



Associate Professor Amanda Oakley

Dermatologist

Hamilton

Thursday, June 8, 2017

8:30 - 10:30 WS #3: Dermoscopy Workshop Part 1

11:00 - 13:00 WS #10: Dermoscopy Workshop Part 2

14:00 - 16:00 WS #16: Dermoscopy Workshop Part 1 (Repeated)

16:30 - 18:30 WS #22: Dermoscopy Workshop Part 2 (Repeated)



Professor H. Peter Soyer

Academic Dermatologist

The University of
Queensland

Brisbane

(Room 5)

Dermoscopy workshop Pt 2

Modified pattern recognition + Chaos and clues

Adjunct Assoc Prof Amanda Oakley
Dermatologist



DermNet NZ
All about the skin



Tristram Clinic



Content of workshop

- Context
- Short test
- Dermatoscopes
- Modified pattern analysis
 - Naevi, angioma, dermatofibroma, solar lentigo, seborrhoeic keratosis, BCC, melanoma
- Ugly duckling sign

CONTEXT

Standards of Service Provision for Melanoma Patients in New Zealand – *Provisional*

National Melanoma Tumour Standards
Working Group

Standard 1.1

Patients are offered evidence-based information on risk factors, prevention and early detection of melanoma.

- Risk factors are age, prior melanoma / skin cancer / sun damage, many/large moles
 - But two-thirds melanoma in average-risk subjects
- Nearly all skin cancer relates to UVR exposure
 - Protect skin from UVR (sun, indoor tanning beds)
 - Behaviour, clothing, SPF 50+ sunscreen
- Teach self skin-examination
 - If risk factors, annual full skin check
 - If many moles, digital dermatoscopic surveillance

Standard 1.2

All primary care clinicians are trained to recognise skin lesions suspicious for melanoma.

- Estimate patient's risk of melanoma / NMSC
 - Risk factor widget coming soon
- Stay alert to incidental skin lesions
 - Melanoma + NMSC
- Carry out full skin check
 - Determine what's normal for the patient (moles, freckles, seborrhoeic keratoses, angiomas)

Standard 4.1

Patients have access to a clinician trained in:

- early detection and diagnosis of melanoma, including the use of dermatoscopy
 - surgical skills to undertake excision and direct closure of in-situ or thin melanoma
 - the triage and referral of patients with lesions of uncertain diagnosis, thicker melanoma and lesions on sites where surgery is difficult.
-

- Today's workshop is an introduction to dermatoscopy; it takes practice to be good at it
- Digital dermatoscopy (images) enhances skill
 - Aids referral + clinicopathological correlation
 - Automated devices should not be relied upon
- Surgical skills also take training + practice
 - If you are not doing lots of surgery, refer to someone who is

Standard 4.1

Patients have access to a clinician trained in:

- early detection and diagnosis of melanoma, including the use of dermatoscopy
 - surgical skills to undertake excision and direct closure of in-situ or thin melanoma
 - the triage and referral of patients with lesions of uncertain diagnosis, thicker melanoma and lesions on sites where surgery is difficult.
-

- Today's workshop is an introduction to dermatoscopy; it takes practice to be good at it
- Digital dermatoscopy (images) enhances skill
 - Aids referral + clinicopathological correlation
 - Automated devices should not be relied upon **YET!**
- Surgical skills also take training + practice
 - If you are not doing lots of surgery, refer to someone who is

Standard 4.1

Patients have access to a clinician trained in:

- early detection and diagnosis of melanoma, including the use of dermatoscopy
 - surgical skills to undertake excision and direct closure of in-situ or thin melanoma
 - the triage and referral of patients with lesions of uncertain diagnosis, thicker melanoma and lesions on sites where surgery is difficult.
-

- Today's workshop is an introduction to dermatoscopy; it takes practice to be good at it
- Digital dermatoscopy (images) enhances skill
 - Aids referral + clinicopathological correlation
 - Automated devices may assist in diagnosis
- Surgical skills also take training + practice
 - If you are not doing lots of surgery, refer to someone who is

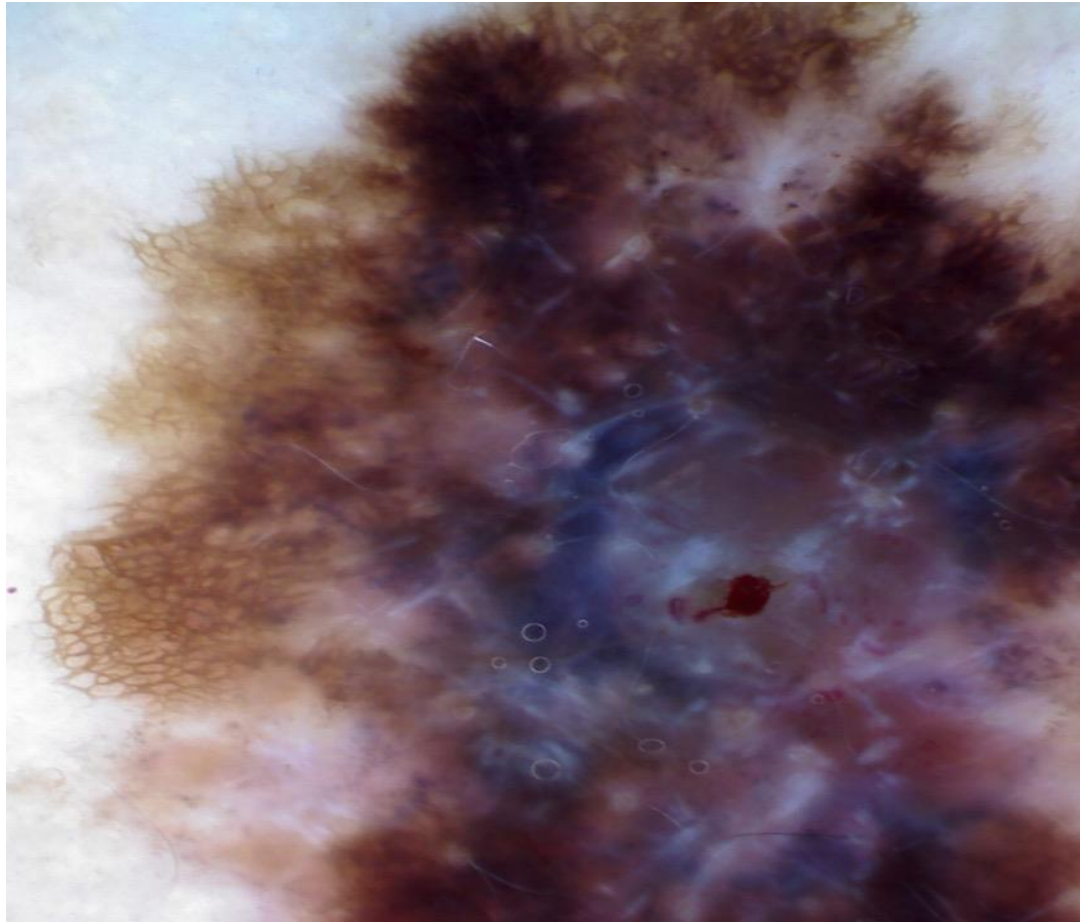
10 seconds to diagnose 10 dermoscopic images

TEST

Lesion 1

Benign or Malignant?

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



Lesion 2

Benign or Malignant?

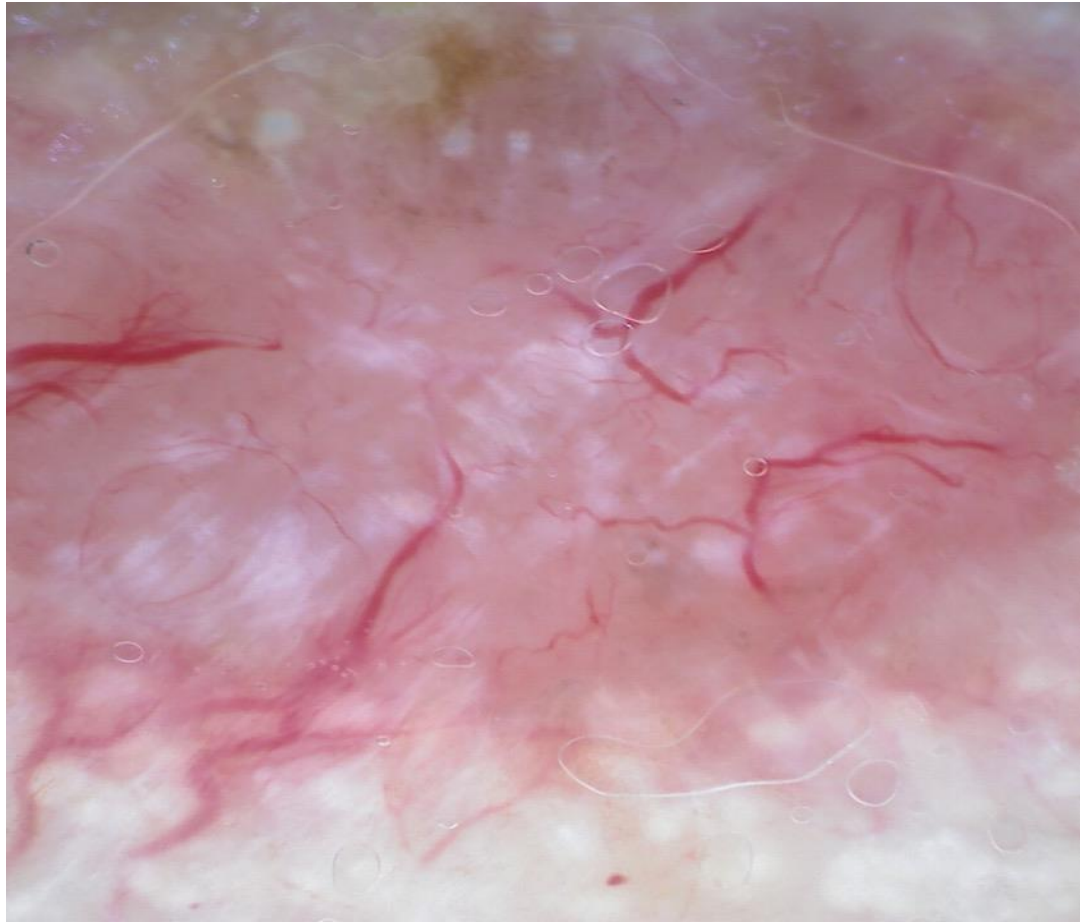
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



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?

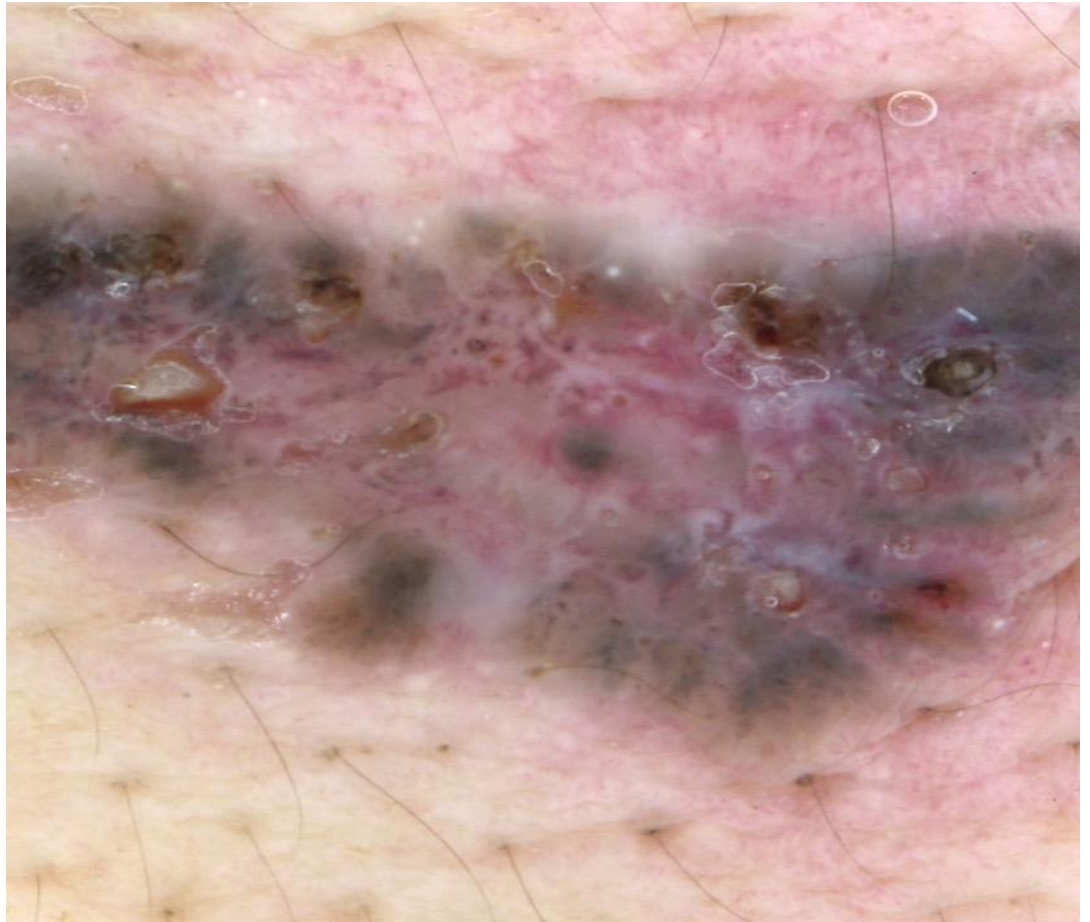
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 6

Benign or Malignant?

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



Lesion 7

Benign or Malignant?

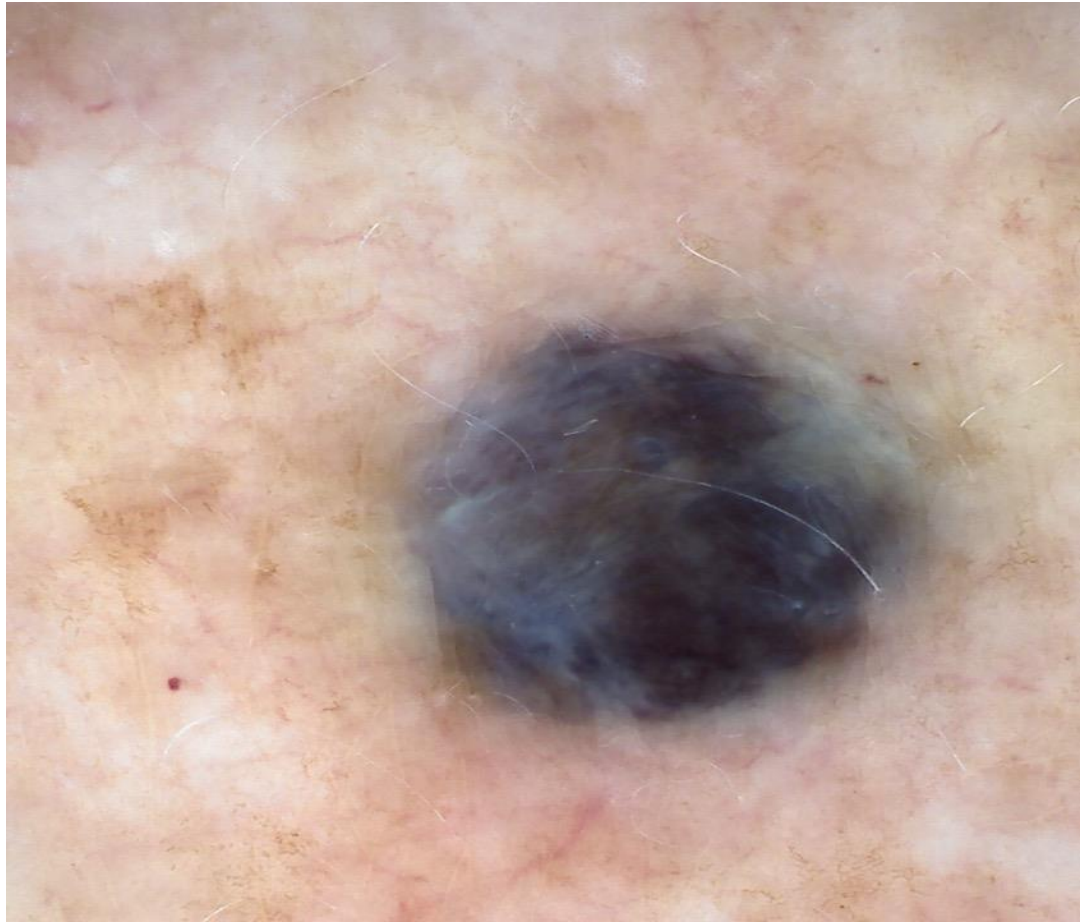
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 8

Benign or Malignant?

