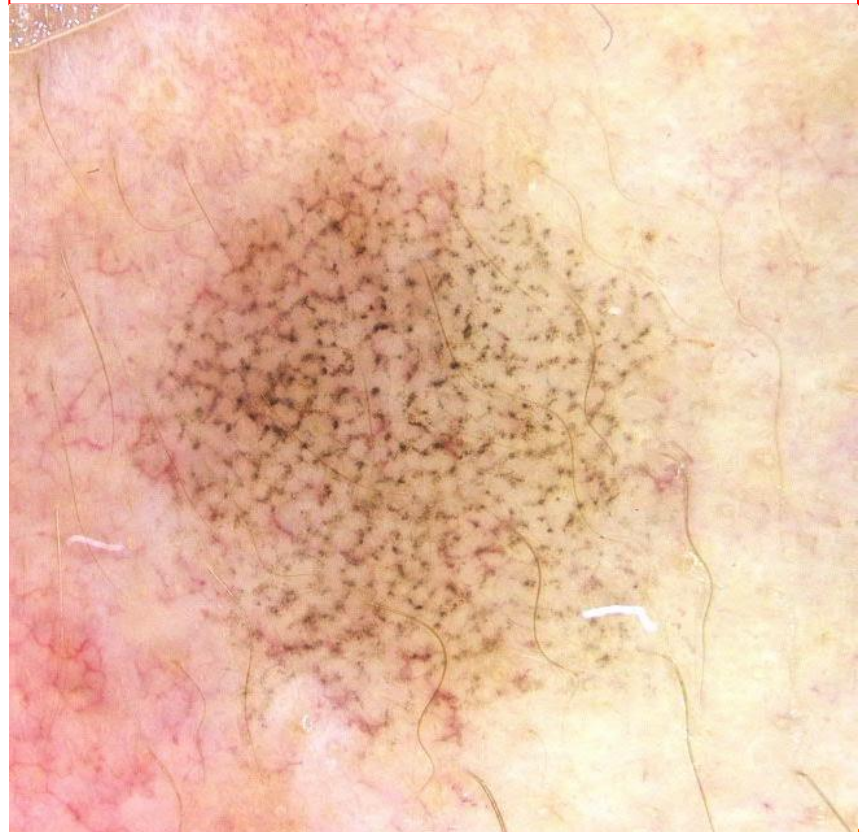


Which is melanoma?

A



B



• A?

• B?

• Both?

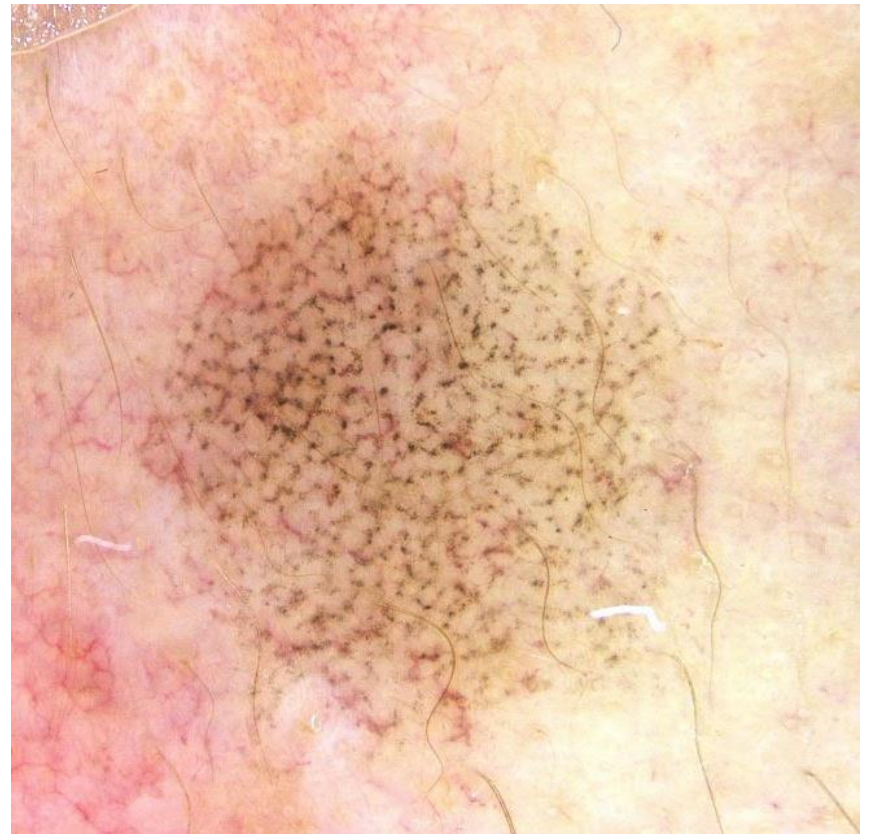
A is melanoma

Melanoma in situ



Chaos + clues

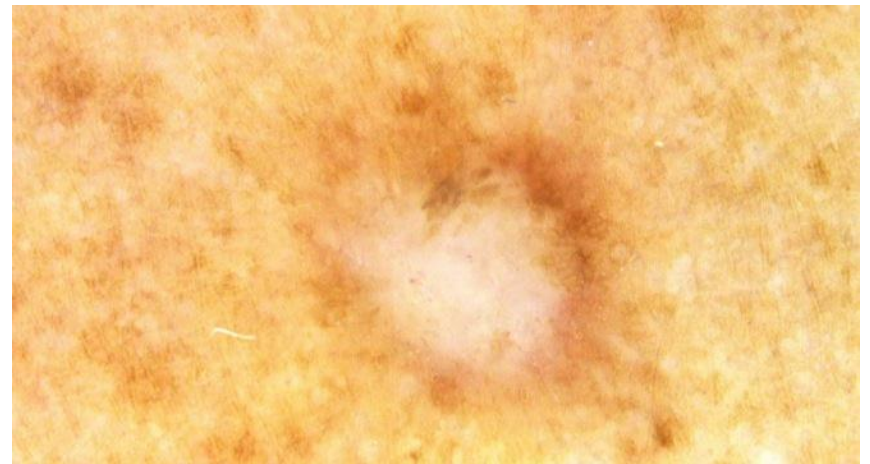
Lichen planus-like keratosis



Uniformly distributed dots.

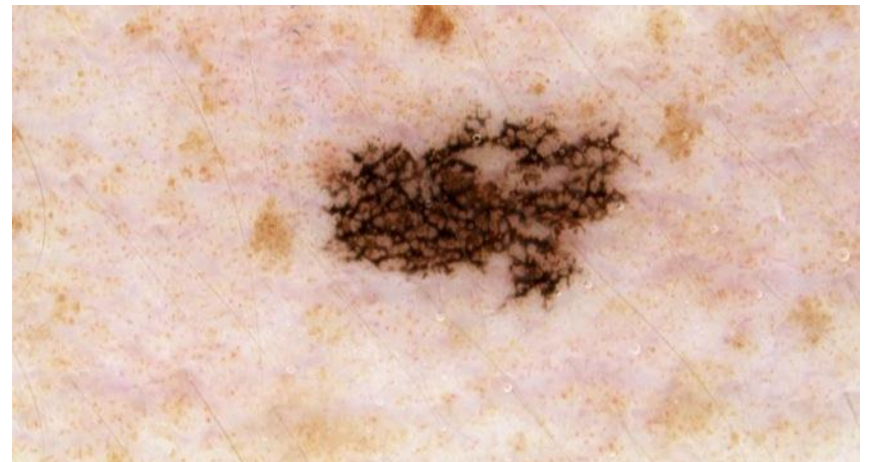
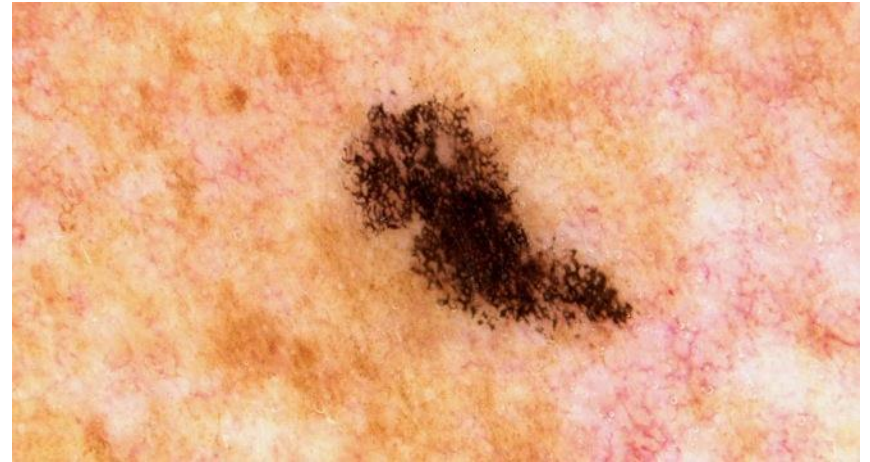
Dermatofibroma

- Reticular or structureless
- Often white or skin coloured centre or white lines in centre
- “Central white patch”



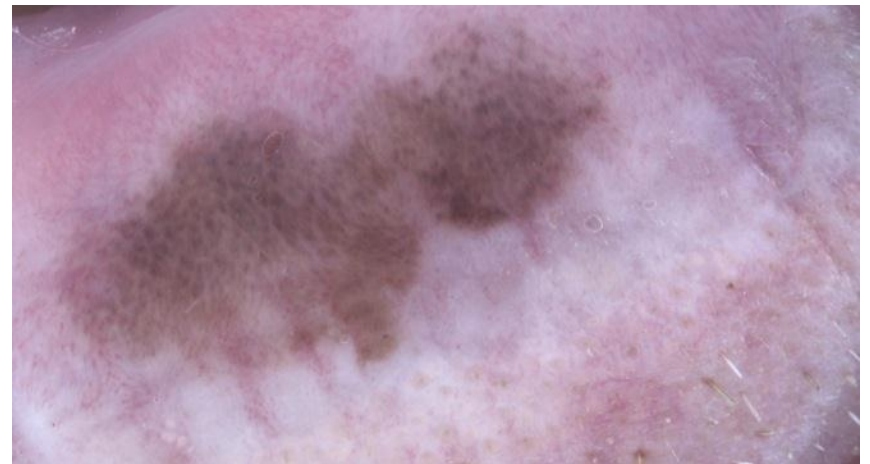
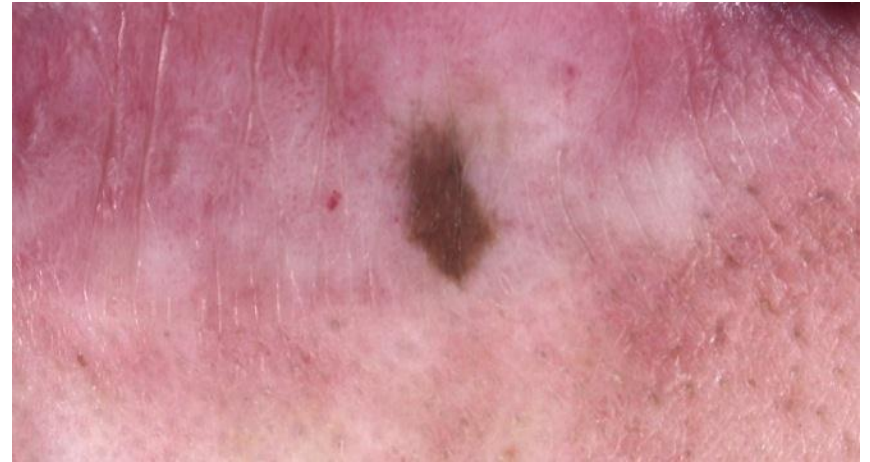
Ink-spot lentigo

- Dark brown interrupted reticular lines



Mucosal lentigo

- Structureless or curved parallel lines or circles
- Light to dark brown



Pigmented basal cell carcinoma

- Radial lines, dots, clods, structureless zones
- Blue clods characteristic, also brown & grey dots
- Ulceration
- “Maple leaf-like areas”
- “Blue-gray ovoid nests”
- “Peppering”
- “Spoke-wheel areas”
- “Dirty dishwater”

What are signs of pigmented BCC?

- CHAOS + Clues

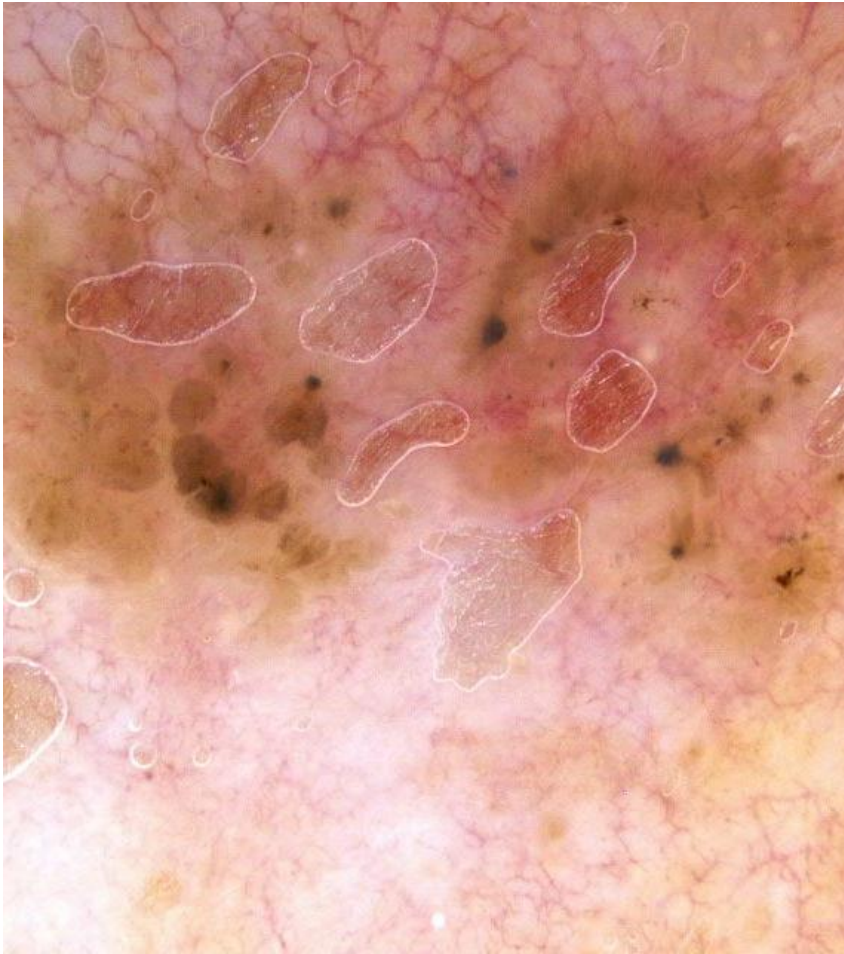
1. Eccentric structureless zones of any colour
2. Gray circles, lines, dots, clods
- ~~3. Black dots or clods at periphery~~
- ~~4. Focal pseudopods or radial lines at periphery~~
5. White lines
- ~~6. Thick reticular lines~~
7. Polymorphous vessels
- ~~8. Parallel lines on the ridges (acral lesions only)~~

Pigmented basal cell carcinoma

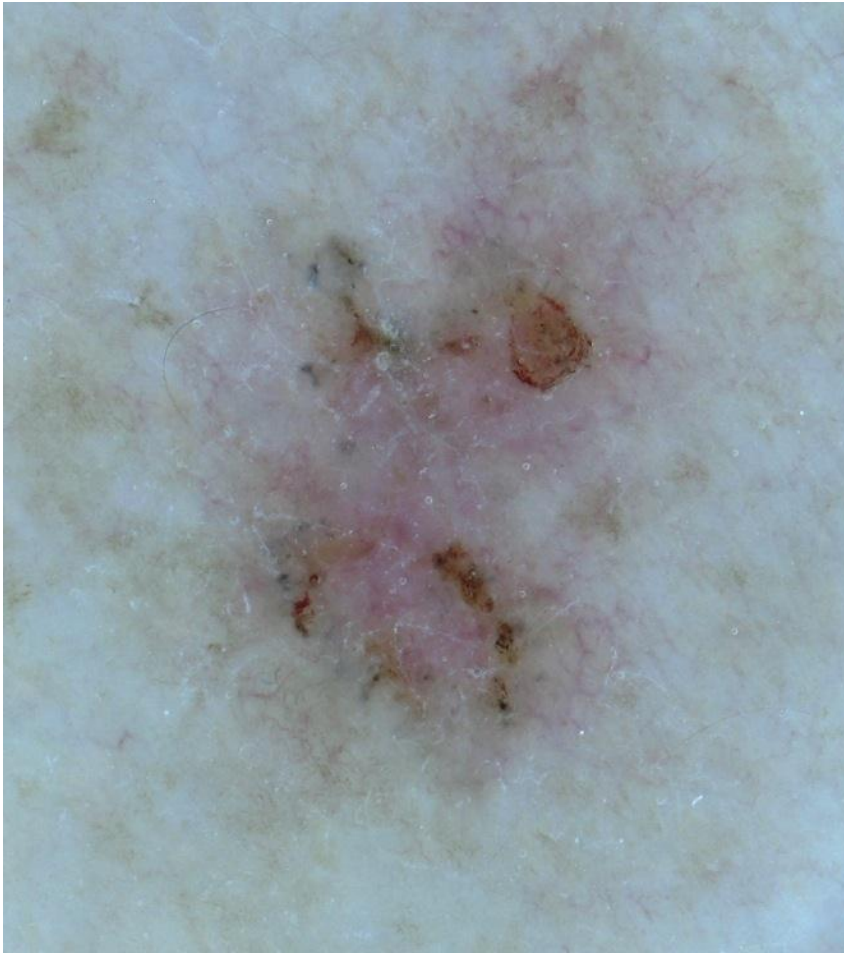


CHAOS + clues: lines, dots, clods, structureless zones

Pigmented basal cell carcinoma



Superficial basal cell carcinoma

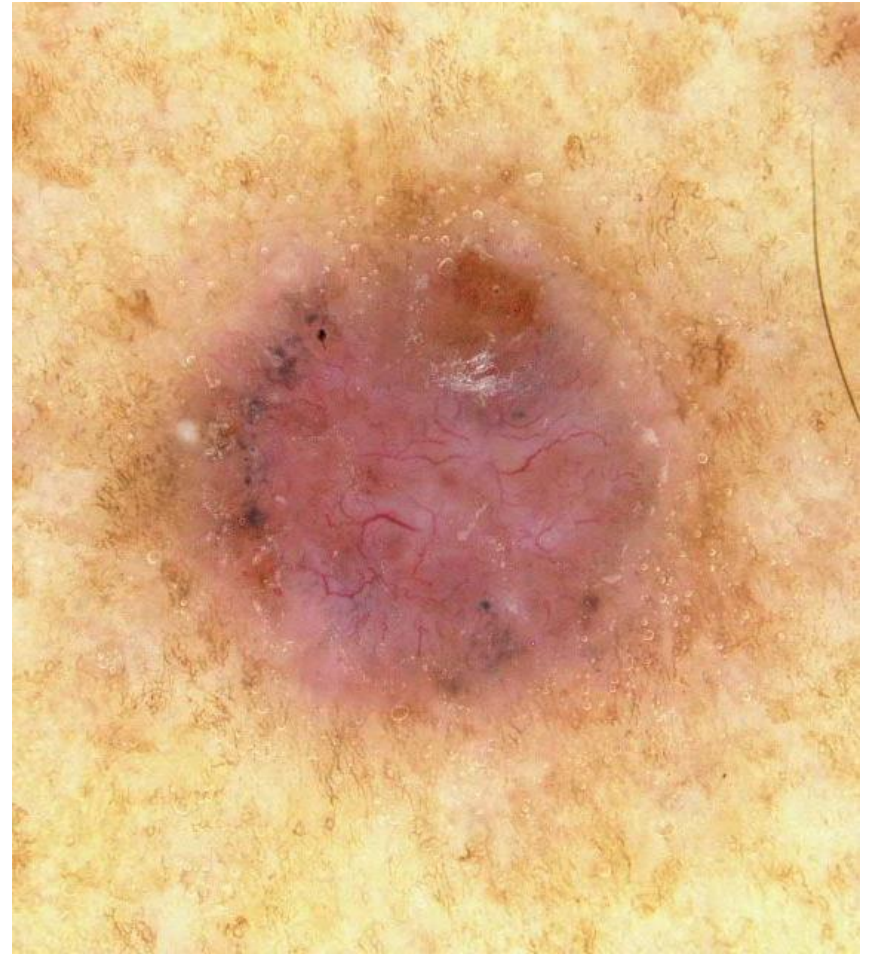


Basal cell carcinoma

- Branched red lines (nodular)
- Short linear vessels (superficial)
- Arborising vessels
- Shiny white streaks
- “Chrysalis” structures