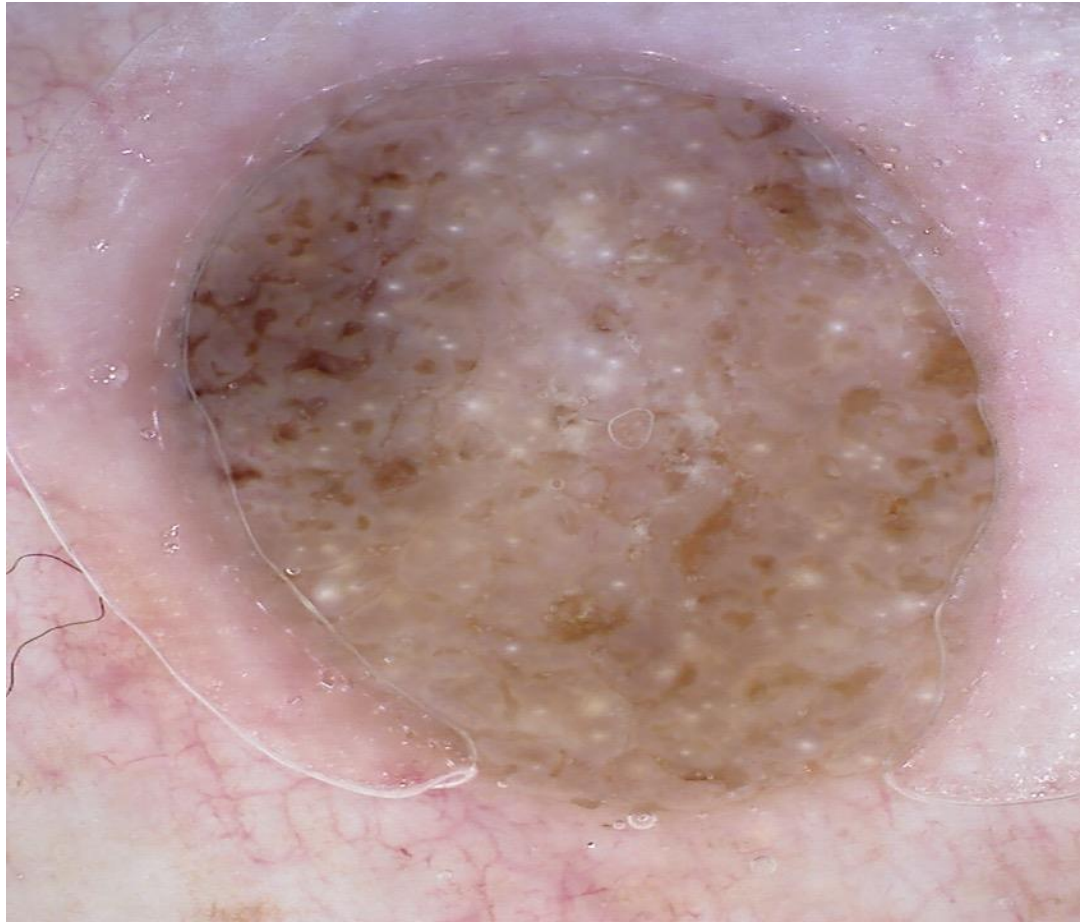
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 9

Benign or Malignant?

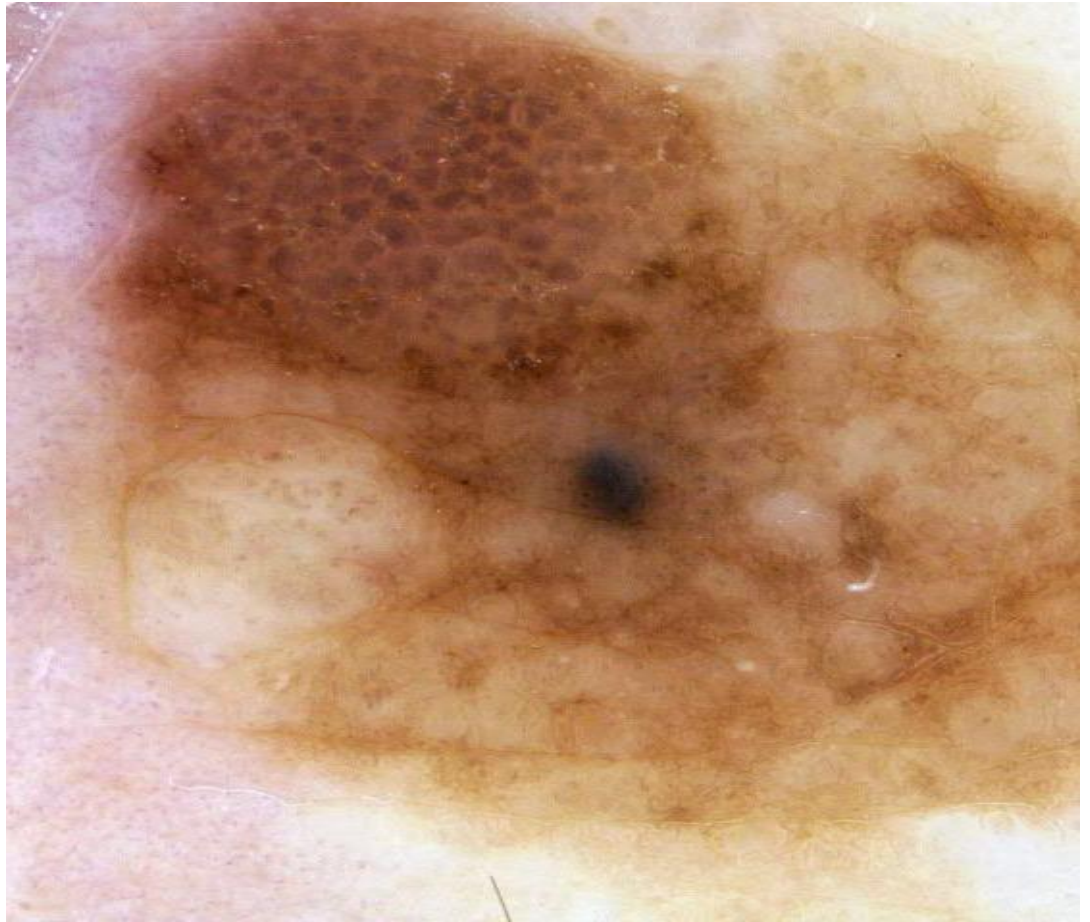
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 10

Benign or Malignant?

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



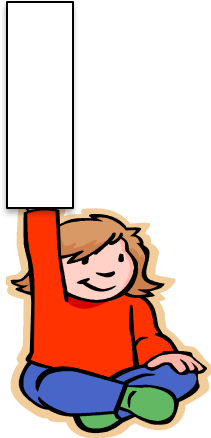
DERMOSCOPY DEVICES

Dermatoscopes

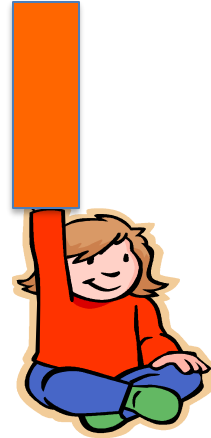


This workshop is interactive

- Option A

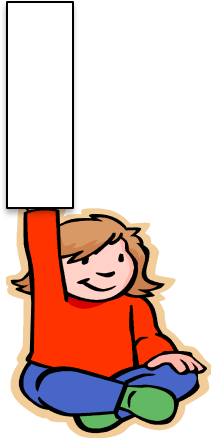


- Option B

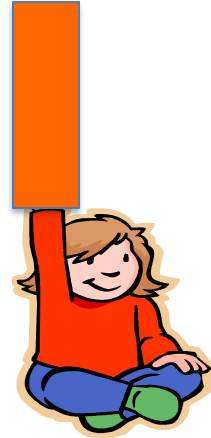


Who has their own dermatoscope?

- I have my own



- I don't have my own

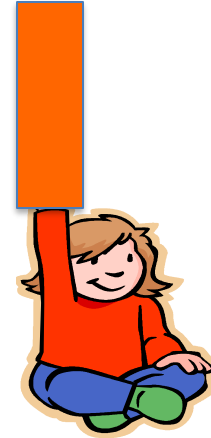
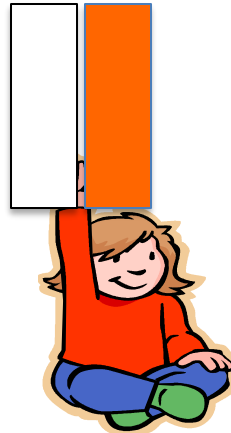
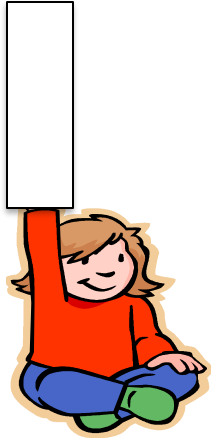


This workshop is interactive

- Option A

- Option B

- Option A+B



Option 4

- None of the options are true:
 - I don't know
 - Not applicable



My dermatoscope is:

Polarised



DermLite DL3N
\$1,295.00



DermLite DL3
\$1,095.00



DermLite II hybrid m
\$995.00



DermLite DL100
\$375.00



DermLite carbon
\$495.00



DermLite II fluid
\$895.00

Unpolarised



• A

• B

• A+B

My dermatoscope is:

Contact



DermLite DL3N
\$1,295.00



DermLite DL3
\$1,095.00



DermLite II hybrid m
\$995.00



DermLite DL100
\$375.00



DermLite carbon
\$495.00



DermLite II fluid
\$895.00

Non-contact



• A

• B

• A+B

Which dermatoscope?

- Depends on budget, interest, digital imaging
- Choices:
 - Polarised, unpolarised or both
 - Contact or non-contact
 - Ability to attach to a camera
 - Lens size and quality
 - Portability

Charger, AC, USB, dock

Non-contact devices

- Speedy review of entire skin surface
- Polarised view

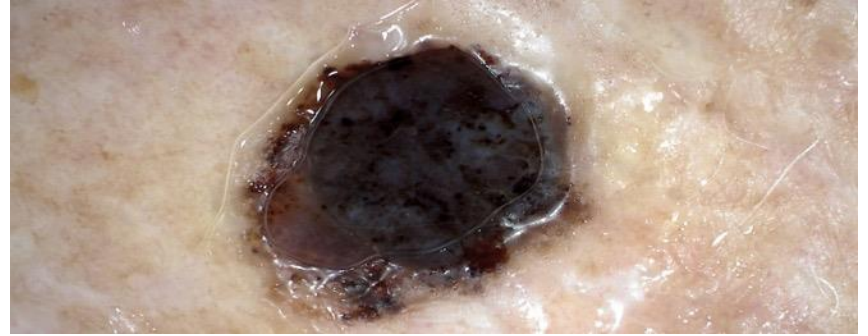
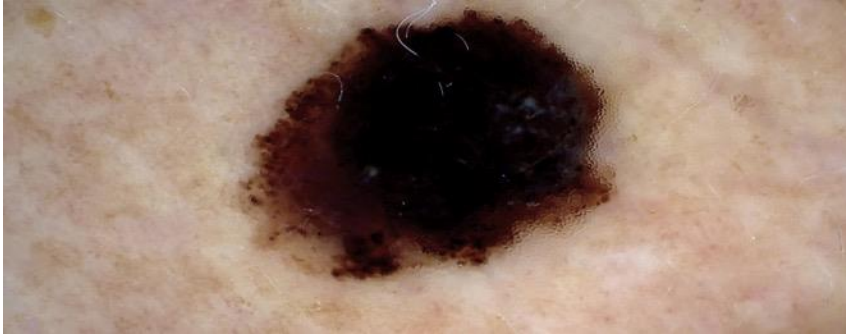


Contact devices

- Add fluid
- Better quality
- Best for imaging
- Polarised and non-polarised options



Polarised vs unpolarised



Both have liquid interface and lens in contact with the skin

Photography = digital dermatoscopy

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



I have photodermatoscopy:

Yes



No



• A

• B

• A+B

Why take photos?

- Clinical purposes
 - The record
 - Referral: required for HSCan melanoma referrals
 - Clinicopathological correlation
- Education
 - Yours
 - Someone else's

SLR camera?

Dedicated lens: DermLite Foto II Pro



Dedicated system: VEOS SLR 18 MP



SLR camera adapters available for Heine Delta 20T, Opticlar D-scope

Compact camera?