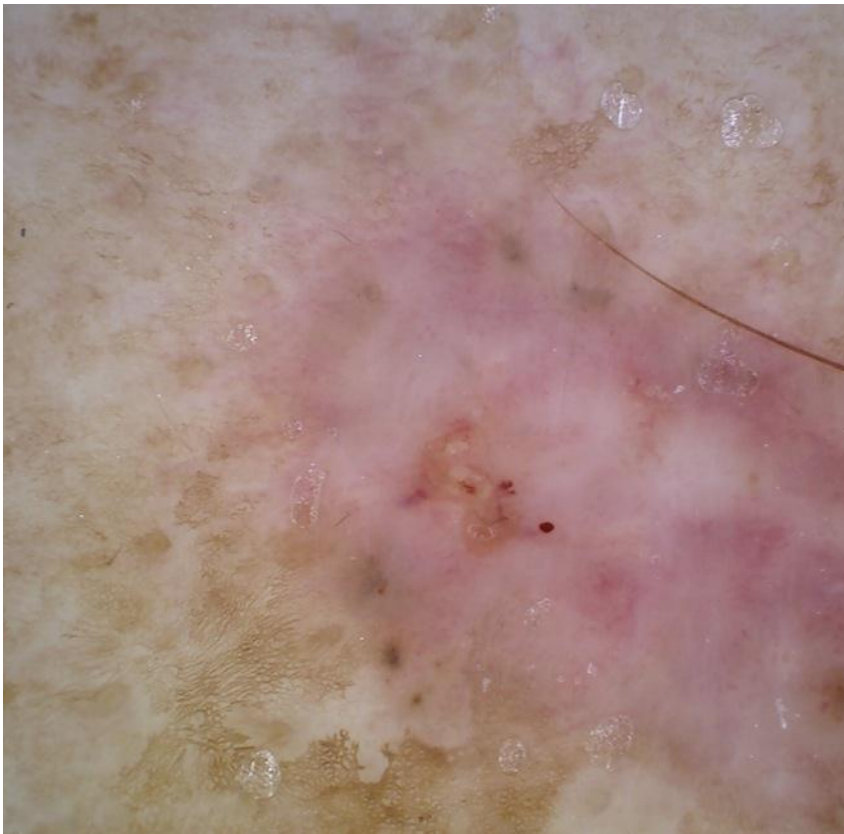


BCC: branched red lines

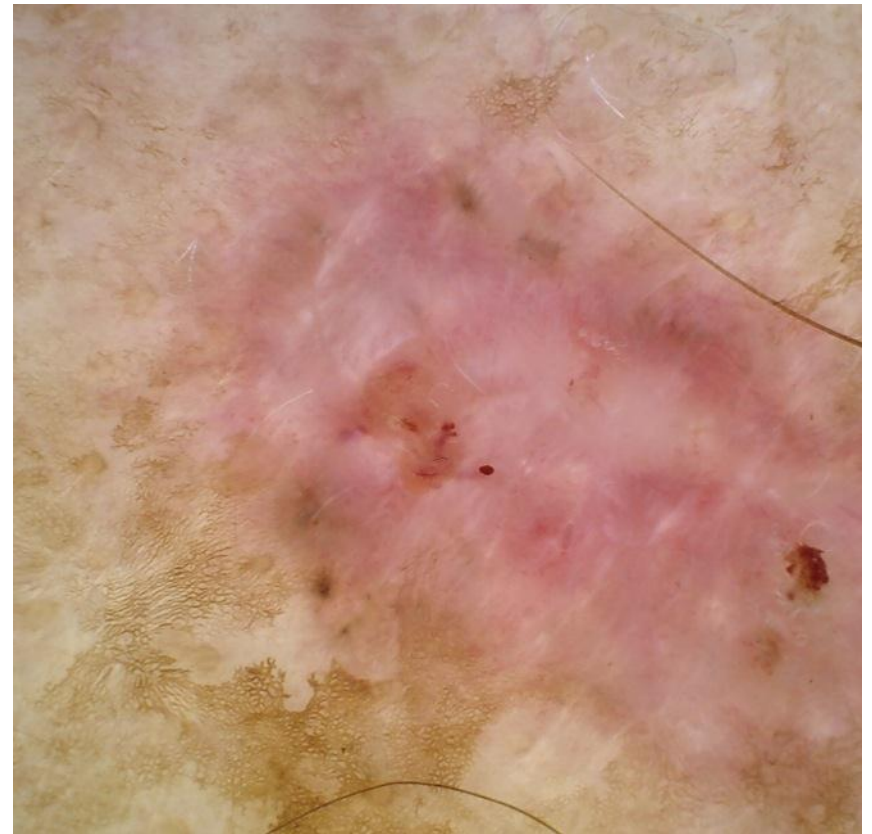


Shiny white streaks: chrysalis structures

No polarisation



Polarisation

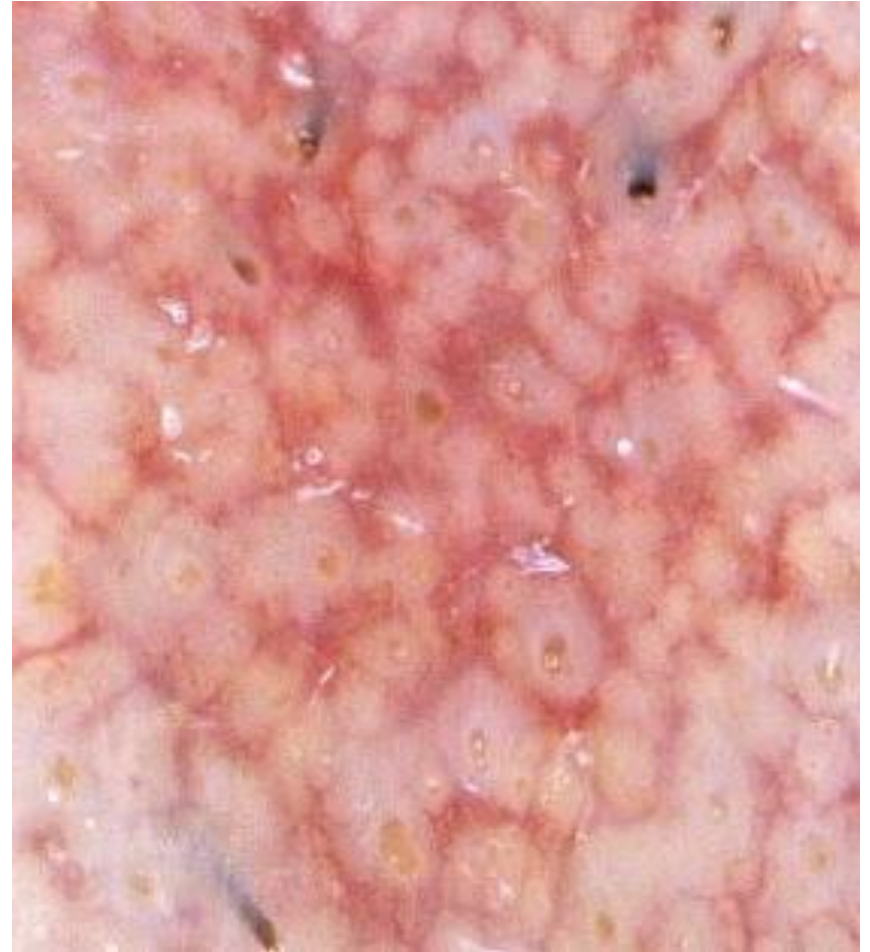


Pigmented actinic keratosis

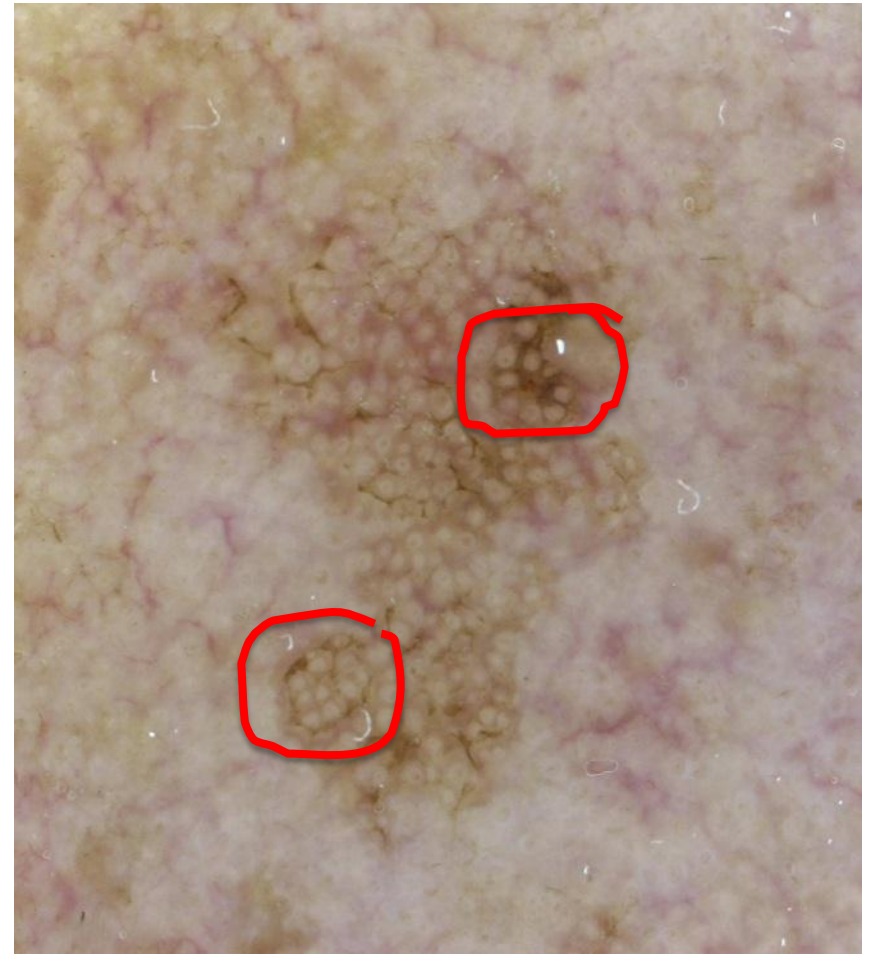
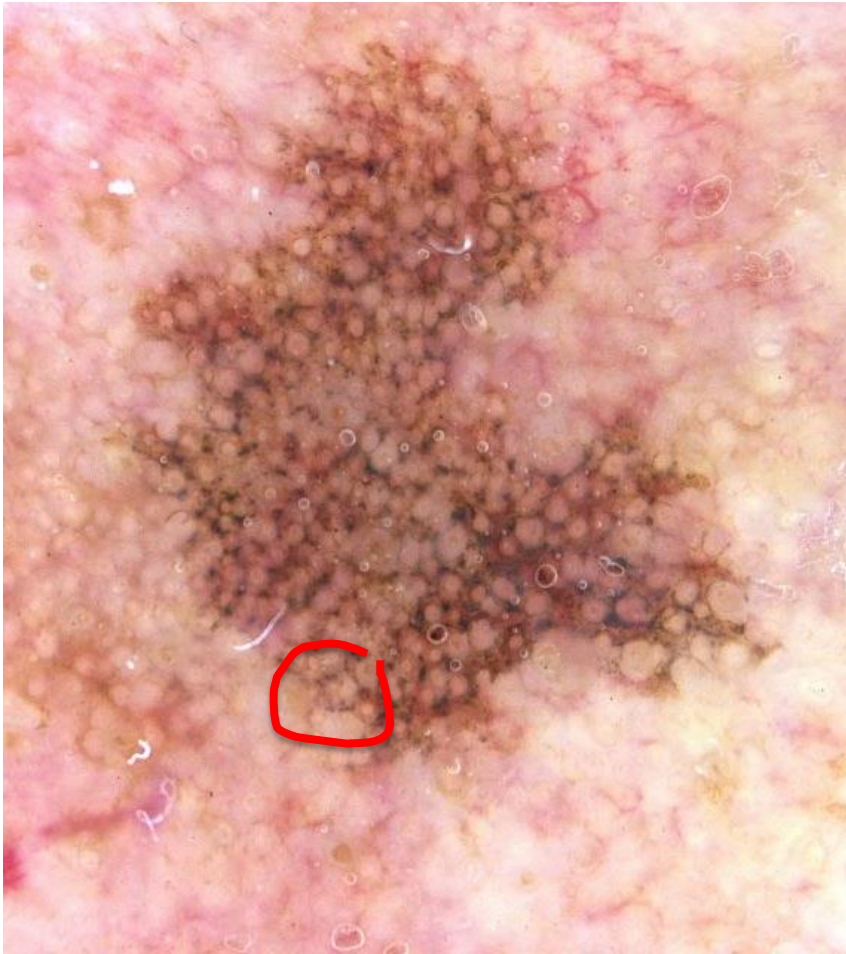
- Red background
- Grey / brown dots
- Dots as a circle around follicle
- Curved lines like solar lentigo
- Grey / brown / white circles
- 4 white dots in a square
- “Rosettes”
- “Strawberry pattern”



Strawberry pattern



Pigmented actinic keratosis



- Dots in a circle round follicle
- Rosette

Pigmented SCC in situ

- Structureless brown / hypopigmented
- Brown / grey dots, often as radial lines
- Hypopigmented structure

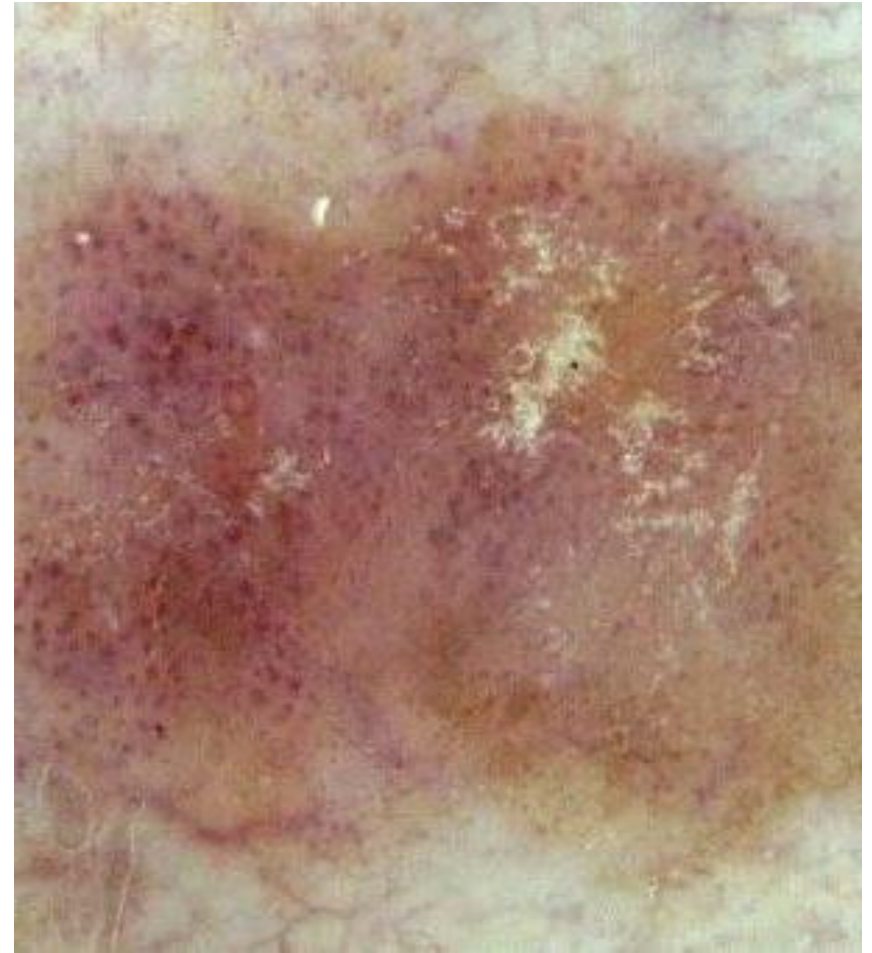


SCC in situ

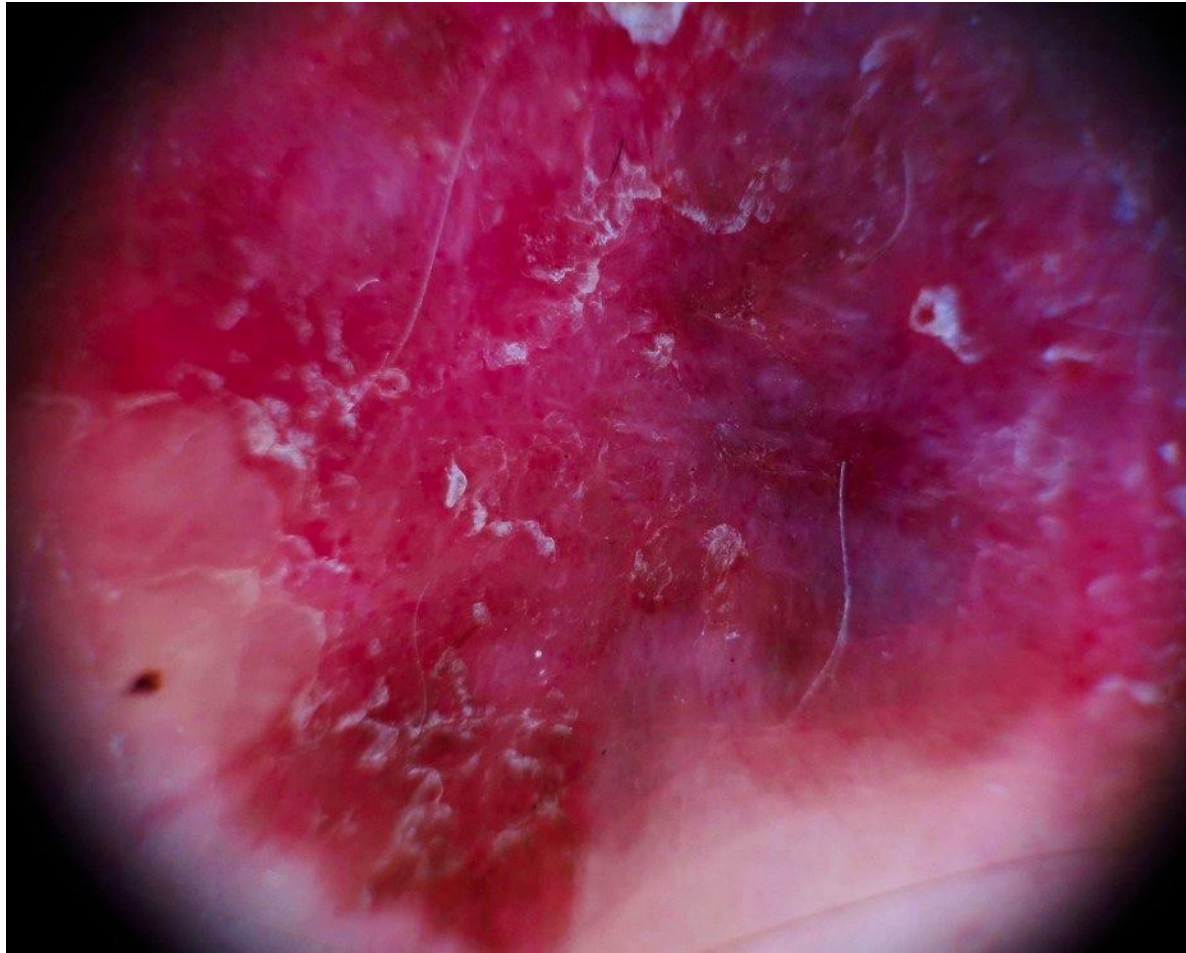
- Clusters of dots and coiled vessels
- Scale



SCC in situ



SCC in situ



What are signs of pigmented SCC?

- CHAOS + Clues

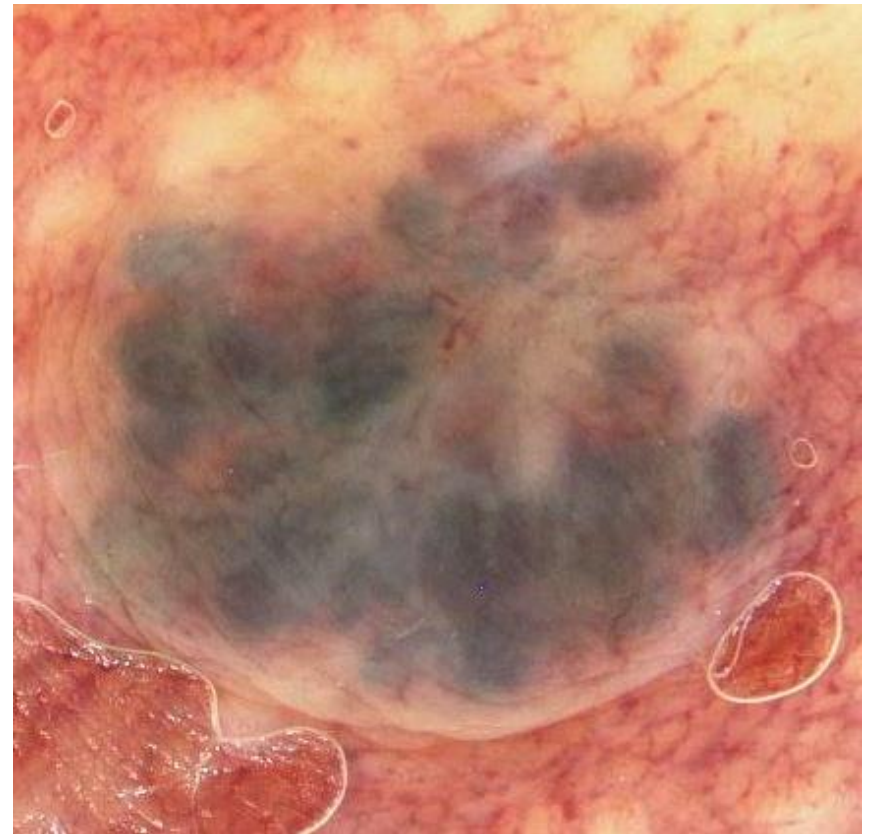
1. Eccentric structureless zones of any colour
2. Gray circles, lines, dots, clods
- ~~3. Black dots or clods at periphery~~
4. Focal ~~pseudopods~~ or radial lines at periphery
5. White lines
- ~~6. Thick reticular lines~~
- ~~7. Polymorphous vessels~~
- ~~8. Parallel lines on the ridges (acral lesions only)~~

Vascular lesions

Red / purple / blue clods



“Lacunes”



Pattern + colour + clues

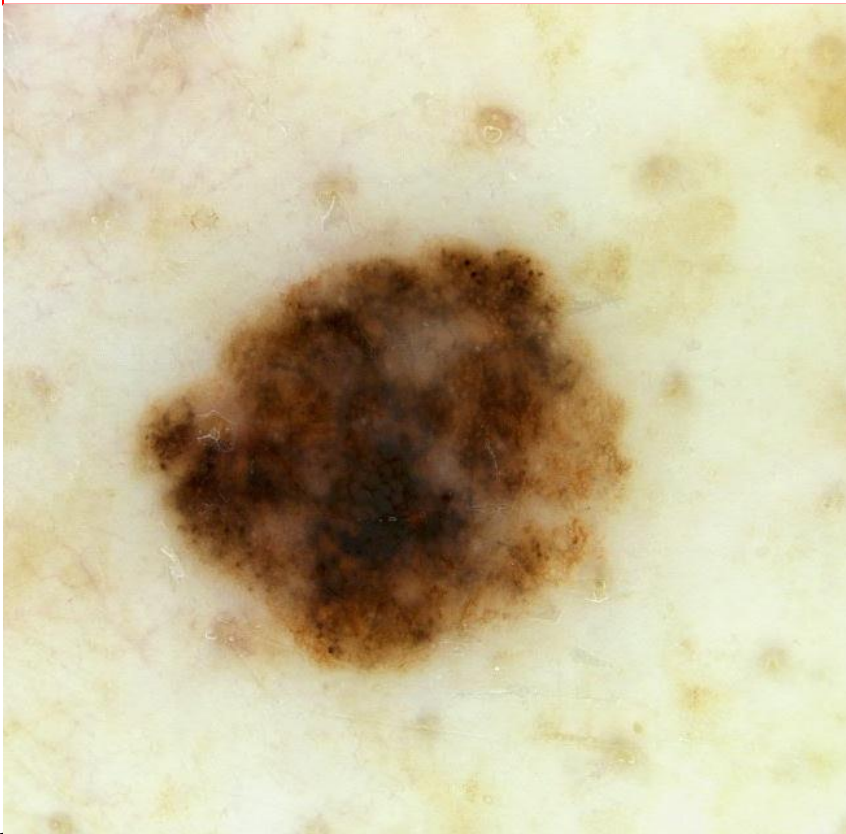
= Diagnosis

General impressions

- Number of patterns:
1, 2, 3?
- Generally symmetrical
or asymmetrical?
- Lines
- Circles
- Clods
- Dots
- Structureless

Which would you excise?