- Nikon 1 AW1
- Sony DSC-w710
- Panasonic Lumix L7
- Canon G10–G16



Compatible dermatoscopes:

- DermLite models



Dedicated dermoscopy camera

- DermLite Cam 5 MP
 - Macro
 - Micro x



Smartphone + device

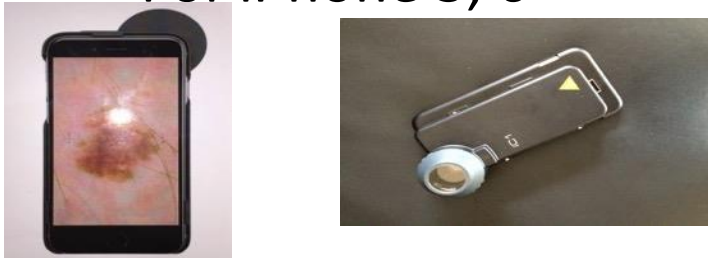
Handyscope, Veos HD1, HD2

- For iPhone 4, 5, 6



Heine iC1

- For iPhone 5, 6



Dermlite DL1, DL2, DL3

- For iPhone 4, 5, 6, 6+, 6s; iPod Touch; iPad 3, 4, air, mini;

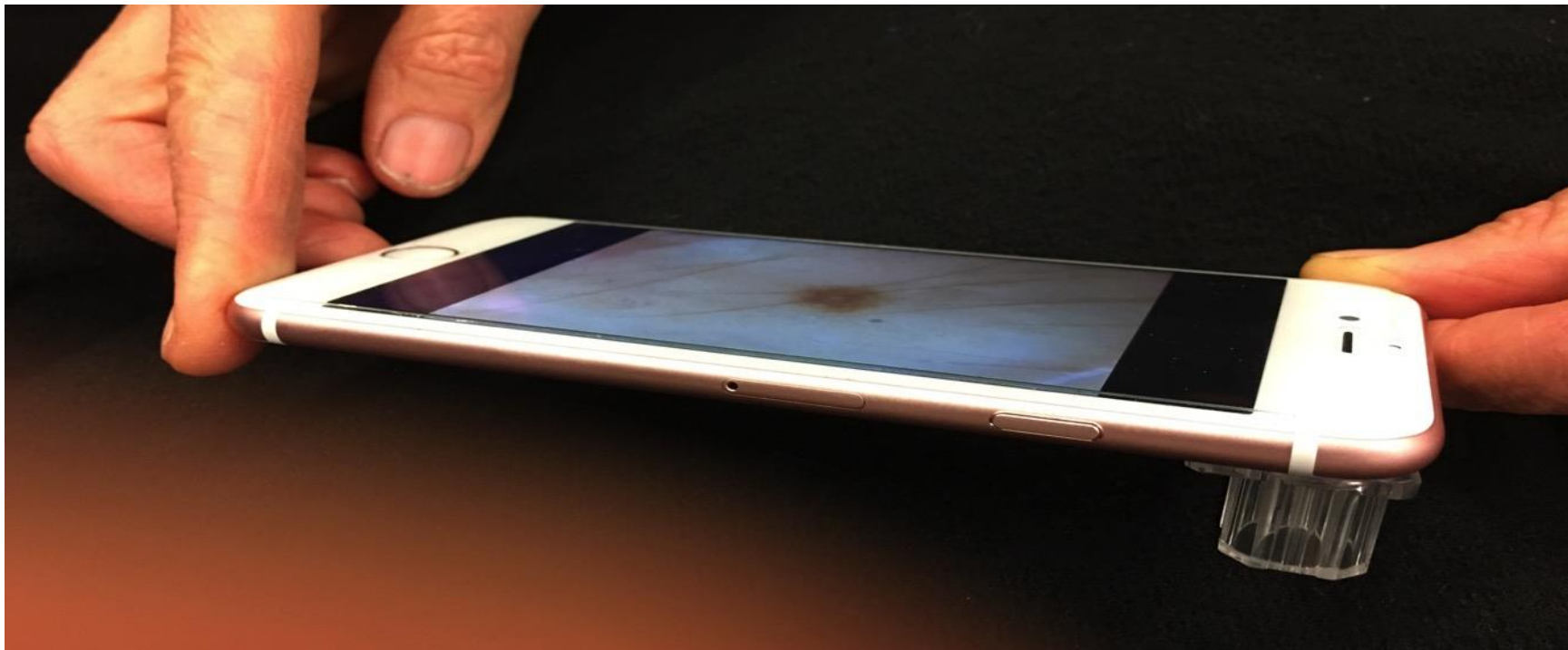


DermLite Hüd

- For smartphones



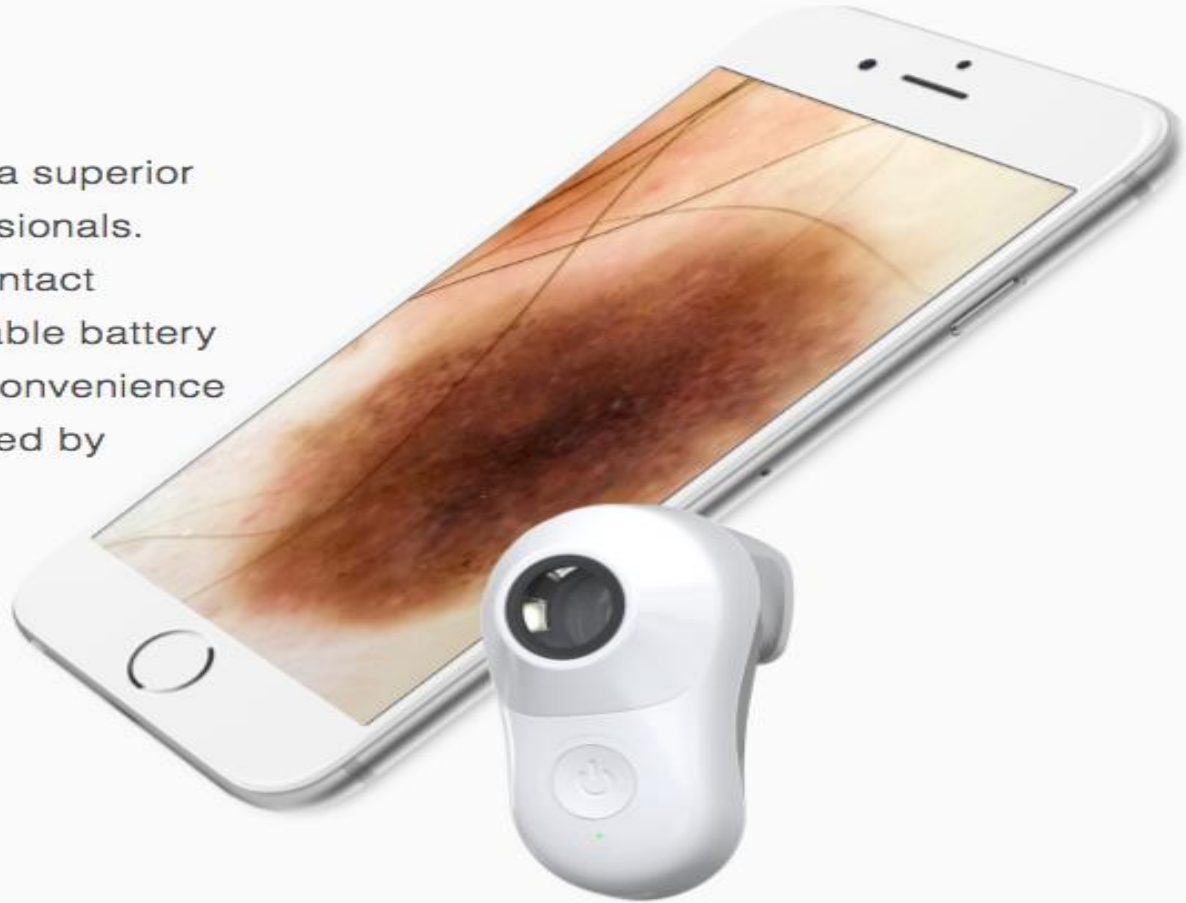
The newest, smallest solution



FirstCheck's SkinScope

MoleScope II

The new MoleScope II captures a superior image quality for medical professionals. Changeable contact and non-contact imaging caps and the rechargeable battery offer a new level of quality and convenience that matches dermatoscopes used by professionals.



www.dermengine.com

DermEngine software



Secure and private



HIPAA-compliant



No installation
process



Intuitive interface



Tech support



Access to network of
specialists for
referrals



Create your own
network of specialists,
GPs and patients



Easy integration with
reimbursement plans

Thanks to Prof Harald Kittler: descriptive dermoscopy

MODIFIED PATTERN ANALYSIS

Conventional pattern analysis

PubMed

Format: Summary ▼ Sort by: Best Match ▼

Selected items

Items: 3

- ☐ [Pattern analysis, not simplified algorithms, is the most reliable method for teaching dermoscopy for melanoma diagnosis to residents in dermatology.](#)
 1. Carli P, Quercioli E, Sestini S, Stante M, Ricci L, Brunasso G, De Giorgi V.
Br J Dermatol. 2003 May;148(5):981-4.
PMID: 12786829
[Similar articles](#)
- ☐ [Dermoscopy of pigmented skin lesions: results of a consensus meeting via the Internet.](#)
 2. Argenziano G, Soyer HP, Chimenti S, Talamini R, Corona R, Sera F, Binder M, Cerroni L, De Rosa G, Ferrara G, Hofmann-Wellenhof R, Landthaler M, Menzies SW, Pehamberger H, Piccolo D, Rabinovitz HS, Schiffner R, Staibano S, Stolz W, Bartenjev I, Blum A, Braun R, Cabo H, Carli P, De Giorgi V, Fleming MG, Grichnik JM, Grin CM, Halpern AC, Johr R, Katz B, Kenet RO, Kittler H, Kreusch J, Malvey J, Mazzocchetti G, Oliviero M, Ozdemir F, Peris K, Perotti R, Perusquia A, Pizzichetta MA, Puig S, Rao B, Rubegni P, Saida T, Scalvenzi M, Seidenari S, Stanganelli I, Tanaka M, Westerhoff K, Wolf IH, Braun-Falco O, Kerl H, Nishikawa T, Wolff K, Kopf AW.
J Am Acad Dermatol. 2003 May;48(5):679-93. Review.
PMID: 12734496
[Similar articles](#)
- ☐ [The role of pattern analysis and the ABCD rule of dermoscopy in the detection of histological atypia in melanocytic naevi.](#)
 3. Carli P, De Giorgi V, Massi D, Giannotti B.
Br J Dermatol. 2000 Aug;143(2):290-7.
PMID: 10951135
[Similar articles](#)

The impact of dermoscopy on melanoma detection in the practice of dermatologists in Europe: results of a pan-European survey.

Forsea AM¹, Tschandl P², Zalaudek I³, Del Marmol V⁴, Soyer HP⁵, Eurodermoscopy Working Group, Argenziano G⁶, Geller AC⁷.

+ Collaborators (30)

+ Author information

Abstract

BACKGROUND: Dermoscopy is a widely used technique that can increase the sensitivity and specificity of melanoma detection. Information is lacking on the impact of dermoscopy use on the detection of melanoma in the real-life practice of European dermatologists.

OBJECTIVE: To identify factors that influence the benefit of using dermoscopy for increasing melanoma detection and lowering the number of unnecessary biopsies in the practice of European dermatologists.

METHODS: We conducted a survey of dermatologists registered in 32 European countries regarding the following: the demographic and practice characteristics, dermoscopy training and use, opinions on dermoscopy and the self-estimated impact of dermoscopy use on the number of melanomas detected and the number of unnecessary biopsies performed in practice.

RESULTS: Valid answers were collected for 7480 respondents, of which 6602 reported using dermoscopy. Eighty-six per cent of dermoscopy users reported that dermoscopy increased the numbers of melanomas they detected, and 70% reported that dermoscopy decreased the number of unnecessary biopsies of benign lesions they performed. The dermatologists reporting these benefits were more likely to have received dermoscopy training during residency, to use dermoscopy frequently and intensively, and to use digital dermoscopy systems and pattern analysis compared to dermatologists who did not perceive any benefit of dermoscopy for the melanoma recognition in their practice.

CONCLUSIONS: Improving dermoscopy training, especially during residency and increasing access to digital dermoscopy equipment are important paths to enhance the benefit of dermoscopy for melanoma detection in the practice of European dermatologists.

Pattern analysis: benign

Local features

- Pigment network, evenly spaced, fading out
- Dots/globules distributed regularly
- Streaks distributed regularly
- Central hypopigmentation
- Symmetrical blotches
- Comma-like regular vasculature
- On face: regular pseudonetwork
- On palms/soles: Parallel furrow, lattice-like or fibrillar pattern

Global pattern

- Reticular pattern (diffuse or patchy network)
- Globular pattern (globules in shades of brown)
- Homogeneous pattern (diffuse colour)
- Starburst pattern (uniform peripheral radial streaks, dots or globules)
- Parallel pattern (along furrows; palms and soles only)
- Complex pattern (2 patterns within a single lesion, usually symmetrically or regularly distributed)
- Multicomponent pattern (3 patterns, usually concentric)

Pattern analysis: melanoma

Local features

- Atypical pigment network (branched, broken-up, thickened, asymmetrical)
- Dots/globules distributed irregularly and of different sizes and shapes
- Asymmetrical blotches (featureless colours)
- Focal irregular streaking or peripheral linear projections (radial streaming and pseudopods)
- Five or six colours (black, brown, tan, grey, blue, red, white)
- Blue-white veil over part of the lesion
- White scar-like depigmentation
- Blue pepper-like granules
- Irregular linear or dotted vessels, or polymorphous vascular pattern especially with milky-red areas
- On face: grey dots, pseudonetwork, rhomboidal structures, asymmetrical pigmented follicles, annular-granular structures
- On palms/soles: parallel ridge, irregular

Global pattern

- Multicomponent pattern (3 or more patterns)
- Unspecific pattern (mainly structureless or 2 patterns, irregular)
- Parallel pattern (along ridges; palms and soles only)

Standardization of terminology in dermoscopy/dermatoscopy: Results of the third consensus conference of the International Society of Dermoscopy.

Kittler H¹, Marghoob AA², Argenziano G³, Carrera C⁴, Curiel-Lewandrowski C⁵, Hofmann-Wellenhof R⁶, Malvehy J⁴, Menzies S⁷, Puig S⁴, Rabinovitz H⁸, Stolz W⁹, Saida T¹⁰, Soyer HP¹¹, Siegel E¹², Stoecker WV¹³, Scope A¹⁴, Tanaka M¹⁵, Thomas L¹⁶, Tschandl P¹⁷, Zalaudek I⁶, Halpern A².

Author information

Abstract

BACKGROUND: Evolving dermoscopic terminology motivated us to initiate a new consensus.

OBJECTIVE: We sought to establish a dictionary of standardized terms.

METHODS: We reviewed the medical literature, conducted a survey, and convened a discussion among experts.

RESULTS: Two competitive terminologies exist, a more metaphoric terminology that includes numerous terms and a descriptive terminology based on 5 basic terms. In a survey among members of the International Society of Dermoscopy (IDS) 23.5% (n = 201) participants preferentially use descriptive terminology, 20.1% (n = 172) use metaphoric terminology, and 484 (56.5%) use both. More participants who had been initially trained by metaphoric terminology prefer using descriptive terminology than vice versa (9.7% vs 2.6%, P < .001). Most new terms that were published since the last consensus conference in 2003 were unknown to the majority of the participants. There was uniform consensus that both terminologies are suitable, that metaphoric terms need definitions, that synonyms should be avoided, and that the creation of new metaphoric terms should be discouraged. The expert panel proposed a dictionary of standardized terms taking account of metaphoric and descriptive terms.

LIMITATIONS: A consensus seeks a workable compromise but does not guarantee its implementation.

CONCLUSION: The new consensus provides a revised framework of standardized terms to enhance the consistent use of dermoscopic terminology.

Copyright © 2015 American Academy of Dermatology, Inc. Published by Elsevier Inc. All rights reserved.

KEYWORDS: consensus; dermatoscopy; melanoma; nevi; noninvasive diagnosis; nonmelanoma skin cancer; pigmented skin lesions; terminology

Metaphoric dermoscopy



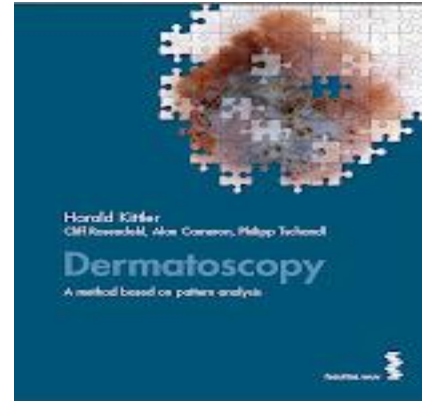
Harald Kittler “Terms are

- 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.