A



B



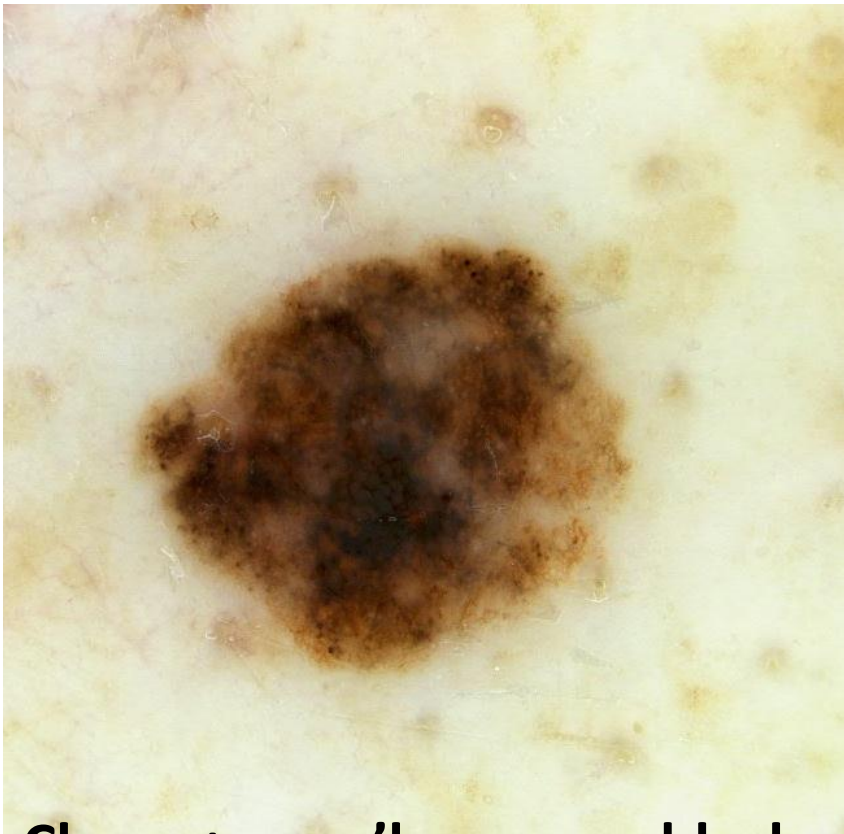
• A?

• B?

• Both?

Excise A

Melanoma



Chaos + ecc.s'less, grey, black dots, thick lines

Lentiginous naevus



2 patterns, symmetrical

Which would you excise?

A



B



• A?

• B?

• Both?

Excise both

Melanoma



Chaos + ecc. s'less, thick lines

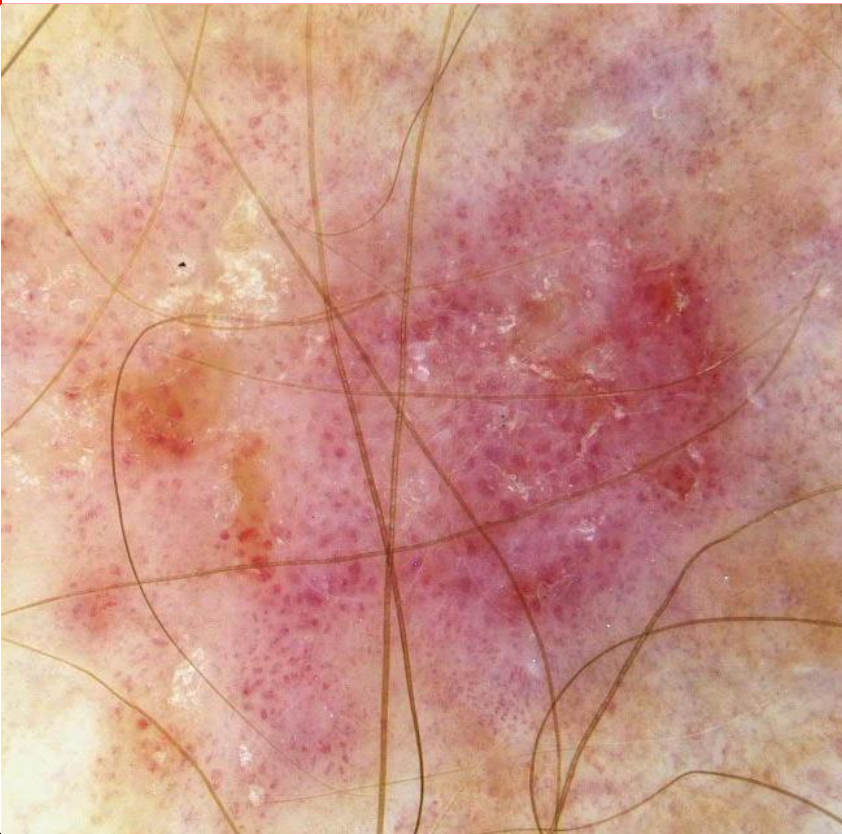
Melanoma



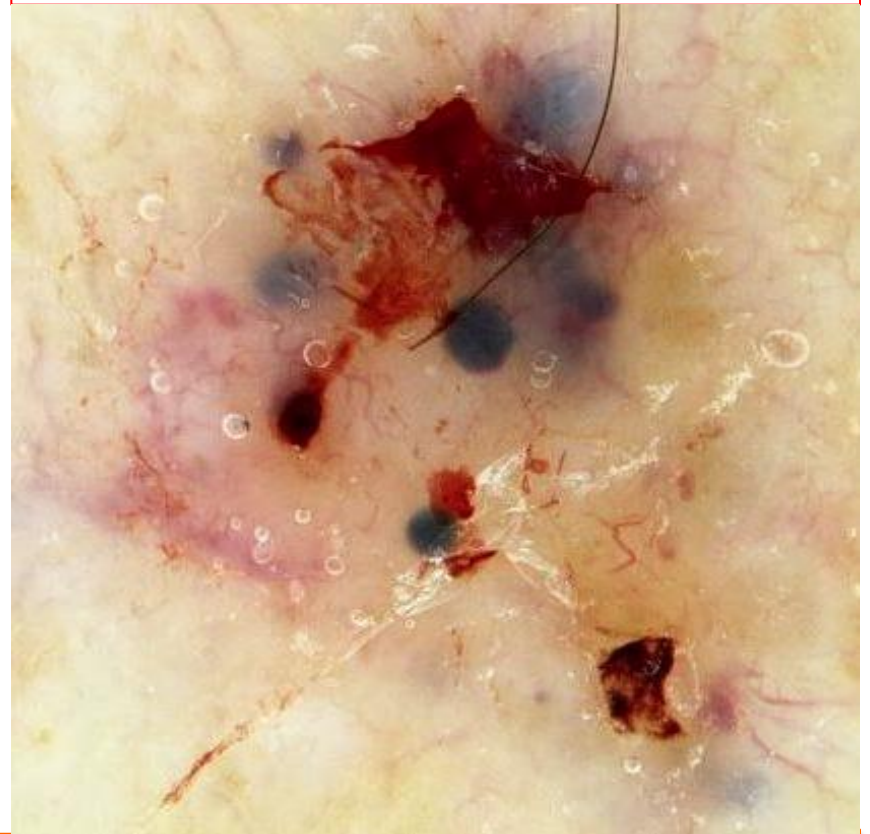
Chaos + ecc. s'less, thick lines

Which would you excise?

A



B



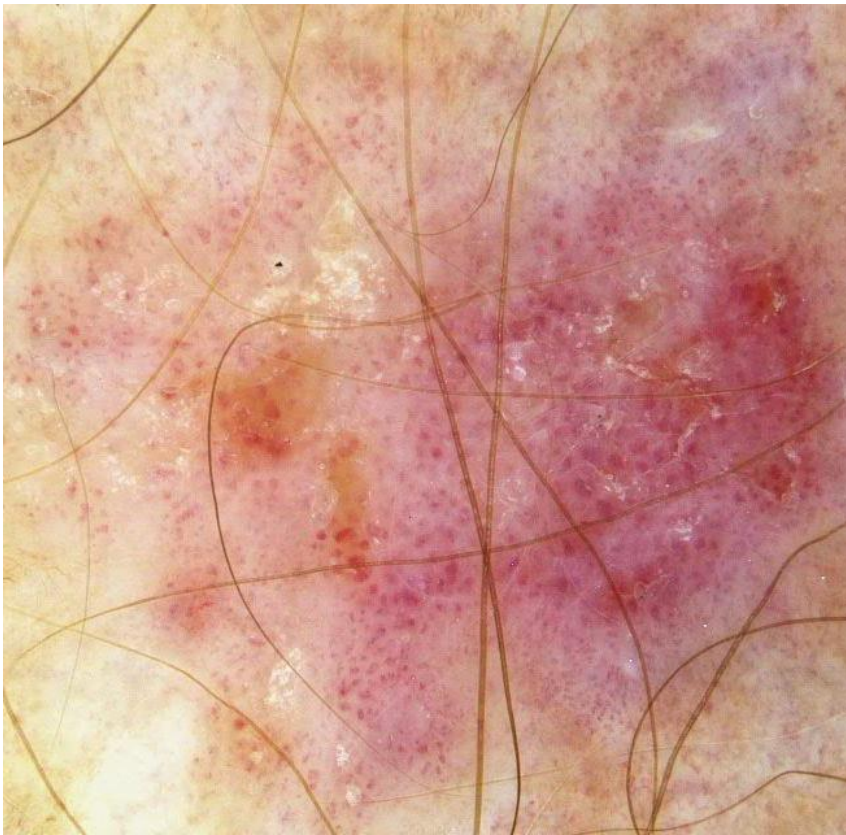
• A?

• B?

• Both?