Modified pattern analysis

Descriptive dermoscopy

- Skin lesions are made up of structures
 - Lines, dots, clods
- There are structureless zones
- They have varying colours



- Structures forming neat patterns $\approx$ naevi
- Structures disordered / chaotic $\approx$ cancer*

* Exceptions include seborrhoeic keratoses

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

Reticular pattern

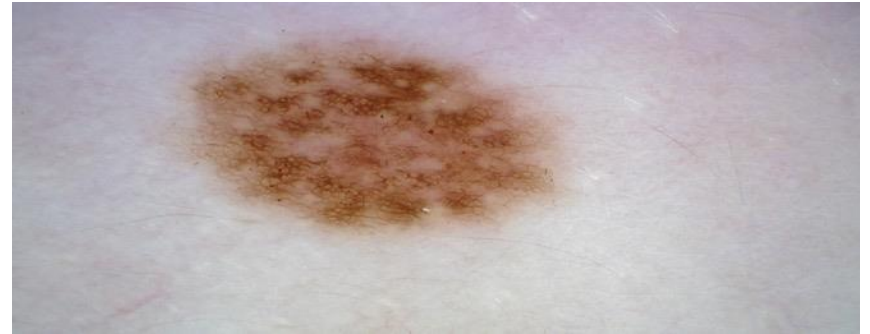
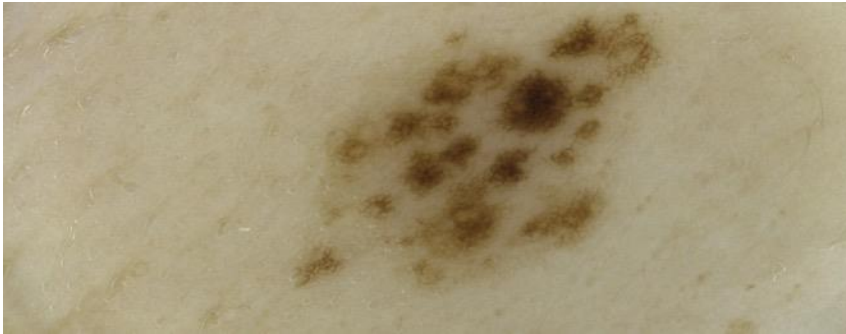
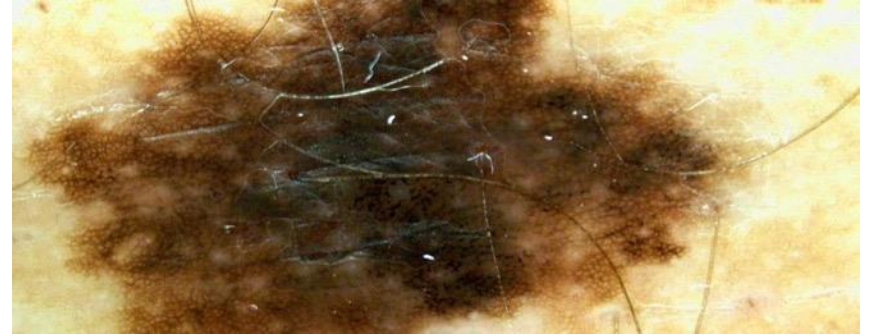


- Pigment is due to deposition of pigment in keratinocytes

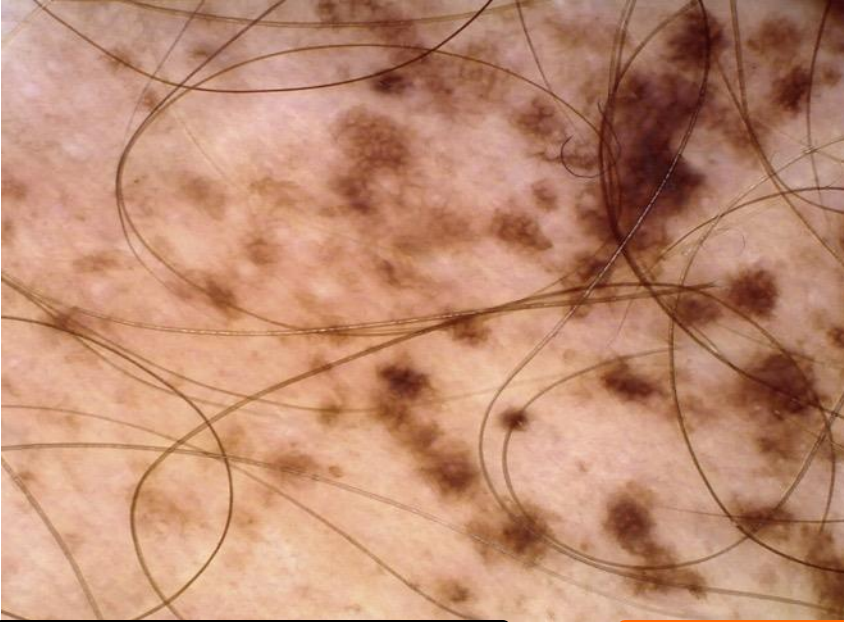


- Superficial congenital naevi
- Acquired 'Clark' naevi
- Lentigo simplex
- Solar lentigines
- Seborrhoeic keratoses
- Melanotic macules
- Ink spot lentigo
- Dermatofibroma
- Urticaria pigmentosa
- Nipple
- Normal skin

Reticular pattern



Which has reticular pattern?



• A

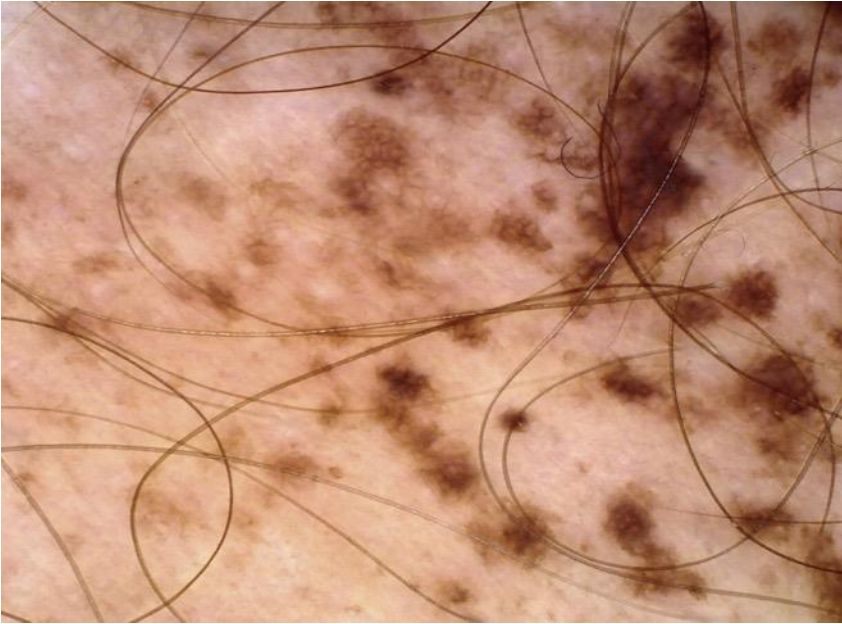


• B

• A+B

Both have reticular pattern

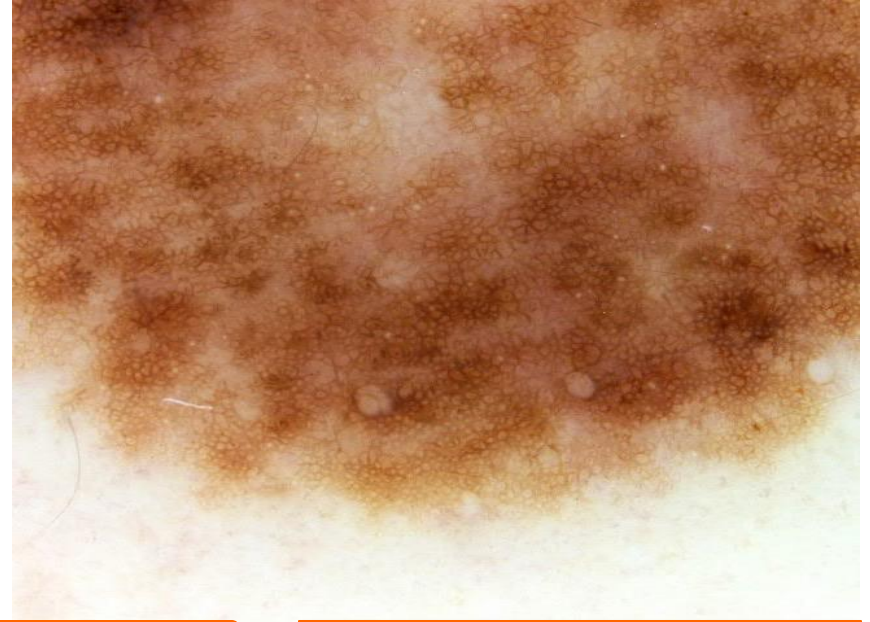
Speckled lentiginous naevus



Congenital naevus



Which has reticular pattern?



• A

• B

• A+B

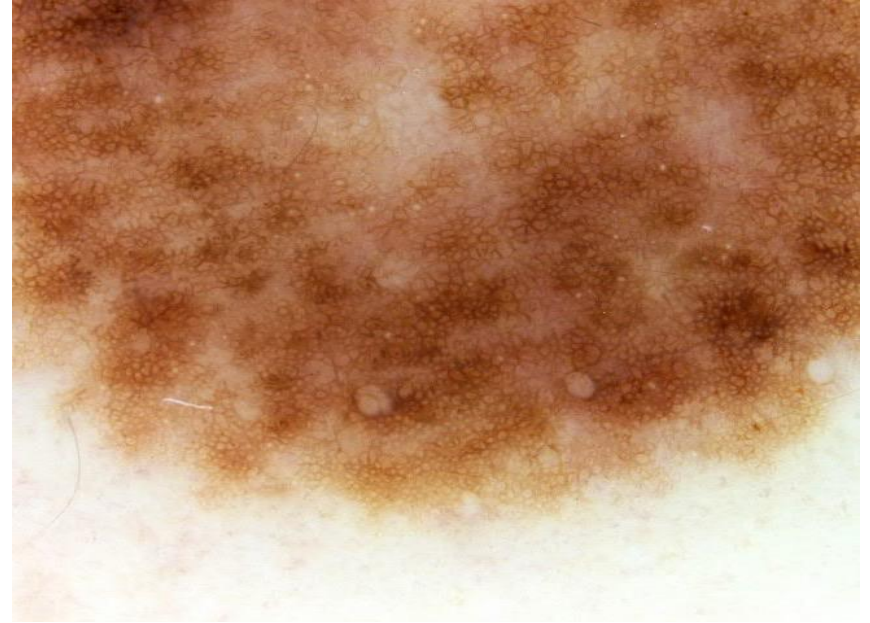
B has reticular pattern ^A###

Blue naevus



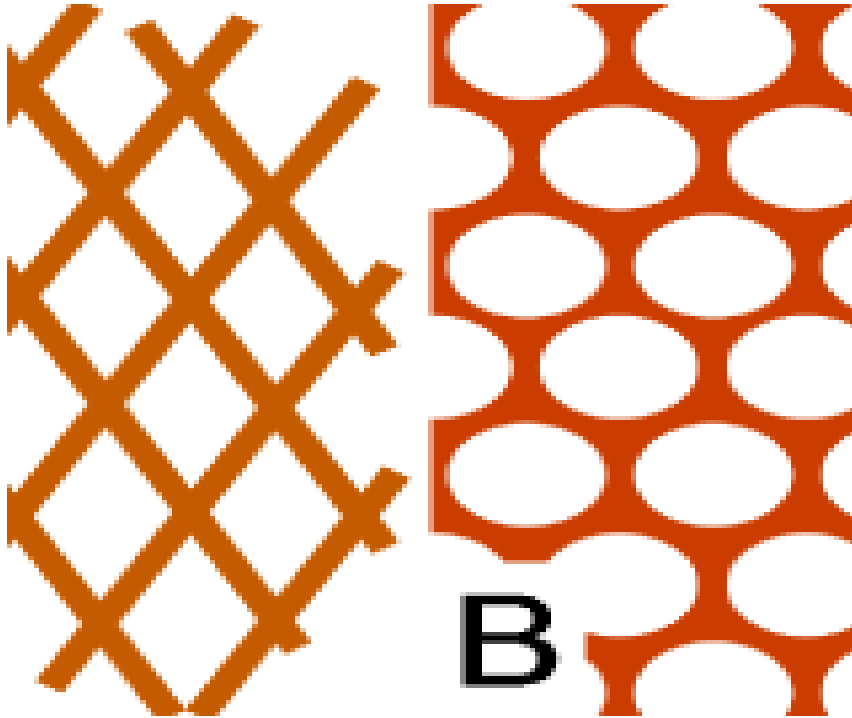
Structureless

Acquired melanocytic naevus



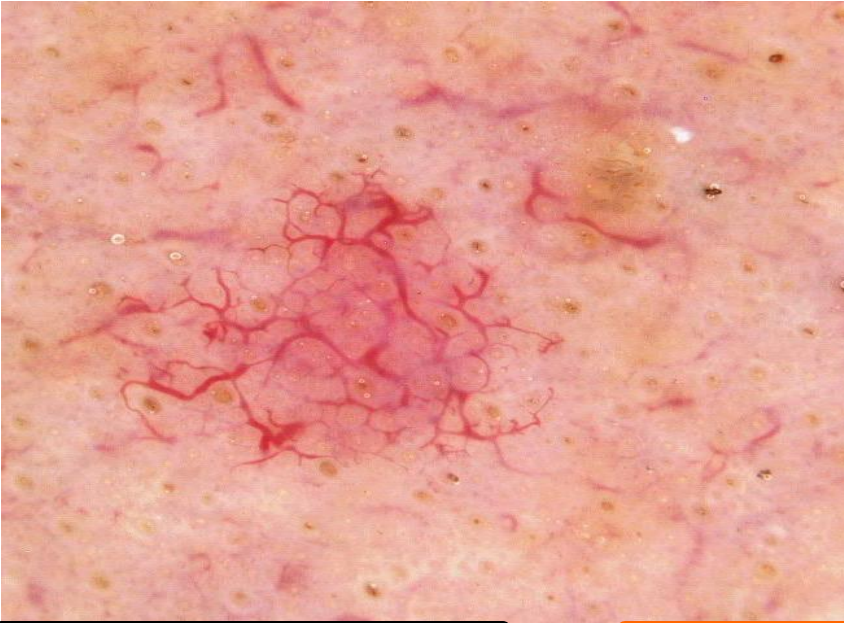
Typical pigment network

Pigment networks



- Structure reflects shape of epidermal rete ridges (mesh) and papillae (holes within the mesh)
- The network can have any colour, especially black, dark brown, light brown, white
- Lines can vary in thickness

Which has branched lines?