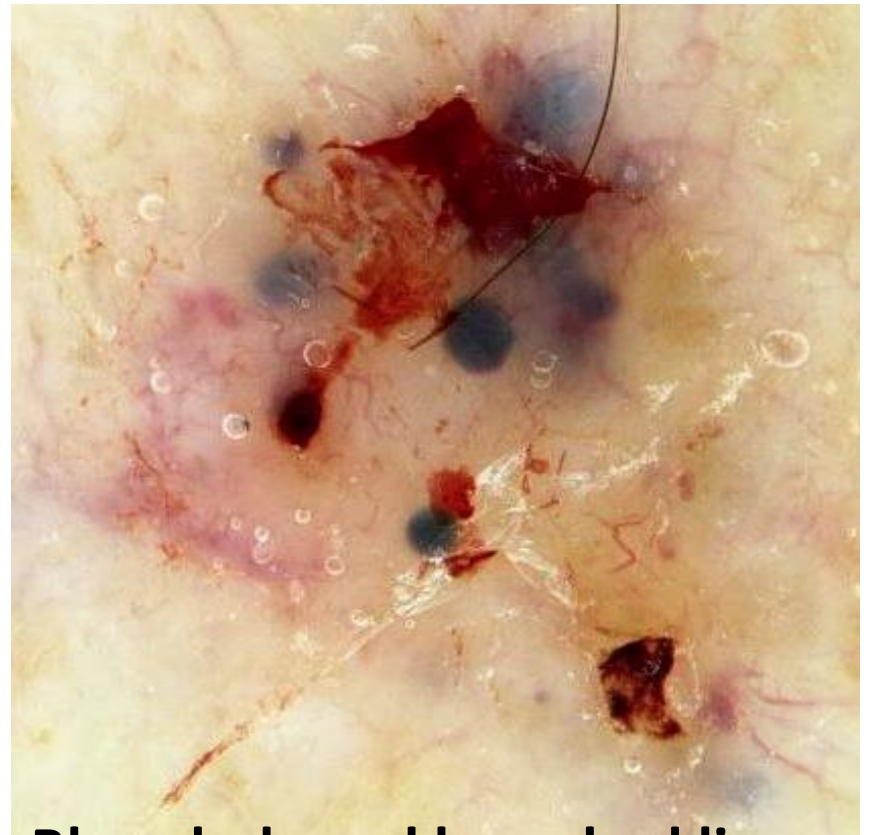
Excise both

SCC in situ



Clusters of red clods

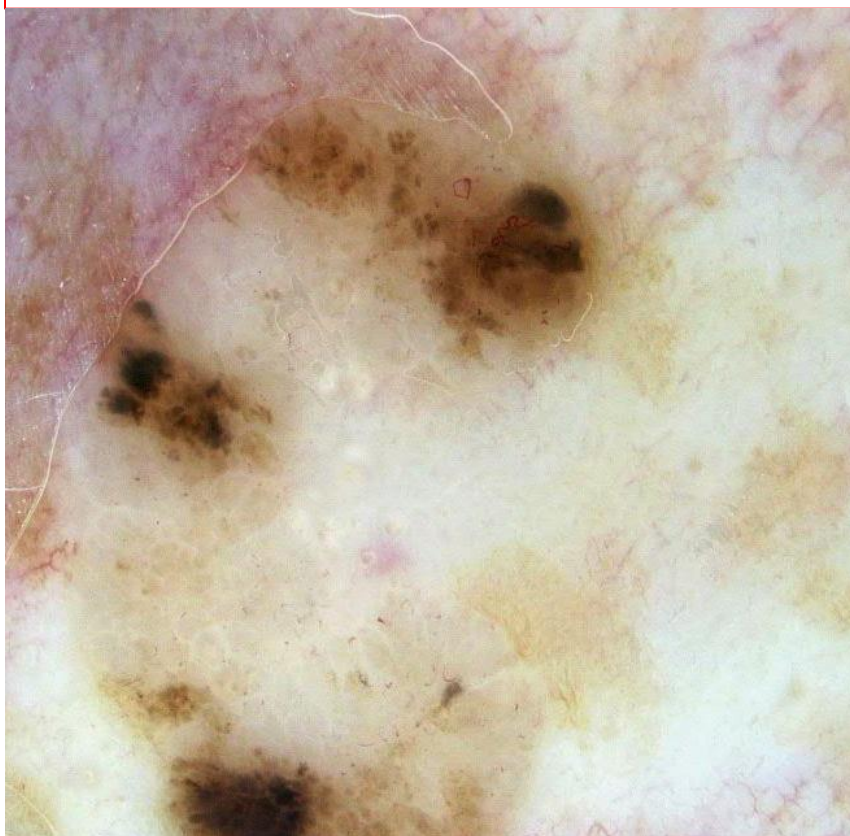
BCC



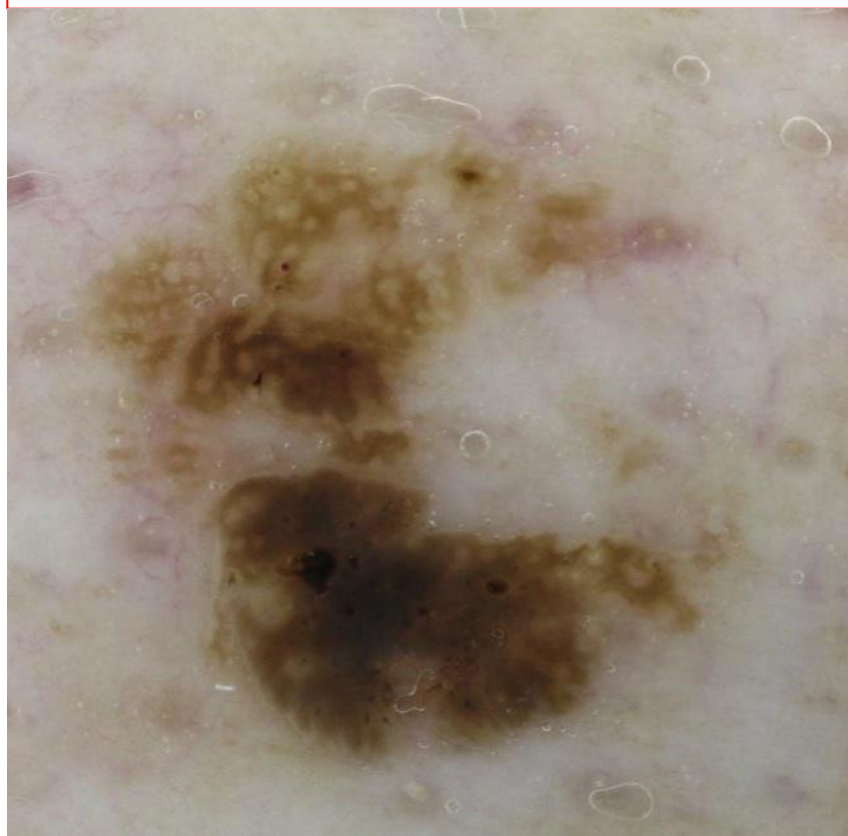
**Blue clods, red branched lines,
ulceration**

Which would you excise?

A



B



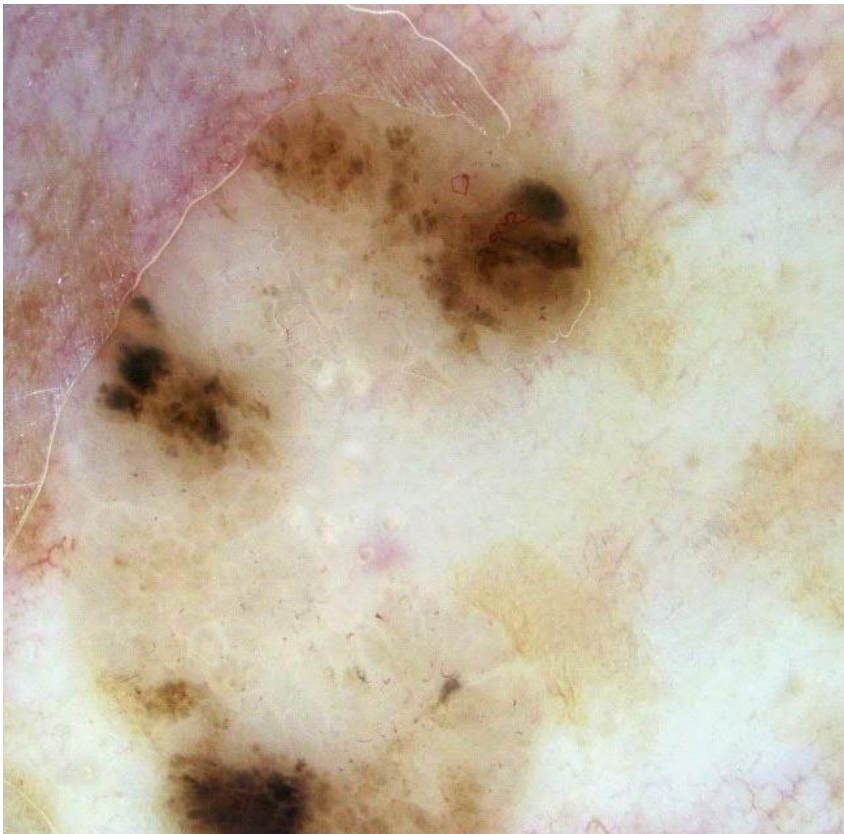
• A?

• B?

• Both?

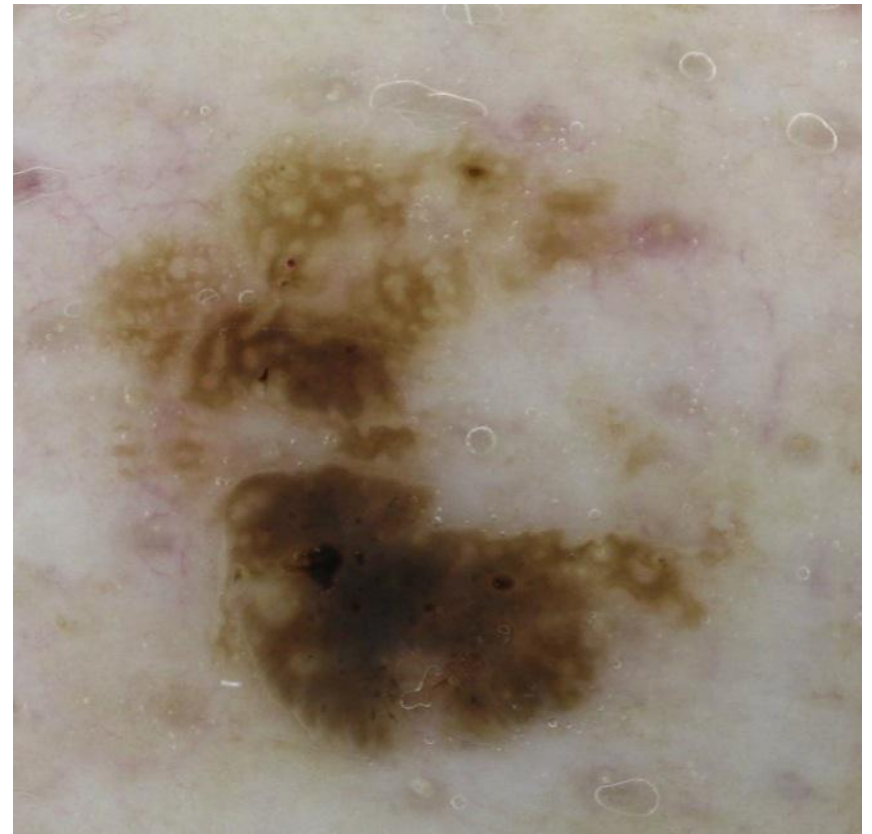
Excise A

Malignancy



Blue-black peripheral clods

Seborrhoeic keratosis



Curved thick lines, clods

When to monitor melanocytic lesions

Risk factors for melanoma

- Ageing >40 years
- Previous melanoma
- Previous other skin cancer
- Multiple moles
- Odd-looking moles
- Strong FH melanoma
- Sunburn in childhood
- Fair skin, blue eyes, freckles

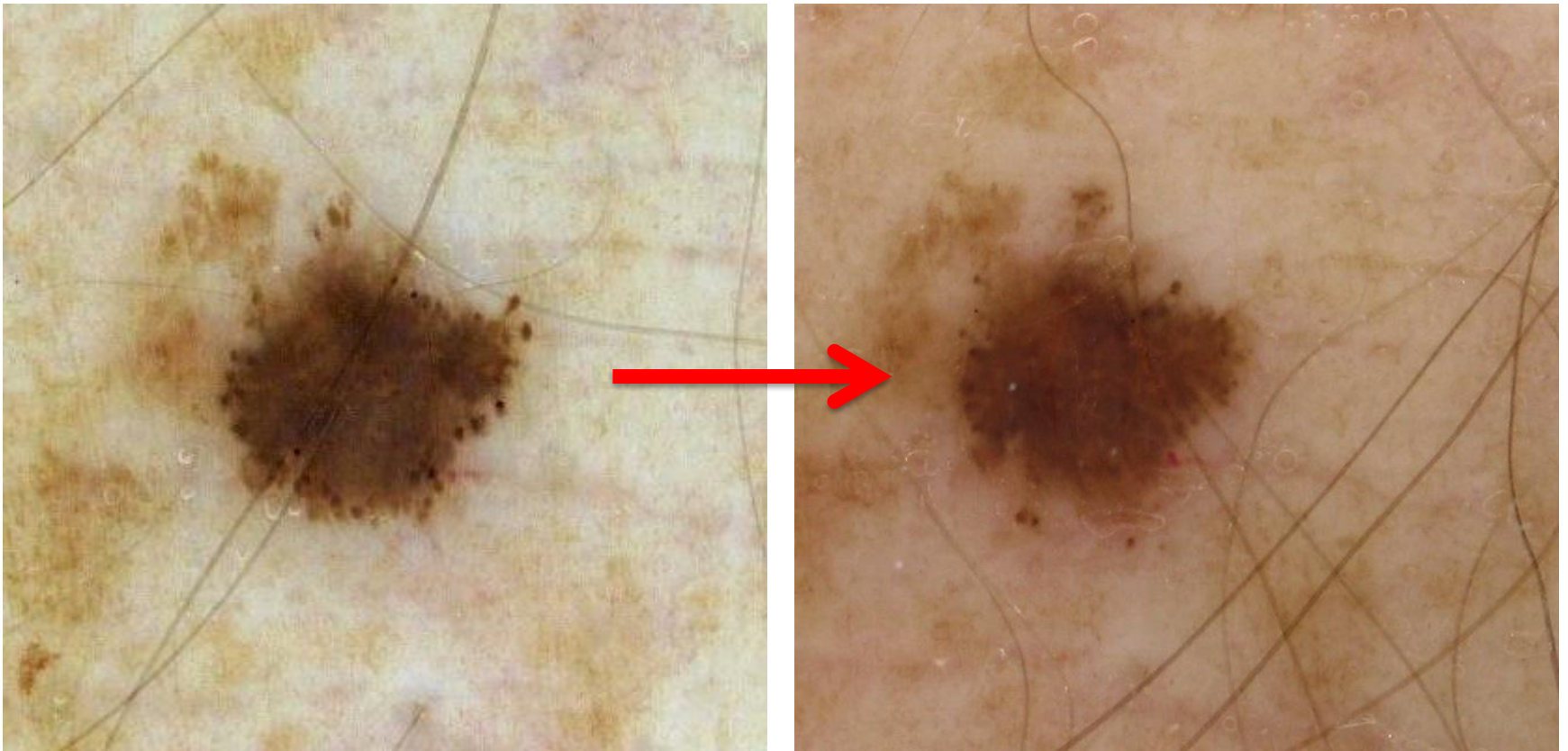
One lesion of concern

- Flat lesion
- Evolving or may be evolving
- 'Atypical' i.e. diagnosis uncertain

Good lesion to monitor: 2.5 mm

2009

2011



Lesion changed, therefore excise

When not to monitor

Low risk of melanoma

- Young <40 years
- No skin cancer
- Few moles
- Common moles
- No FH melanoma
- Never sunburned
- Darker skin type

One lesion of concern

- Thickened lesion
- Nodular lesion
- Evolving or may be evolving
- Atypical i.e. diagnosis uncertain
 - Could it be a nodular melanoma?
 - > **Excise**

Don't monitor this one!



Thick melanoma

How to monitor melanocytic lesions

Short term follow-up

- Careful documentation
- Photography
 - macro + dermatoscopy
- Review 3 months and rephotograph
 - macro + dermatoscopy
- If uncertain, obtain 2nd opinion

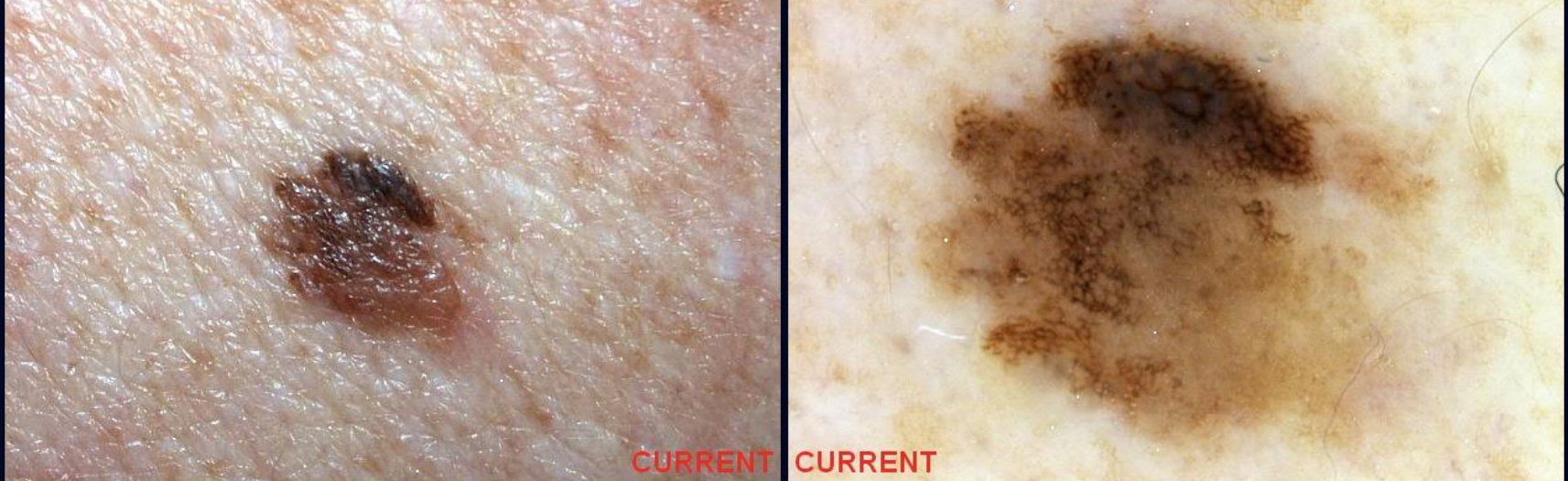
Long-term surveillance

- Annual full skin check
- Consider mole mapping
 - Many moles
 - Unusual moles
 - Patient reassurance

What is digital dermatoscopy?