• A

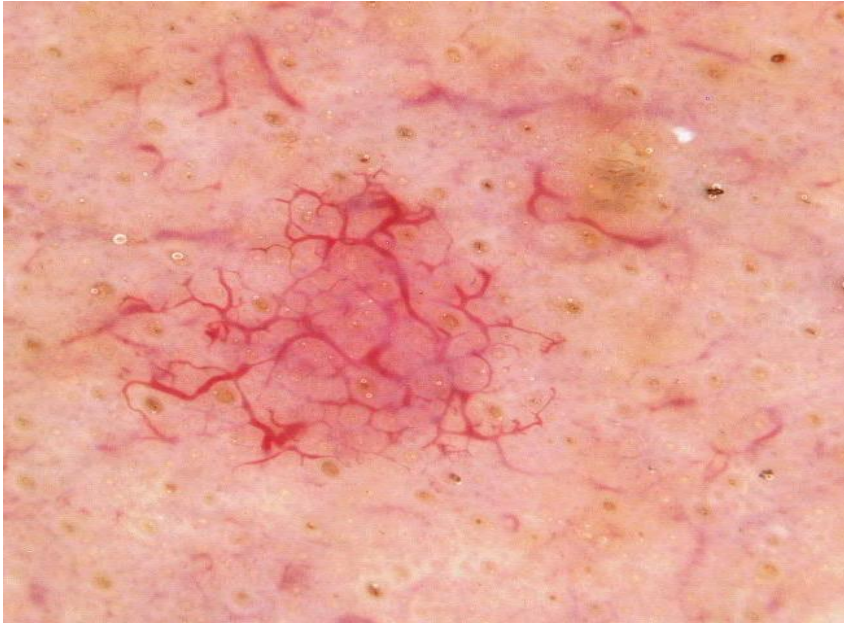
• B

• A+B

A has branched lines



Telangiectasia



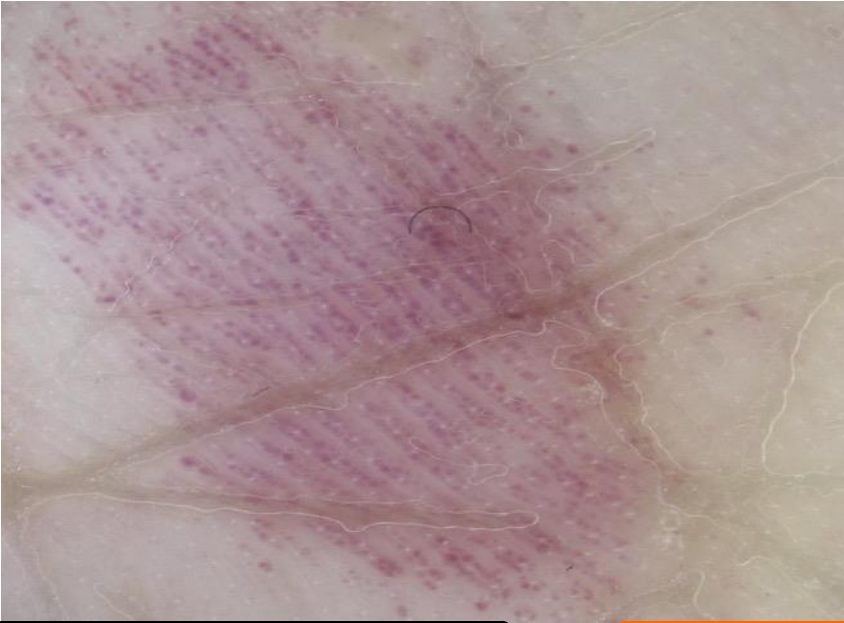
Red branched lines – bld vv

Acral naevus



Fibrillar pattern parallel pattern

Which lines are parallel?



• A

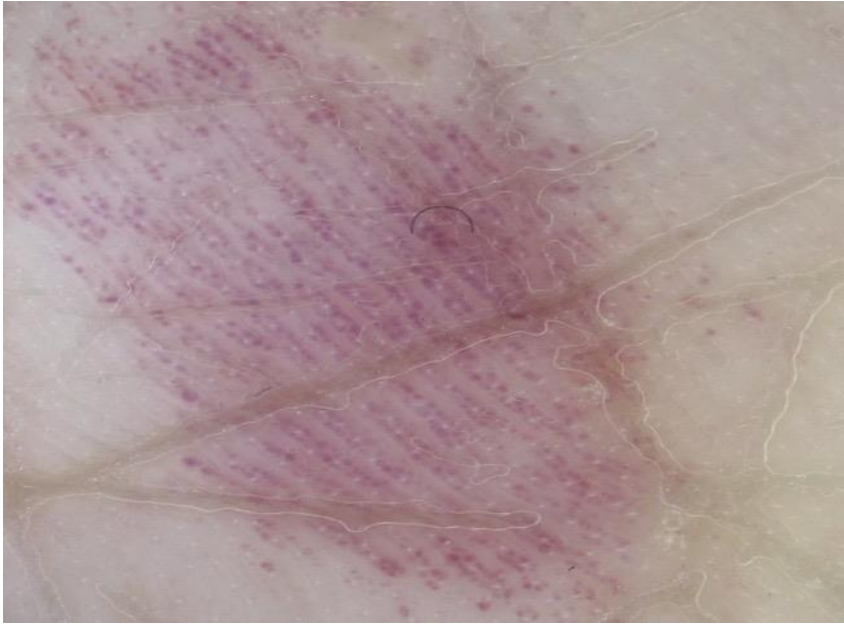
• B

• A+B

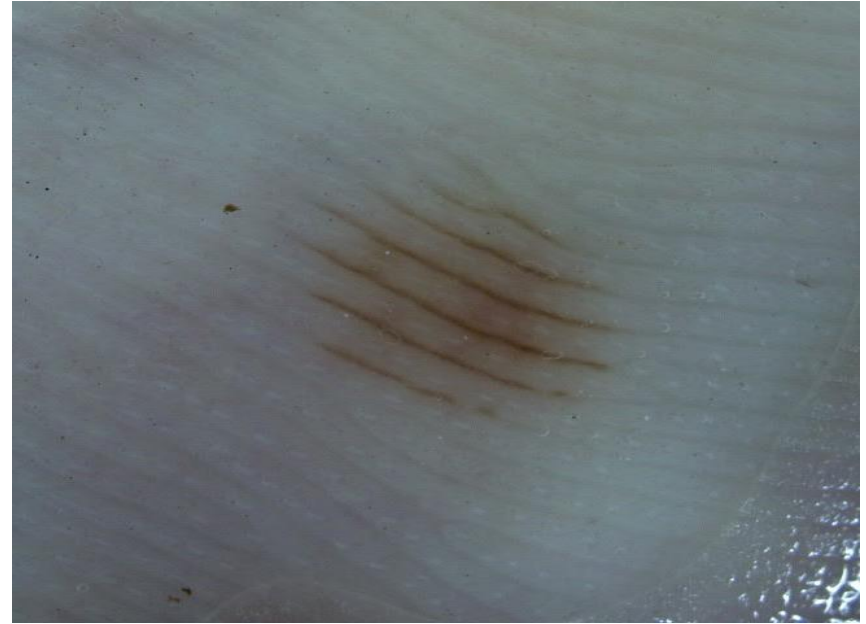
Both have parallel lines



Vascular naevus



Melanocytic naevus



Acral (palmar / plantar) lesions often have parallel lines

Which has radial lines?



• A

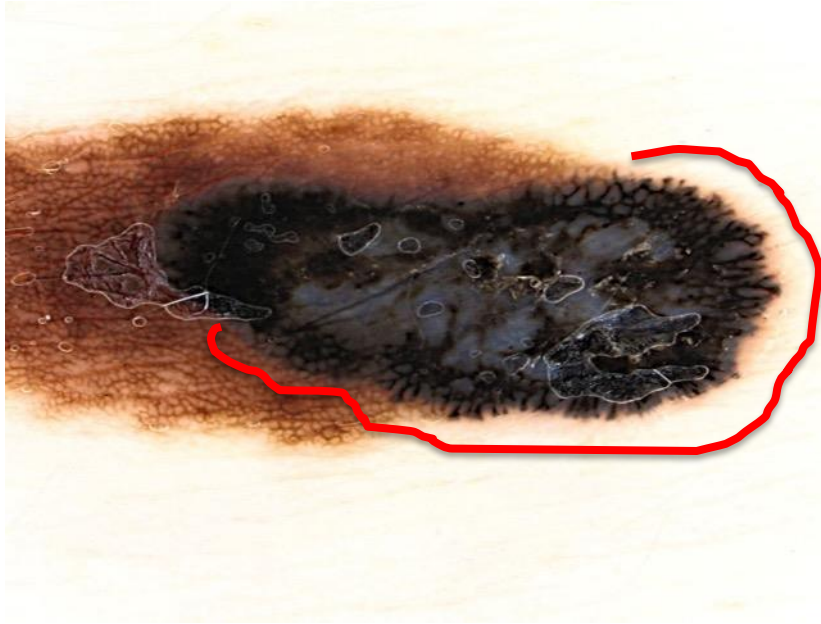
• B

• A+B

Both have radial lines



Melanoma



Asymmetry of structure: CHAOS

Pigmented Spitz naevus



Symmetry of structure

Basic structures: rounded

- Pseudopods



- Line + clod at end

- Circles



- Joined up line

- Clods



- Any colour, shape

- Dots



- Tiny spot(s)

- Structureless

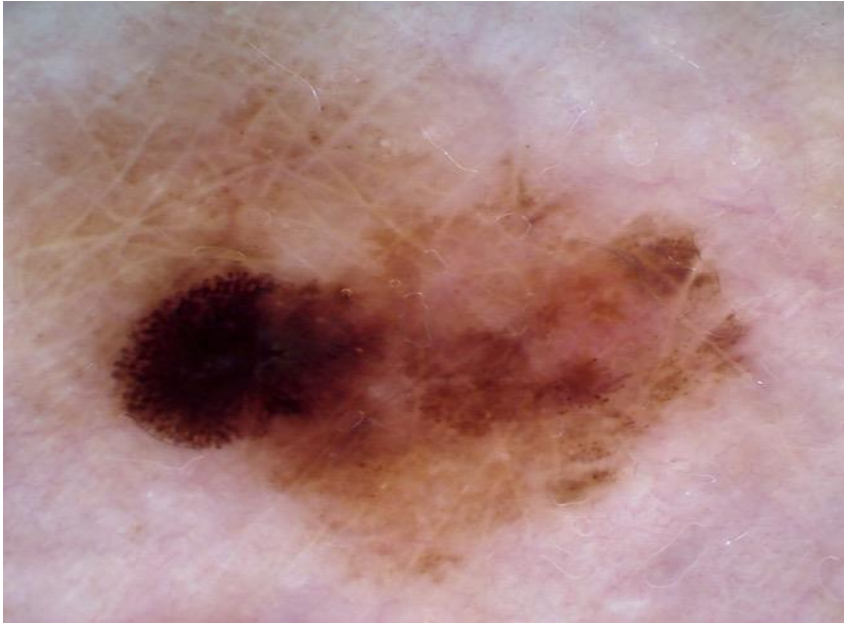


- Absence of other element

Pseudopods



Melanoma: focal



Reed naevus: circumferential



Which has pseudopods?



- A

- B

- A+B

A has pseudopods

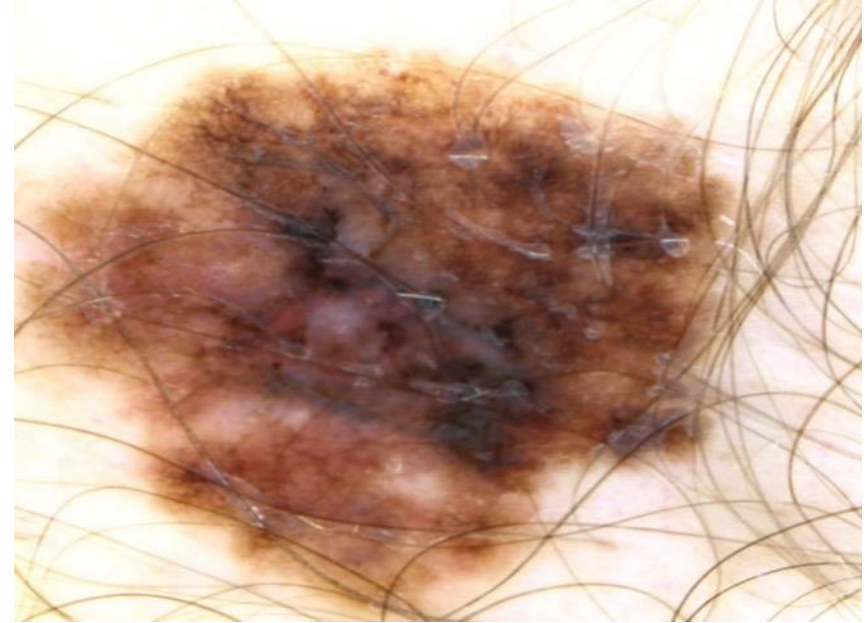


Melanoma



Peripheral line + clod on end

Melanoma



Peripheral fine network

Patterns of circles (not naevi)



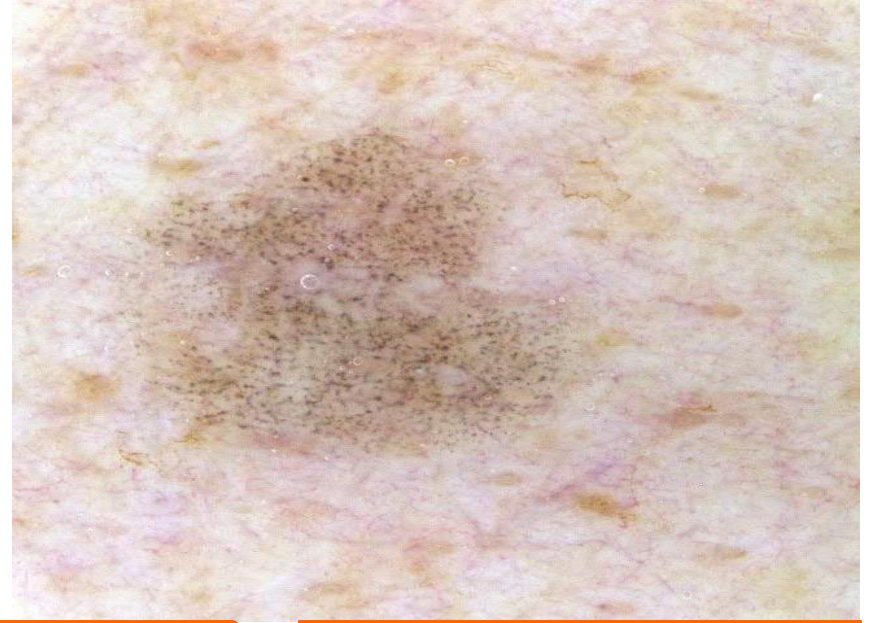
Brown: seborrhoeic keratosis



White: squamous cell carcinoma



Which has circles?



• A

• B

• A+B

A has circles

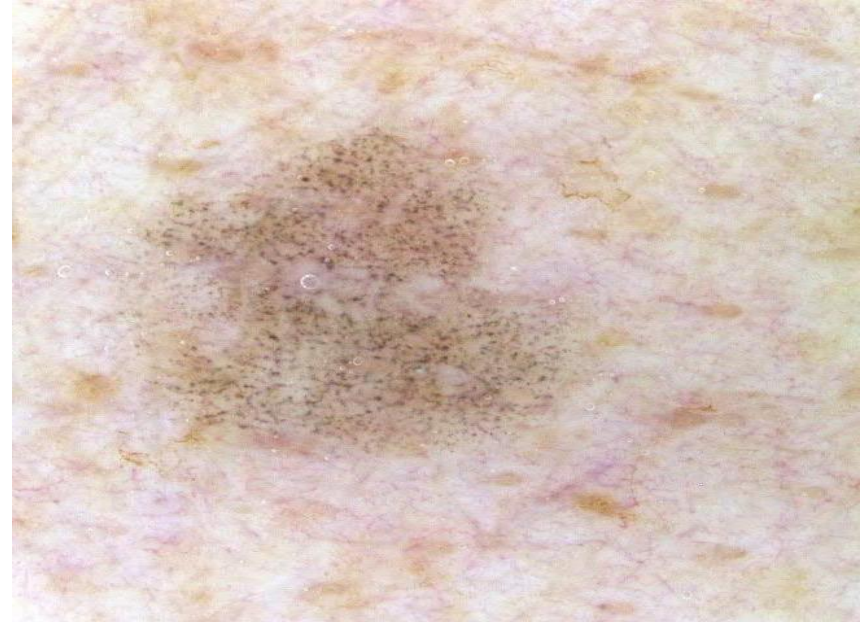


Seborrhoeic keratosis



Joined-up brown lines

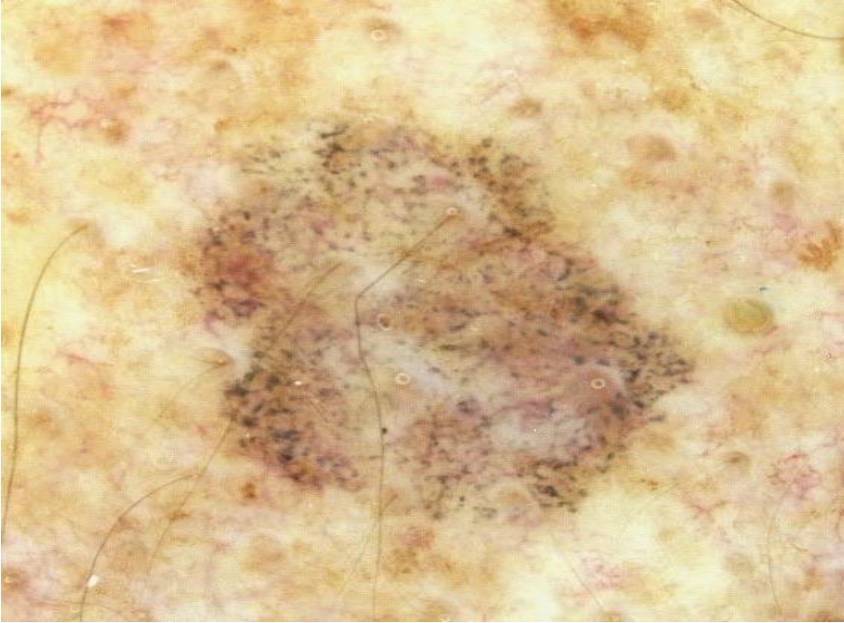
Lichen-planus like keratosis



Grey dots

Patterns of dots

Grey



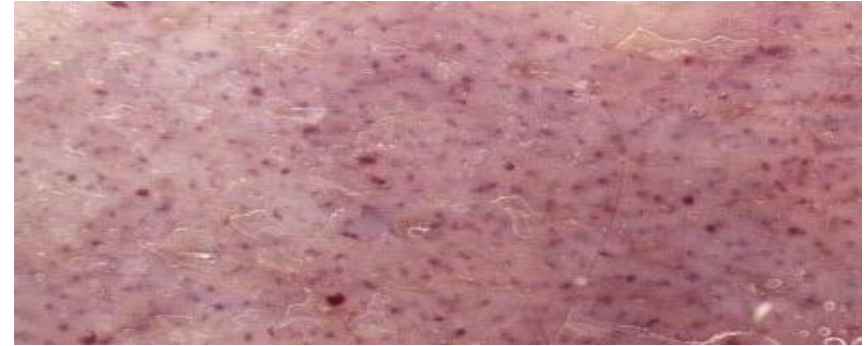
Red



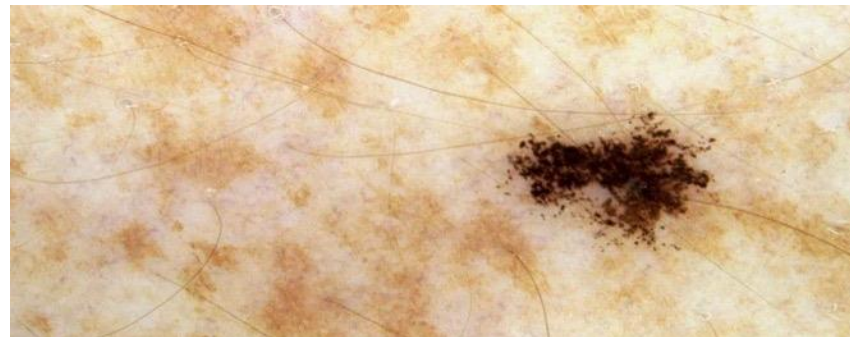
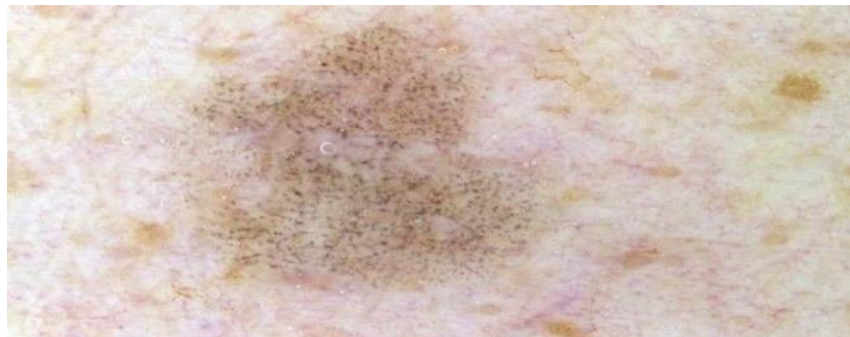
Dotted pattern



- 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

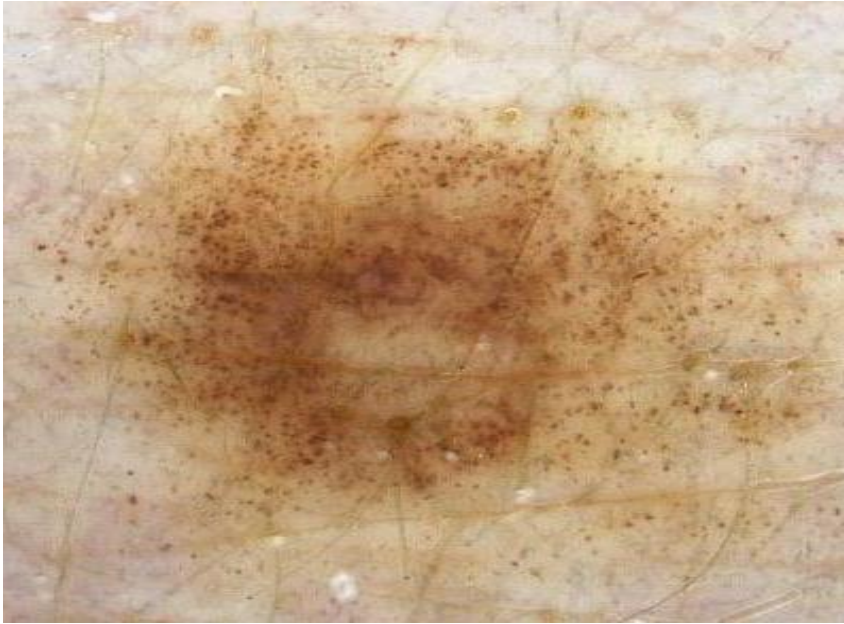
• B

• A+B

A has dotted pattern



Benign naevus



Dots (+ a few clods)

Benign naevus

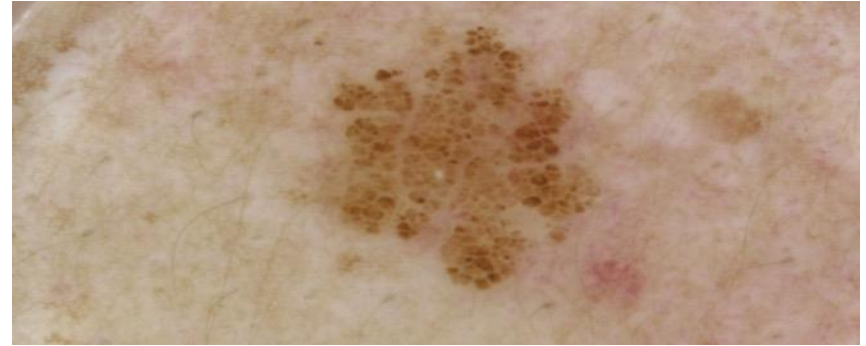


Reticular pattern (variegate)

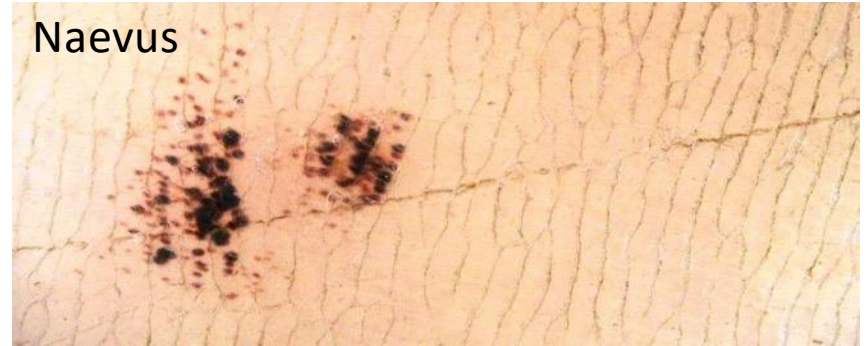
Clods



- Clod = lump of earth
- Colour
 - Red / black: blood
 - White / yellow: keratin
 - Black / brown / grey / blue: melanin

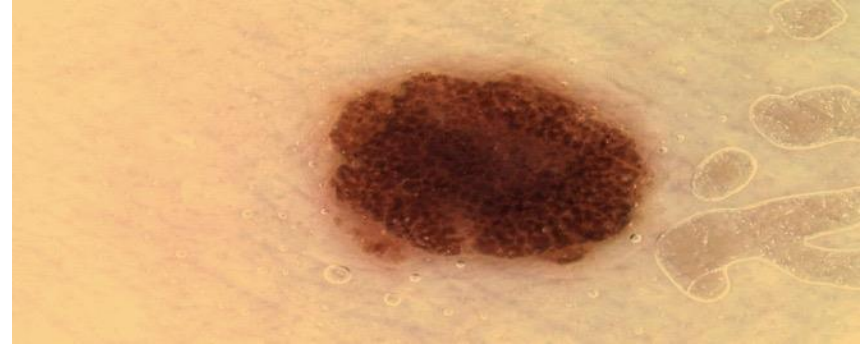


Naevus

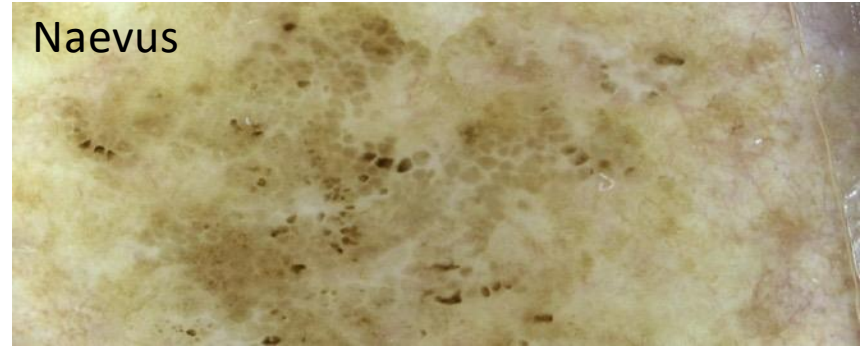


Clod pattern

- Consider symmetry
 - Distribution
 - Shape
 - Colour



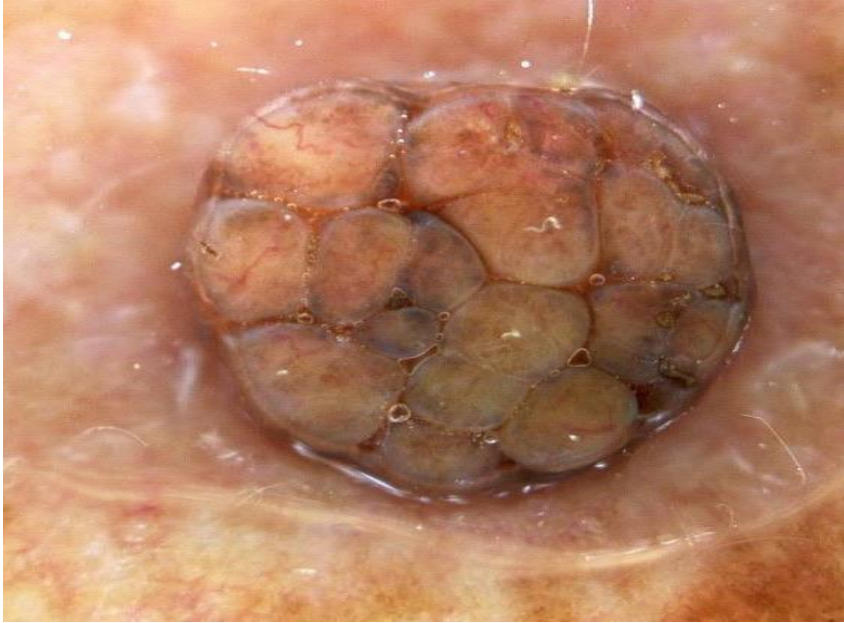
Naevus



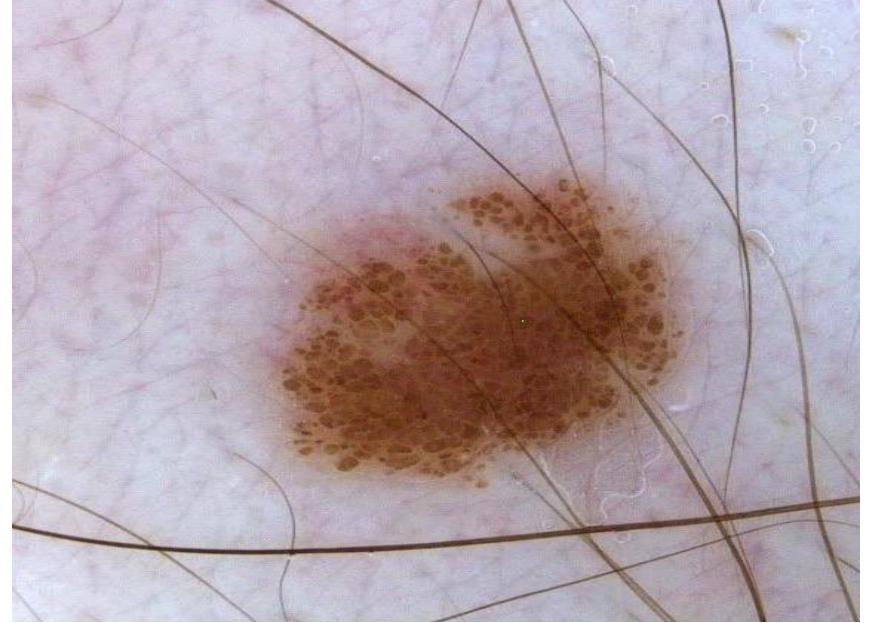
Seborrhoeic keratosis

Large and small clods

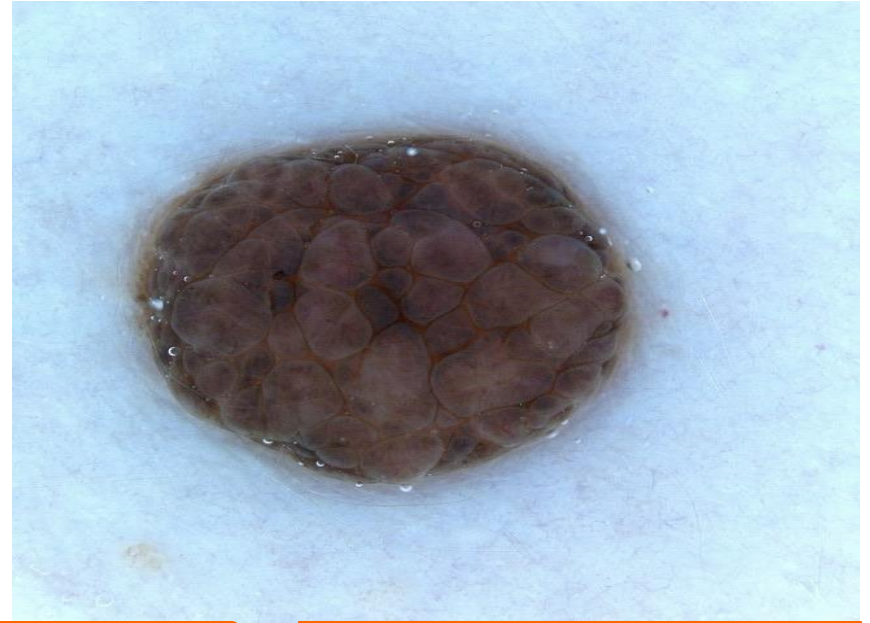
Cobblestone pattern



Globular or brown clod pattern



Which has clods?