- Moles are assigned to a body site (mapping)
- Full-body anatomic images
- Macroscopic images of lesions of concern
- Dermatoscopic images of these lesions
- Expert review of the images
- Standardised so follow-up imaging under near identical circumstances

Digital dermatoscopy

			
OVERVIEW - 25430446 - MICROS	DIAGNOSIS	MANAGEMENT	LOCATION / BODYSHOT
			BODYSHOT 11-MAY-2011

Lesion 1

Benign or Malignant?

- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 1

Benign or **Malignant**

- a) Melanocytic naevus?
- b) Melanoma**
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 2

Benign or Malignant?

- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 2

Benign or Malignant?

- a) Melanocytic naevus?
- b) Melanoma?
- c) **Seborrhoeic keratosis**
- d) Basal cell carcinoma?



Lesion 3

Benign or Malignant?

- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 3

Benign or Malignant?

- a) Melanocytic naevus
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 4

Benign or Malignant?

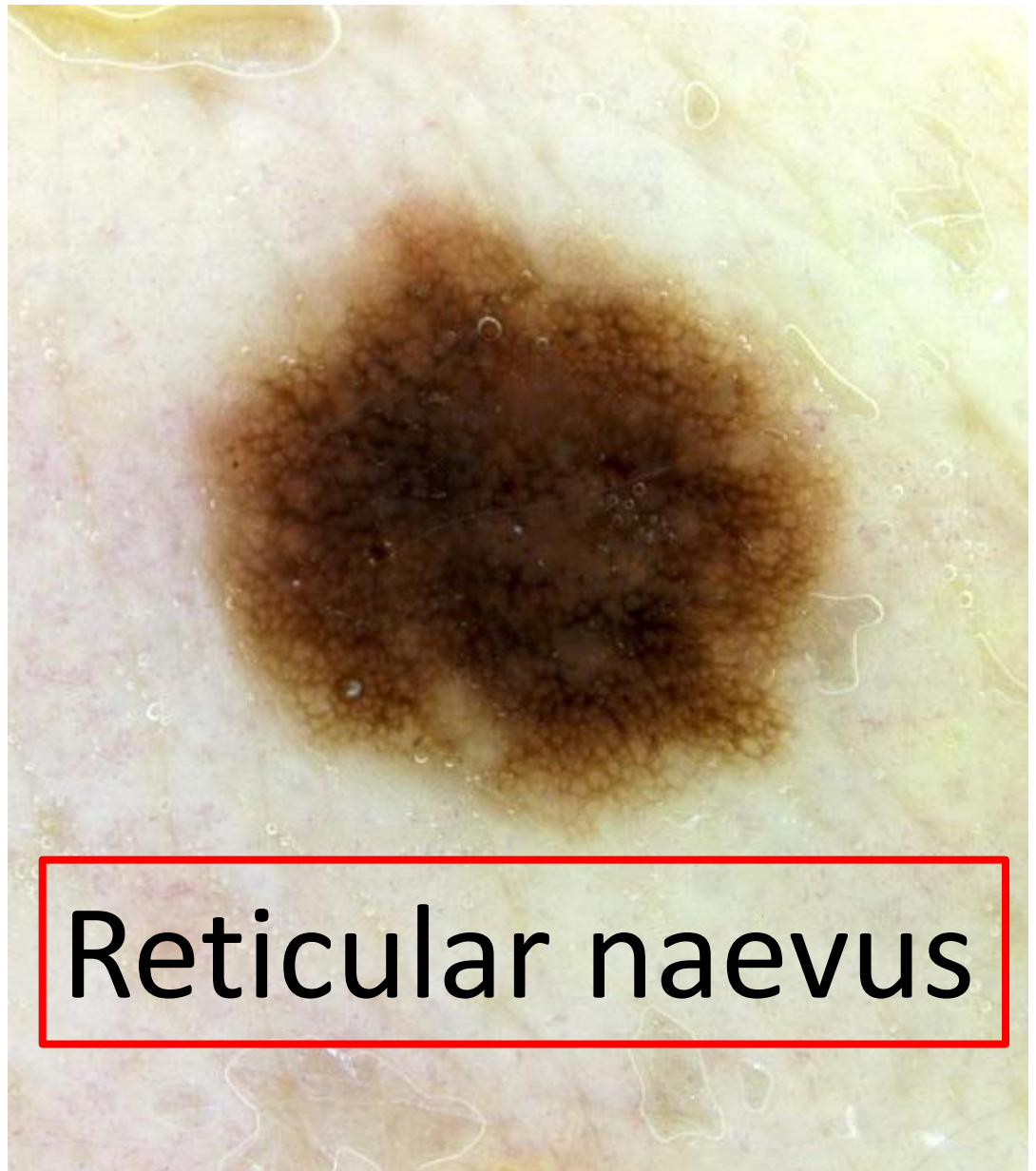
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 4

Benign or Malignant

- a) Melanocytic naevus
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?

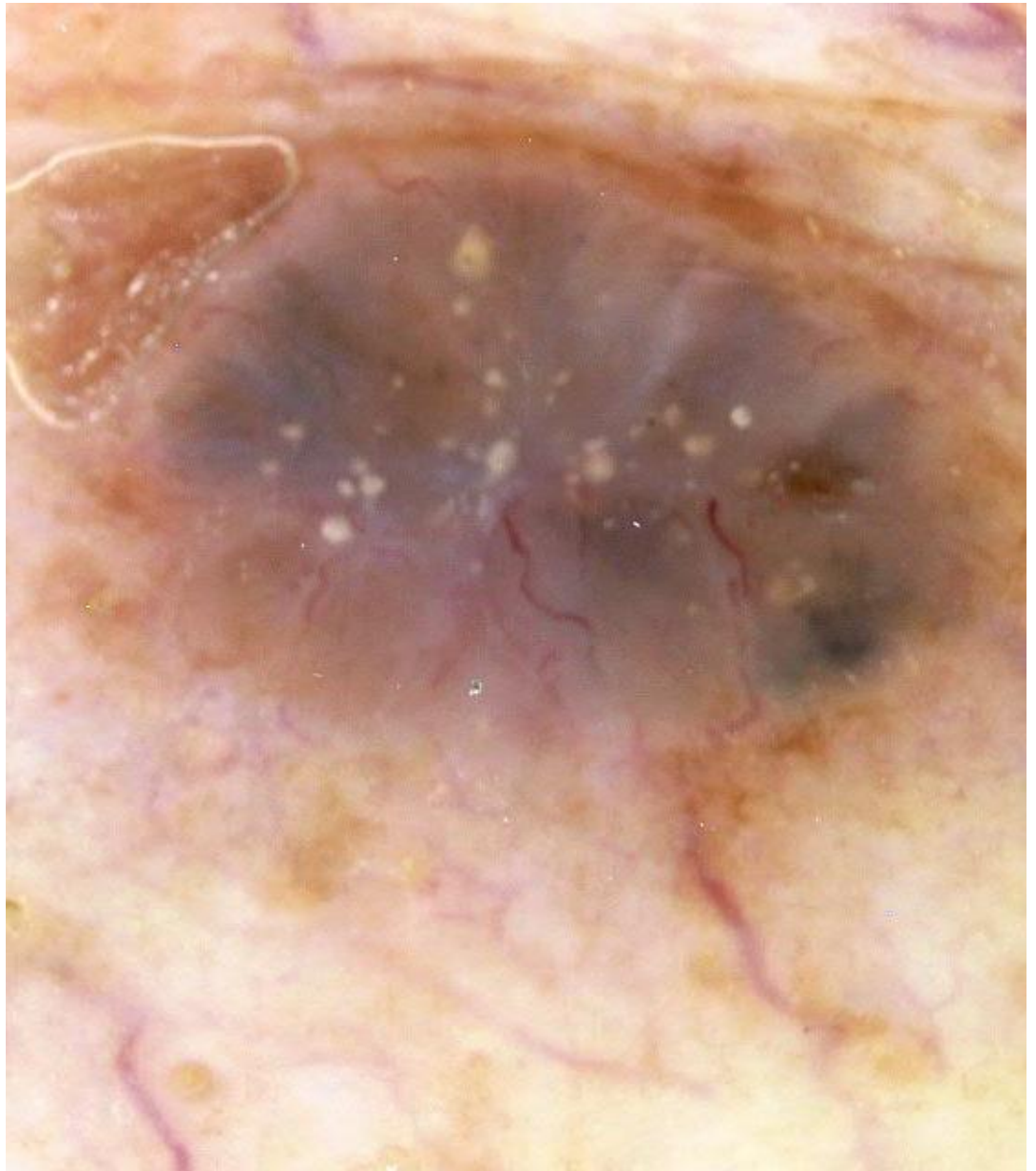


Reticular naevus

Lesion 5

Benign or Malignant?

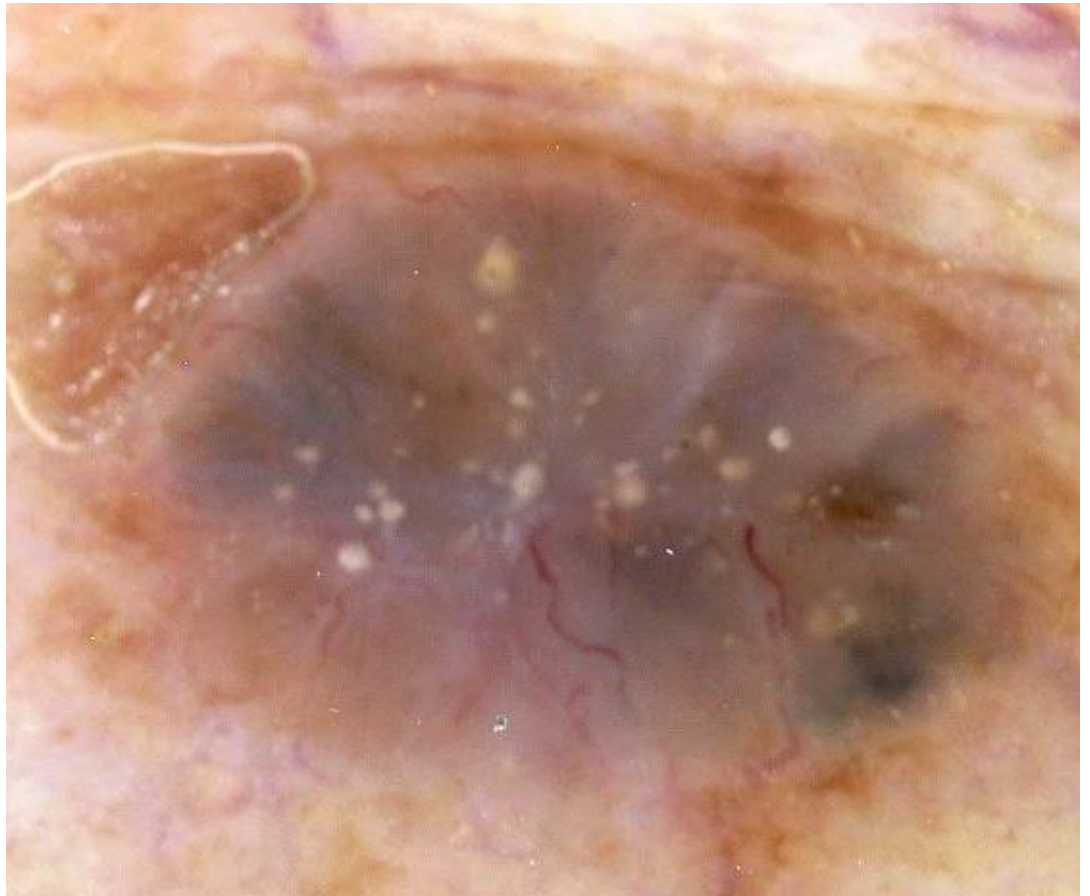
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 5

Benign or **Malignant**

- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) **Basal cell carcinoma**

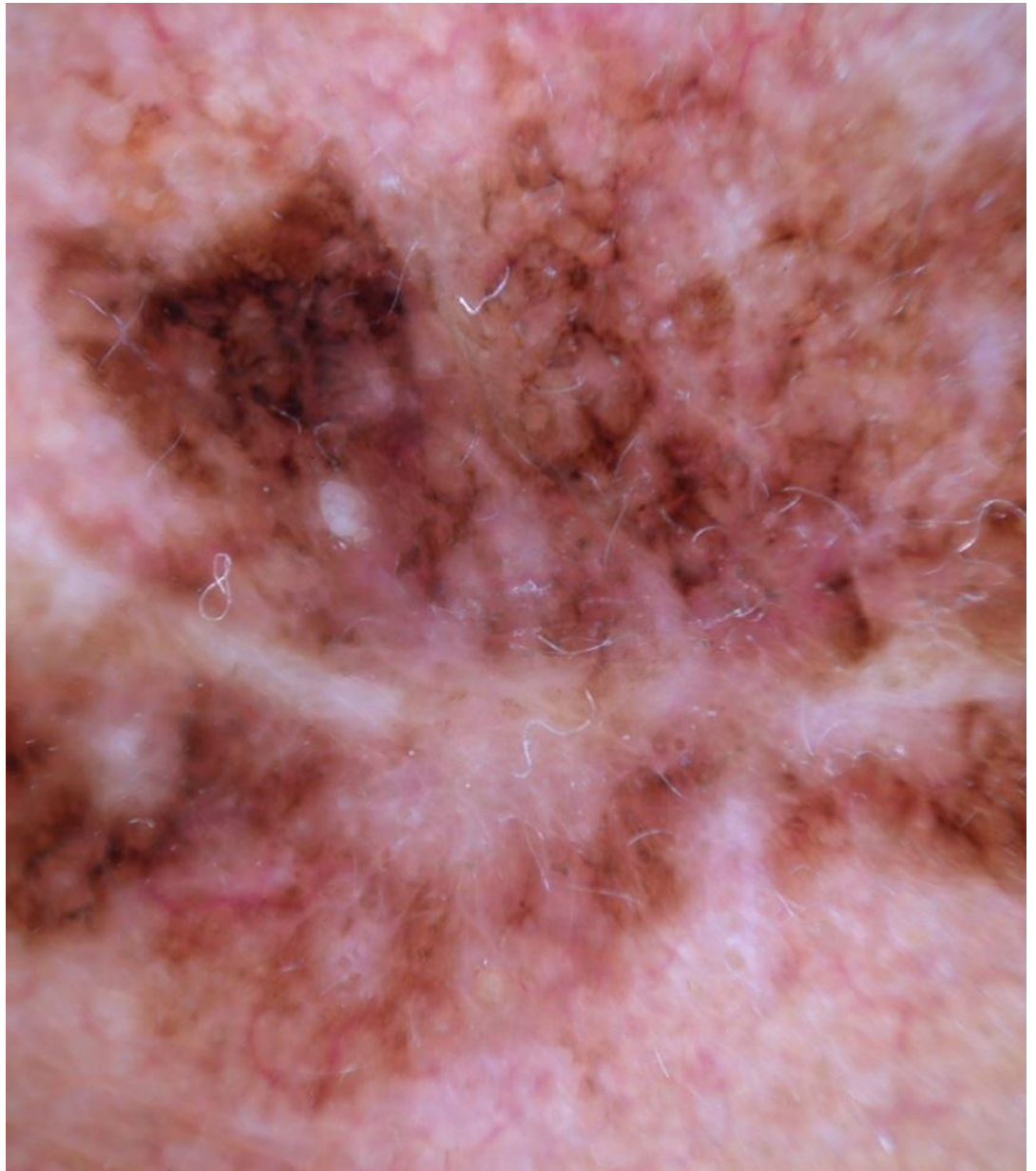


**Pigmented
nodulocystic BCC**

Lesion 6

Benign or Malignant?