• A

• B

• A+B

B has clods

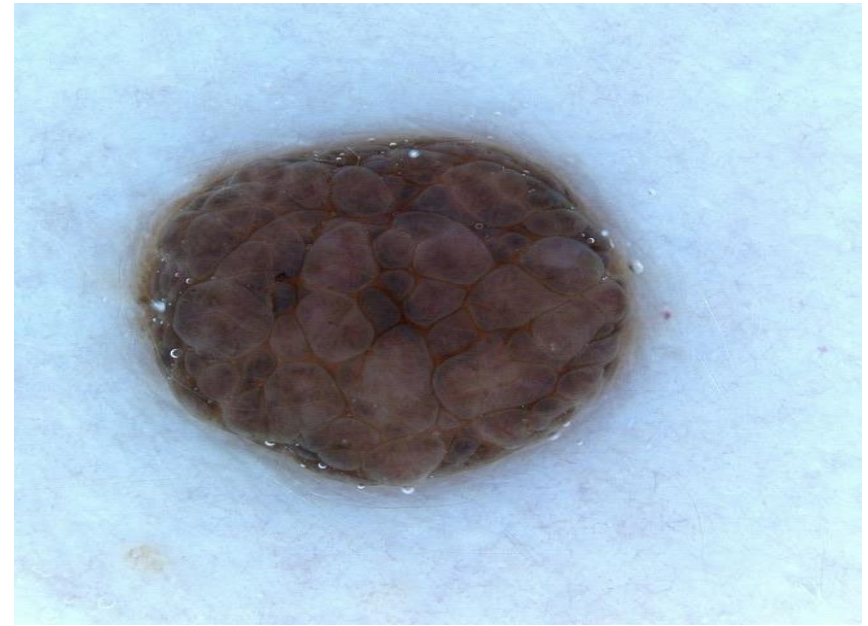


Blue naevus



Structureless – not a big clod!

Papillomatous dermal naevus



Structures with any shape

Structureless patterns

Brown (1 component)



Skin coloured (2 components)



Which is structureless?



• A

• B

• A+B

Both have structureless areas



Blue naevus



Concentric structureless zones

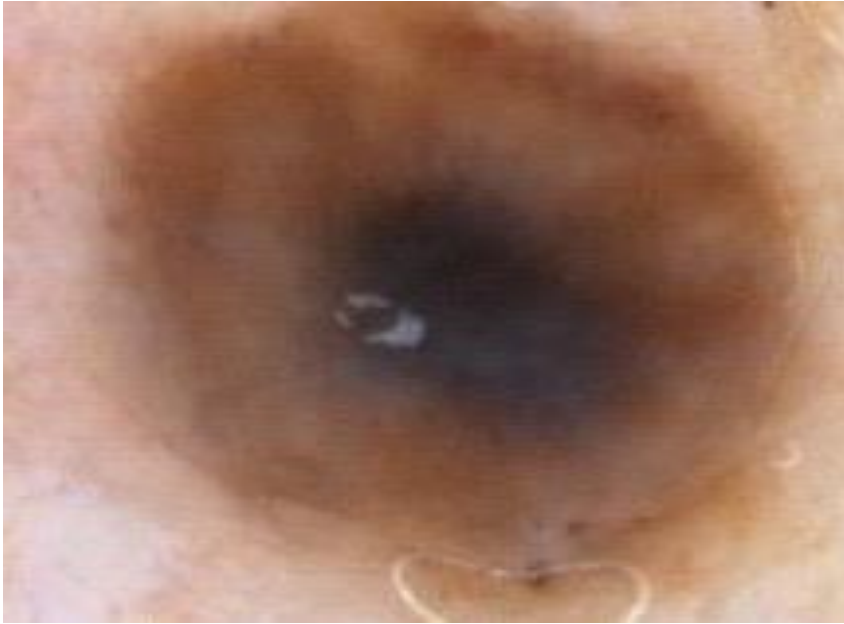
Cockade naevus



Centre is structureless

Complex patterns in naevi

Structureless in structureless



Structureless in dot/clods



Complex patterns in naevi

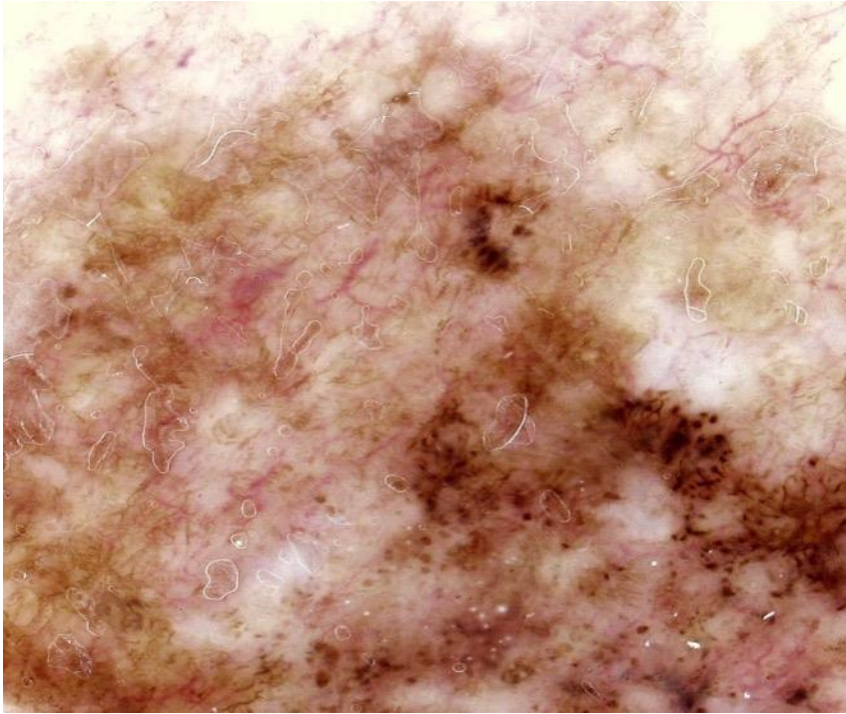
Concentric patterns



Repeating pattern



Disordered pattern in melanoma



Colours

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



Melanin

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



Patterns

Lines



Dots - clustered



Clods -
aggregated



Structureless



More patterns



MELANOCYTIC NAEVI

Melanocytic naevi

- True congenital naevi
- Tardive congenital naevi
- Acquired naevi: Clark naevi
- Junctional
- Compound
- Dermal
- Blue

Dermatoscopy of benign naevi

No Chaos

- Symmetry of structure
- Symmetry of colour
- One pattern, 2 concentric/regular patterns or 3 concentric patterns

Single pattern naevus

- Symmetry of structure

Junctional
naevus



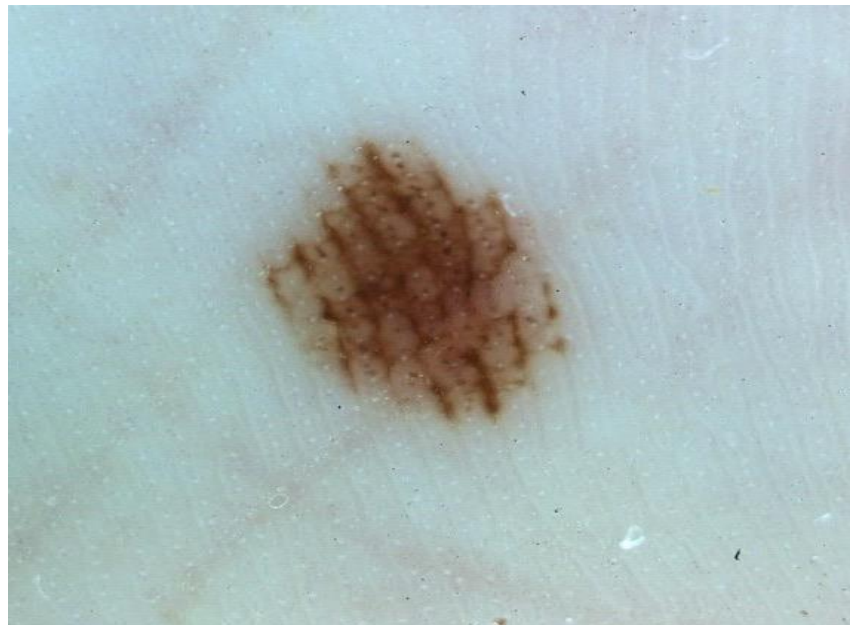
Dermal naevi

Patterns of lines in naevi

Reticular pattern



Parallel pattern



Patterns of lines in naevi

Radial pattern



Radial pattern



Rounded patterns in naevi

Dotted pattern



Clod pattern



Rounded patterns in naevi

Cobblestone pattern



Dermal naevus

Pseudopods



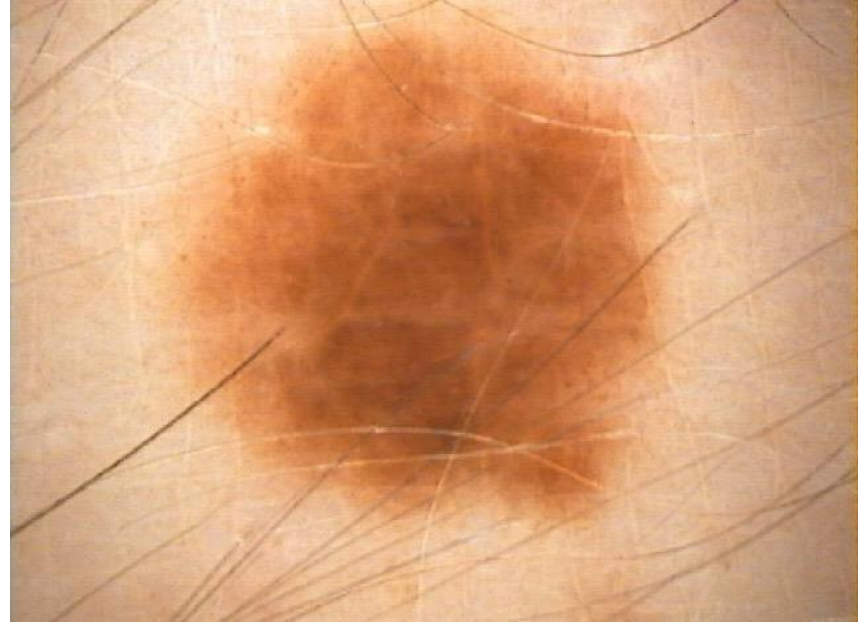
Reed naevus

Structureless naevus

Blue naevus



Clark naevus



Which is blue naevus?



• A

• B

• A+B

B is blue naevus

Haemangioma



Blue naevus



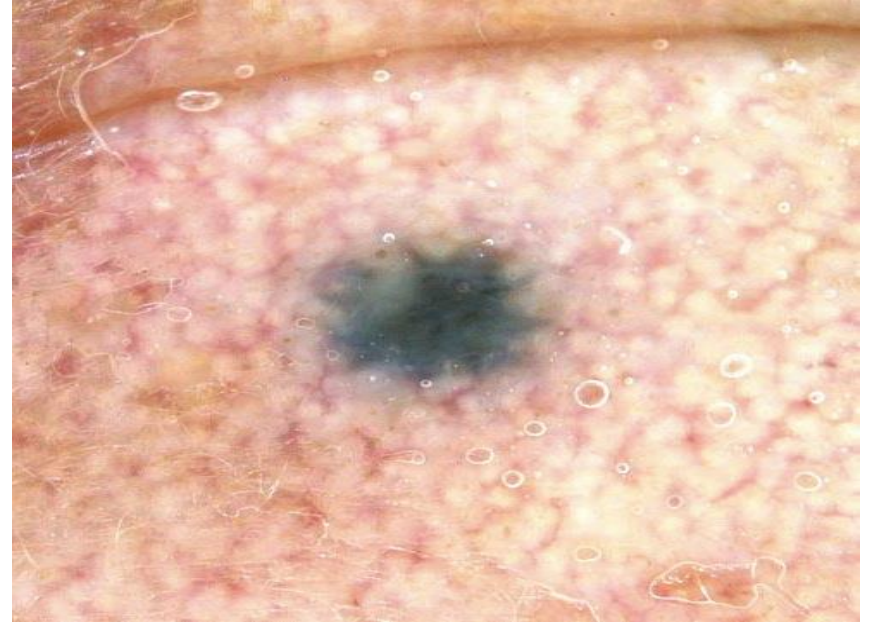
Dermatoscopy

Angioma



- Clods pattern (lacunar)

Blue naevus



- Structureless pattern (homogeneous)

Mixed patterns in naevi

- 2–3 patterns, each $\geq 30\%$ of lesion
- Symmetry = benign
 - Structure not shape
- Compound naevus