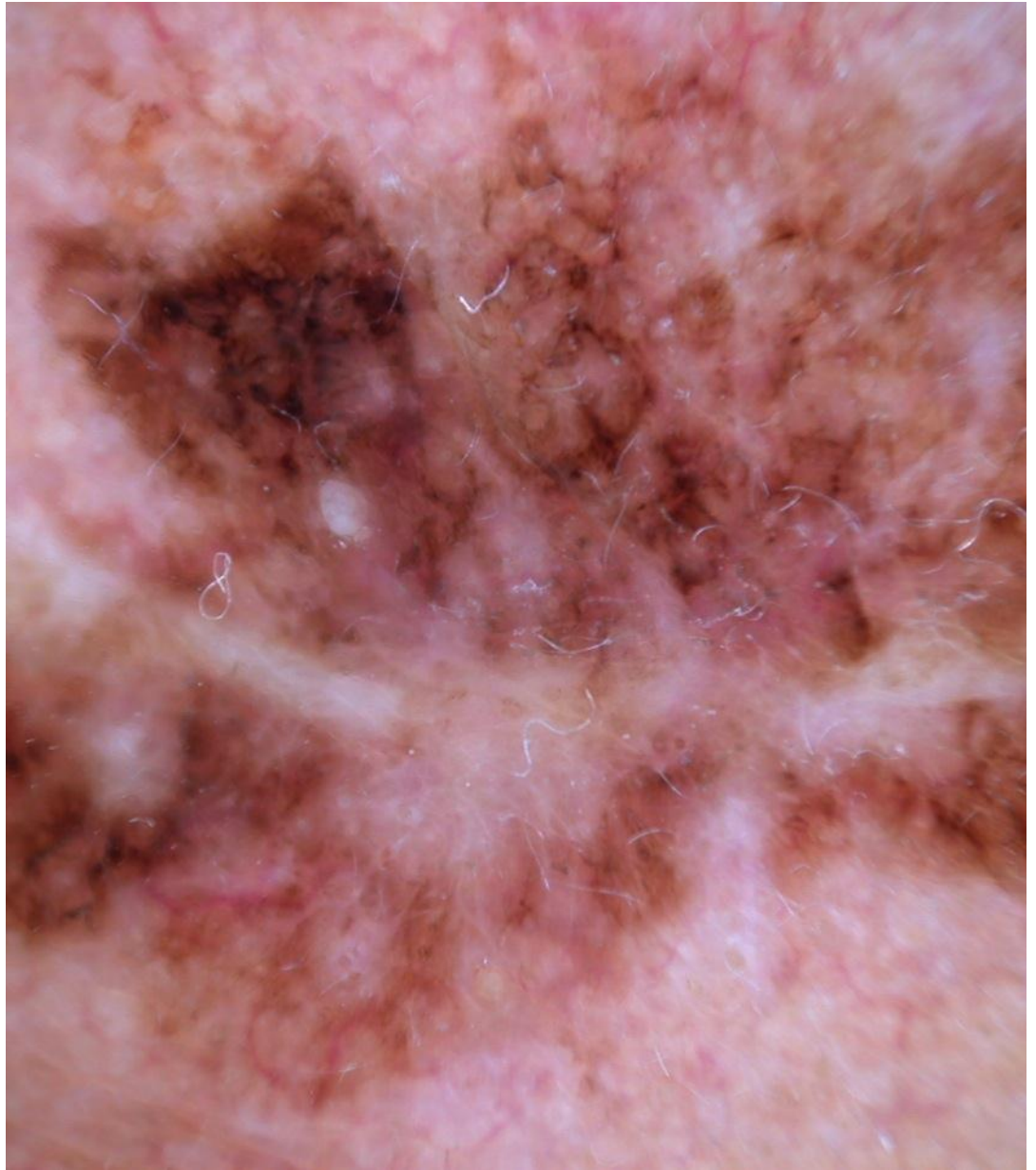
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 6

Benign or **Malignant**

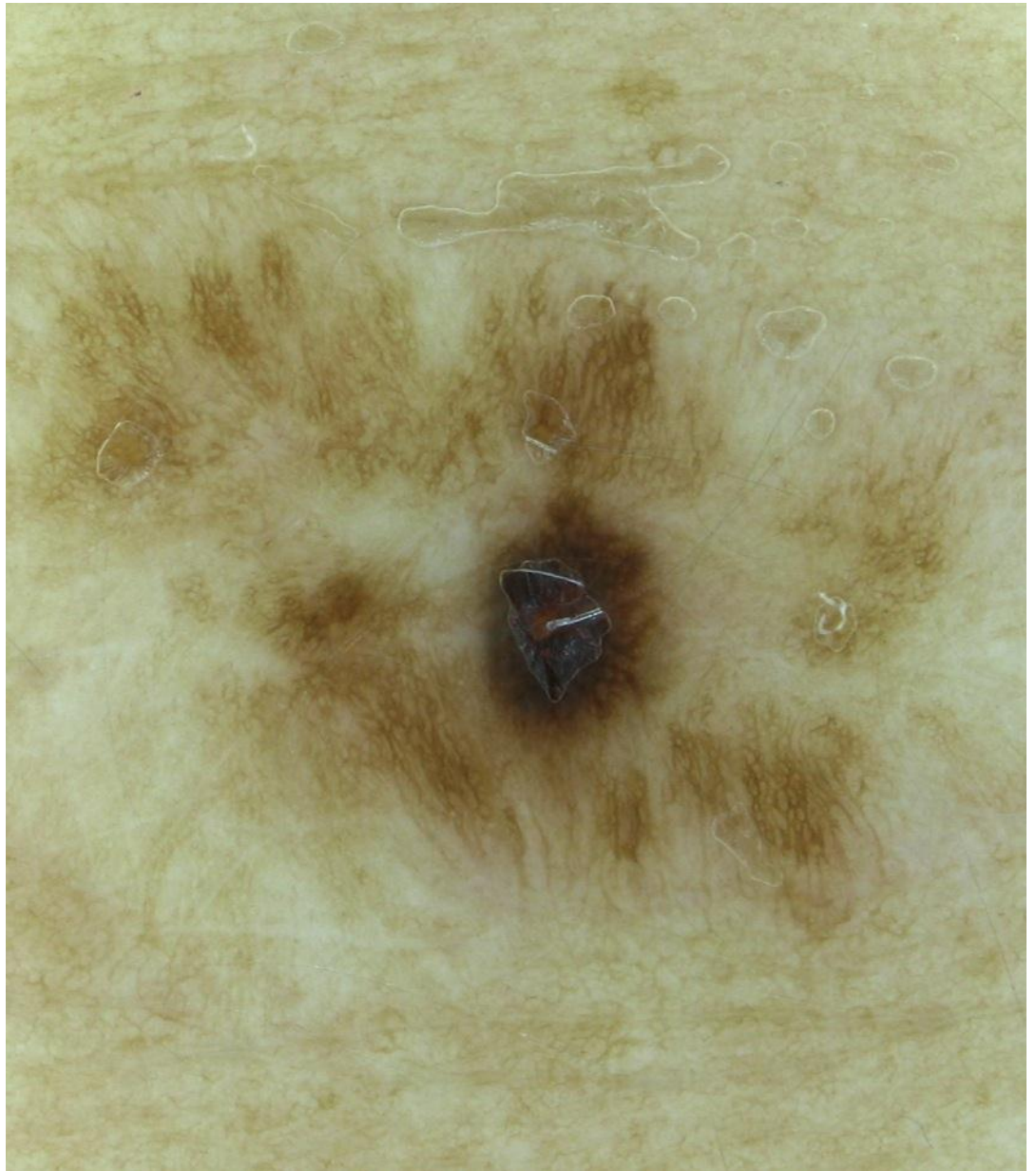
- a) Melanocytic naevus?
- b) Melanoma**
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 7

Benign or Malignant?

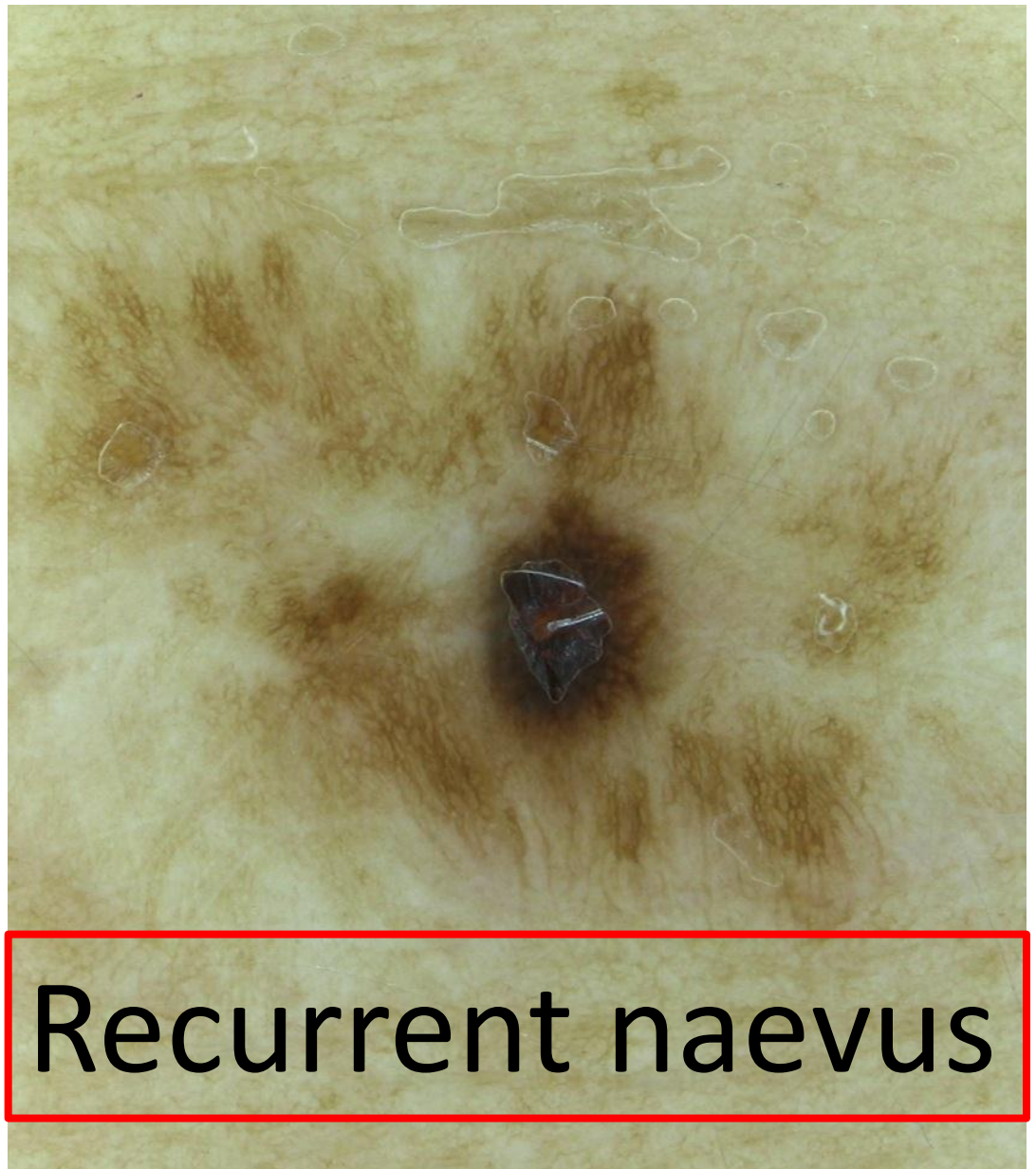
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 7

Benign or Malignant

- a) Melanocytic naevus
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 8

Benign or Malignant?

- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 8

Benign or Malignant?

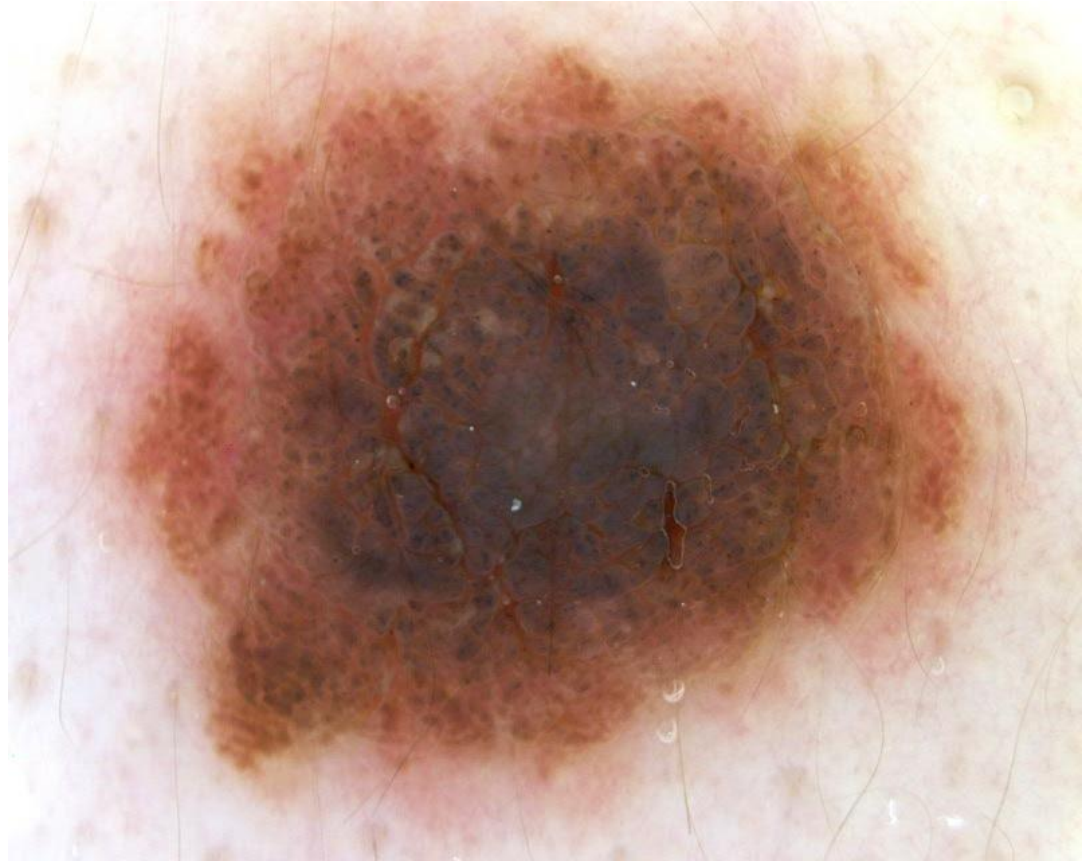
- a) Melanocytic naevus
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 9

Benign or Malignant?

- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 9

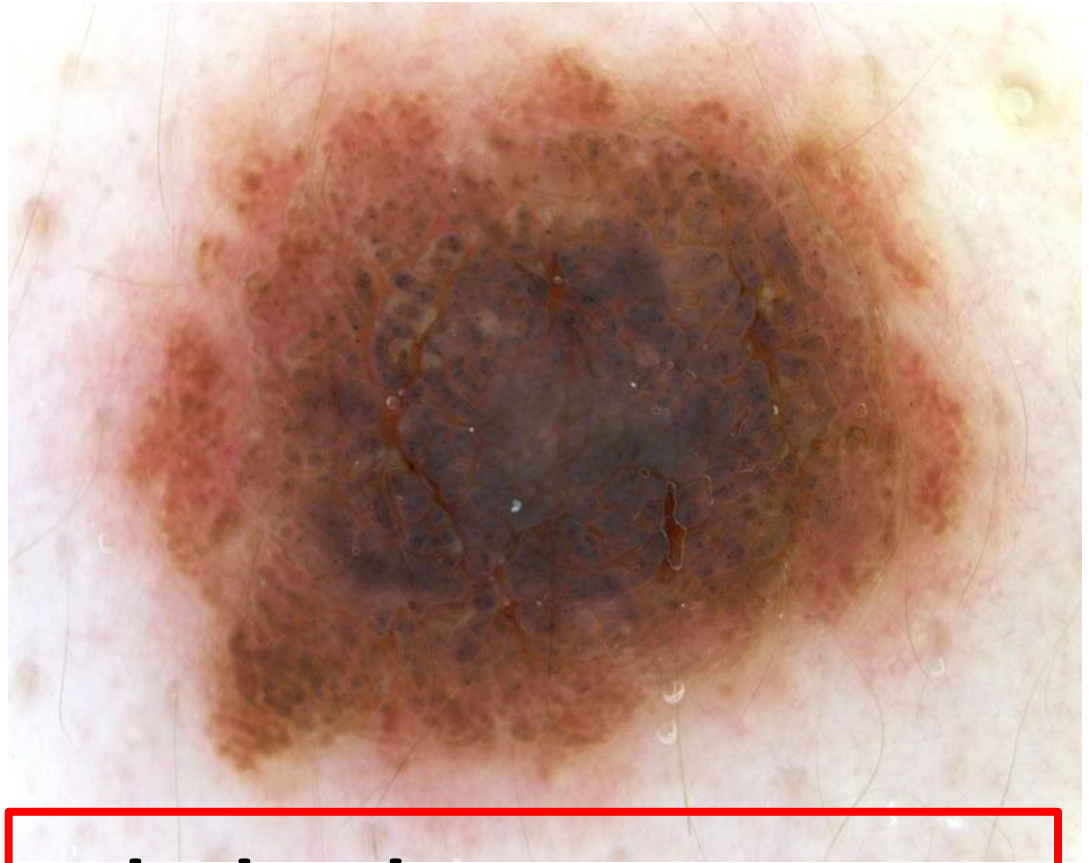
Benign or Malignant

a) Melanocytic
naevus

b) Melanoma?

c) Seborrhoeic
keratosis?

d) Basal cell
carcinoma?

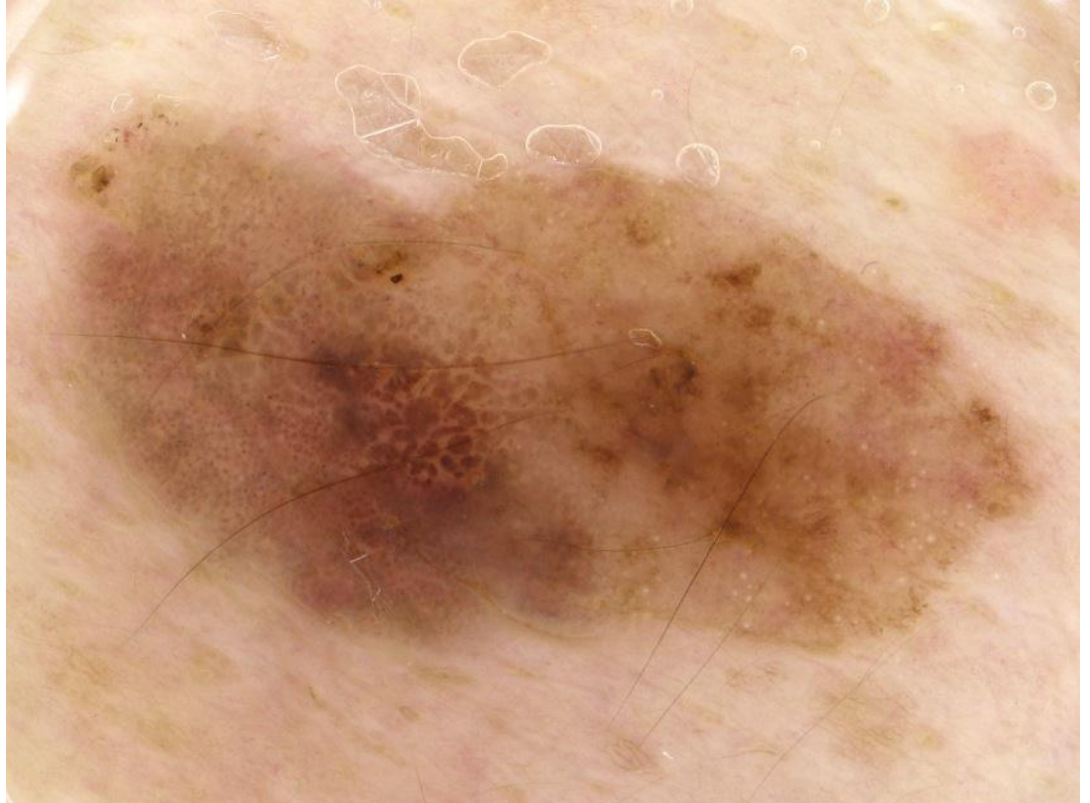


Globular naevus
“congenital”

Lesion 10

Benign or Malignant?

- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 10

Benign or Malignant?

- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Chaos + clues
Cut it out!

Message: If chaos, look for clues

If clues, cut it out!

Non-pigmented lesions

Consider vascular patterns

Patterns of blood vessels

- Red lines, dots, clods
- Straight, curved, looped, serpentine, helical, coiled
- Thick, thin, short
- Random, clustered, serpiginous, linear, centred, reticular, radial, branched
- Monomorphous or polymorphous

Morphology of vascular patterns

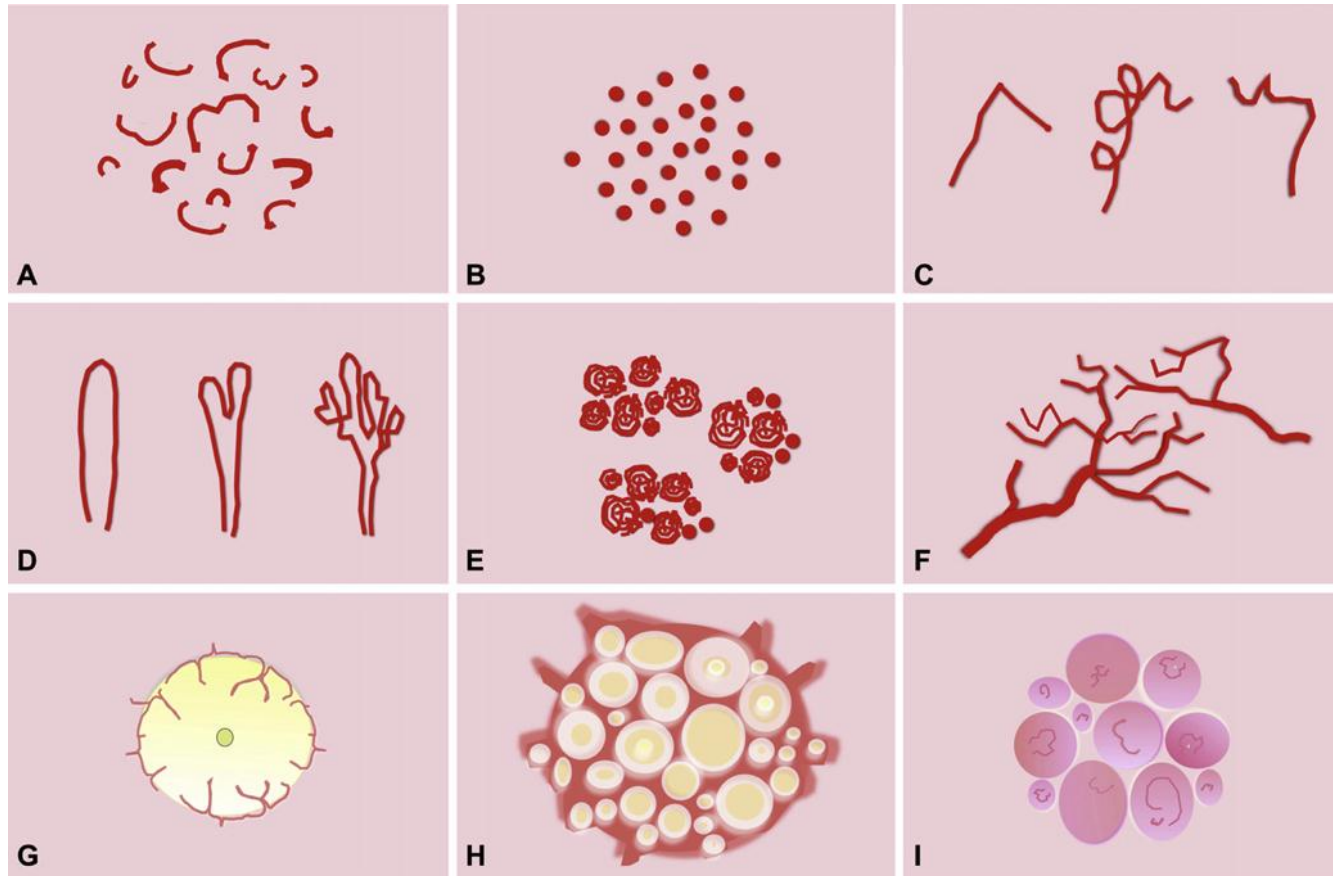


Fig 1. Schematic drawing of the six most common morphologic types of vessels (A-F) and three specific global patterns (G-I) of nonpigmented skin tumors. A, Comma-like (linear curved) vessels, (B) dotted (red dots) vessels, (C) linear irregular (linear straight or linear helical) vessels, (D) hairpin (linear looped) vessels (from left to right: single stranded, double stranded, and twisted), (E) glomerular (linear coiled) vessels, (F) arborizing (linear serpentine) vessels, (G) crown (linear straight) vessels, (H) strawberry pattern, and (I) milky red globules (clods).

Architectural arrangement of vessels

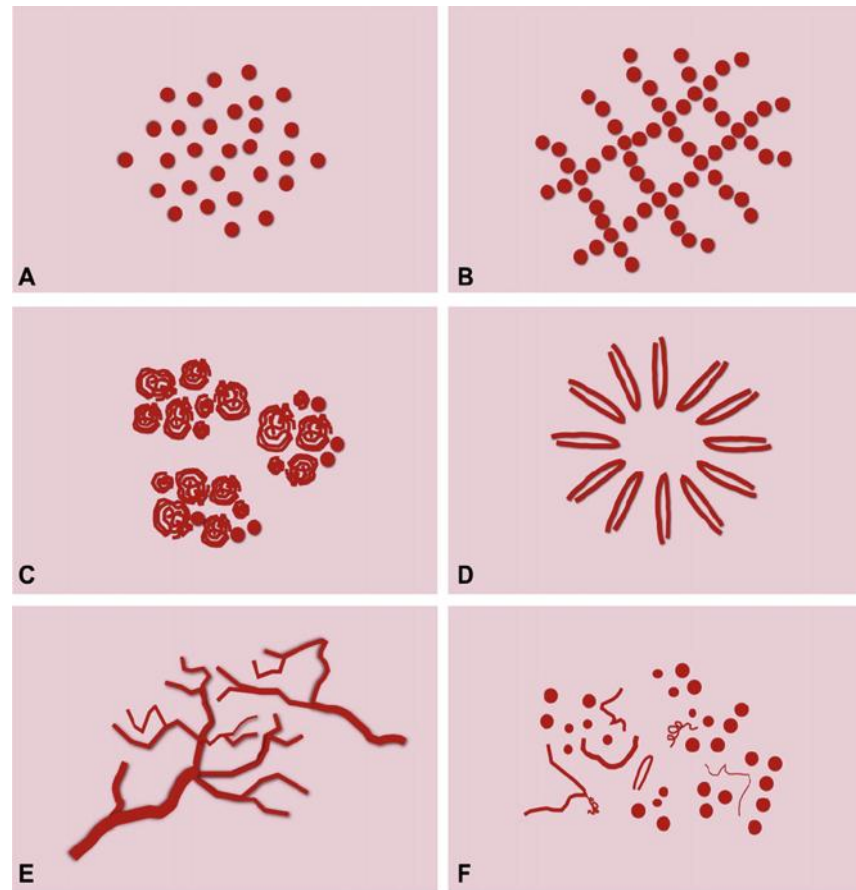


Fig 2. Schematic drawing of vascular arrangements. **A**, Regular, **(B)** in a string, **(C)** clustered, **(D)** radial, **(E)** irregularly branched, and **(F)** irregular.