Complex : lines + structureless

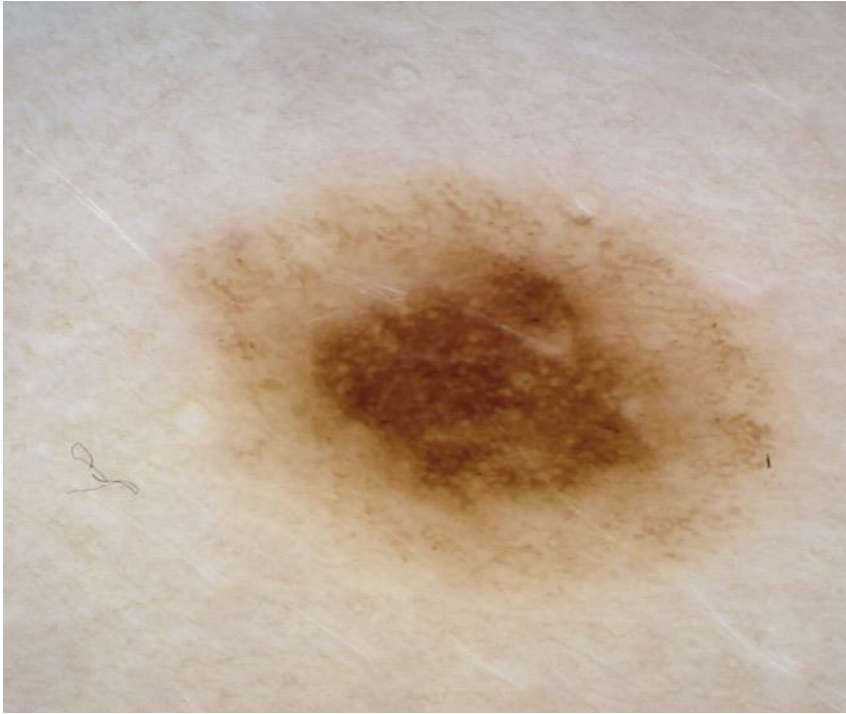
Compound naevus



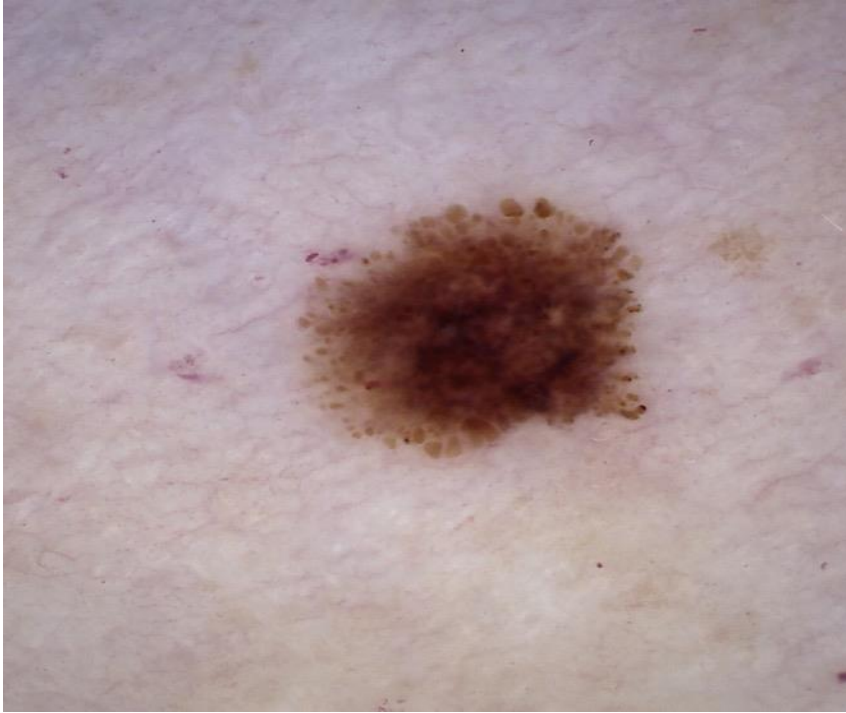
Lentiginous naevus



Complex: lines + clods



Complex: structureless + clods

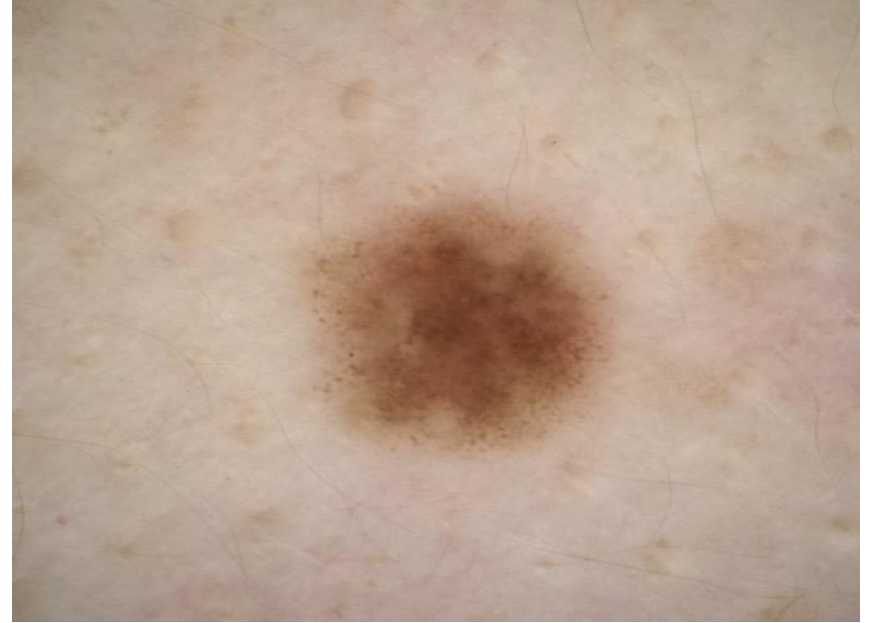


Evolving Clark naevus

Benign naevus 2012



Benign naevus 2017



Which lesion should you excise?



- A

- B

- A+B

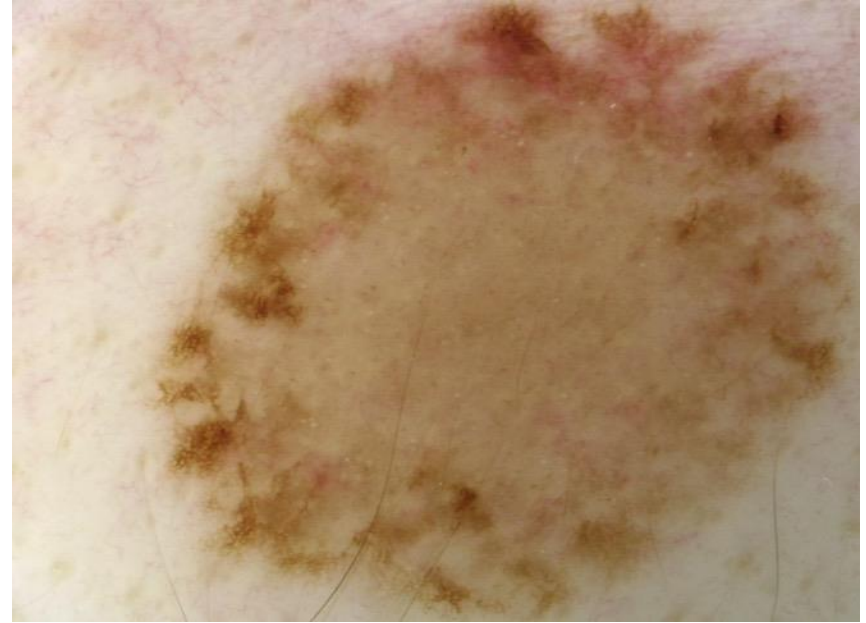
Excise neither

Compound naevus



Symmetrical structure

Compound naevus



Symmetrical structure

Which lesion should you excise?



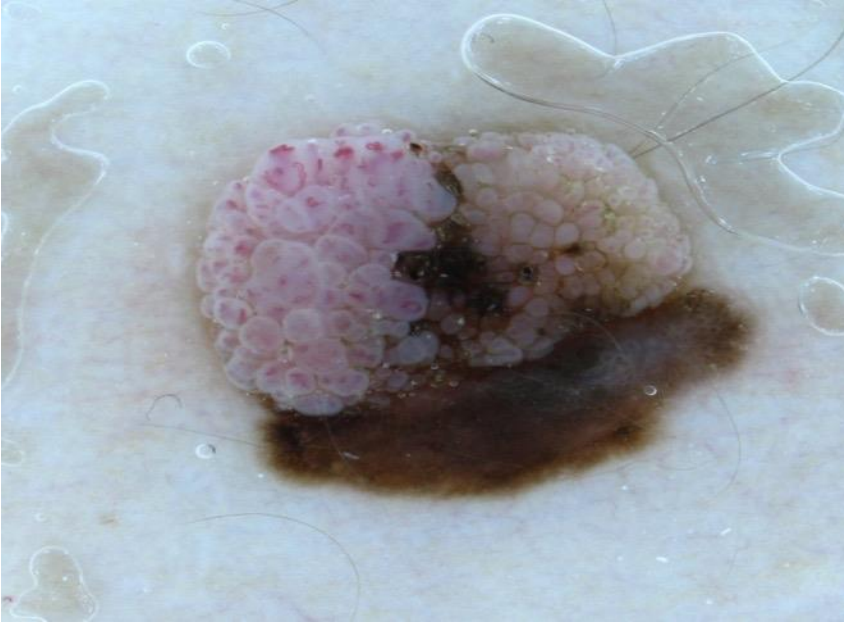
• A

• B

• A+B

Excise A

Melanoma



Asymmetrical structure

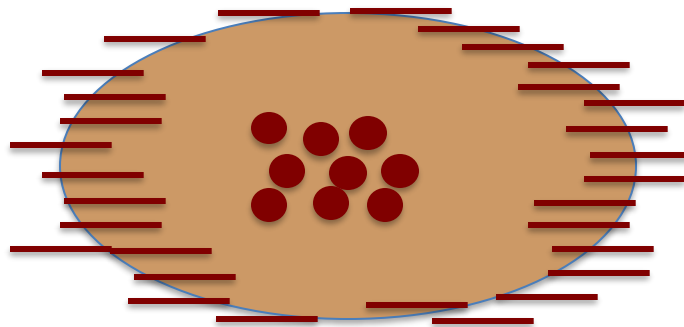
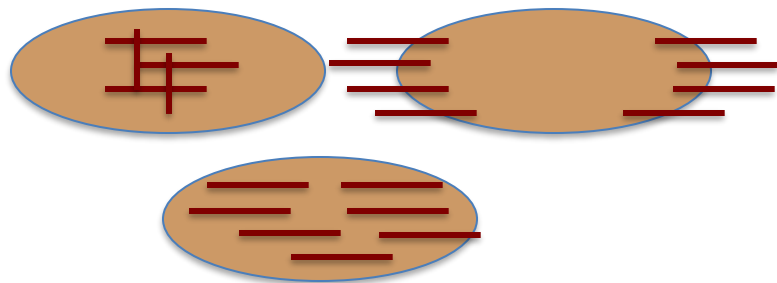
Dermal naevus (Unna type)



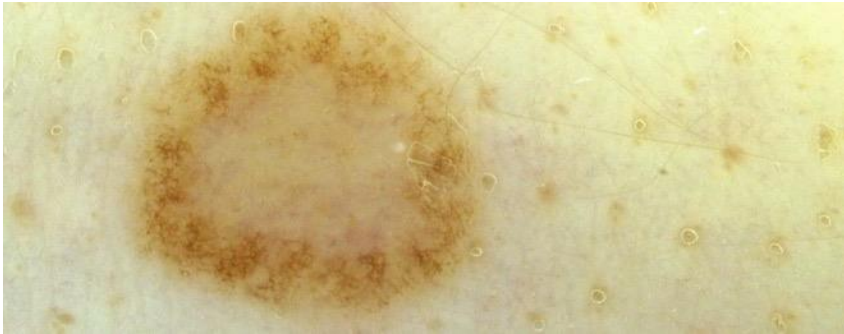
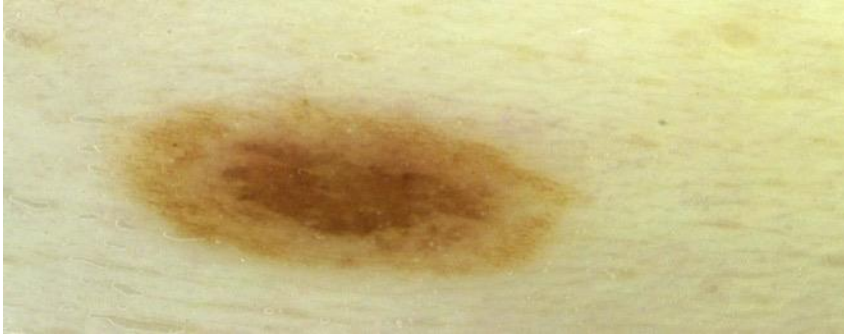
Symmetrical structure

Symmetry

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



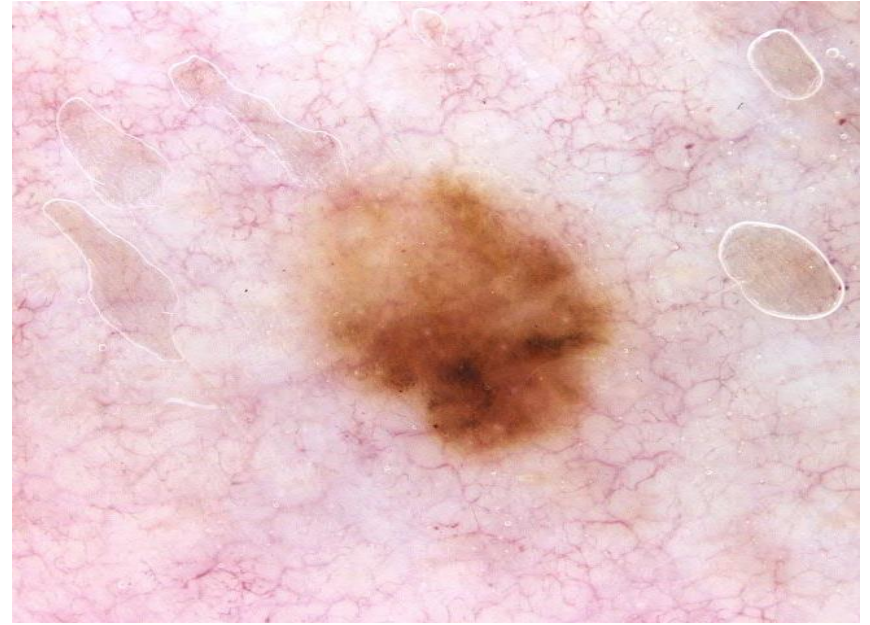
Symmetry



- 2 patterns

- 3 patterns

Which lesion has symmetry?



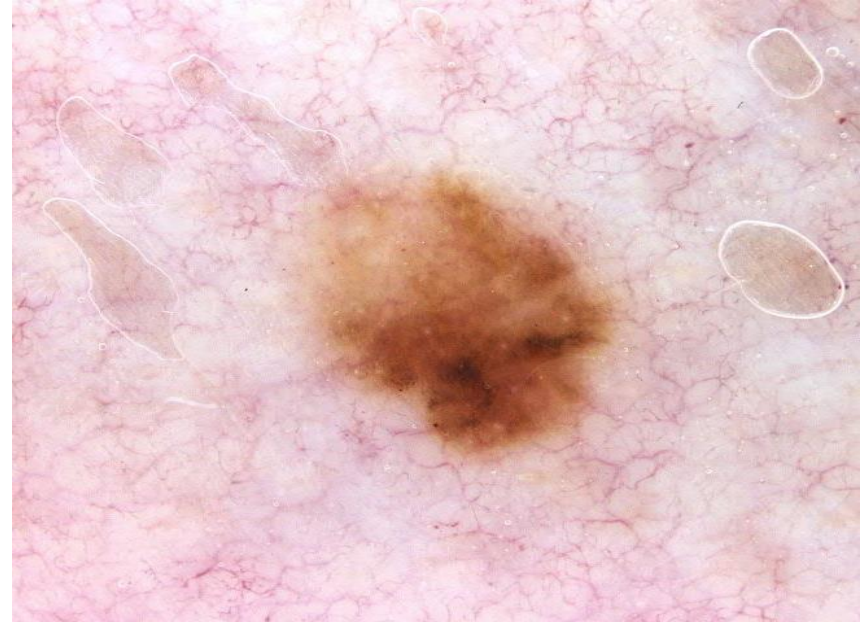
A has symmetry

Melanocytic naevus



Reticular + central clod patterns

Melanoma in situ



Structureless, irregular

MELANOMA

Melanoma

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

High Suspicion of Cancer

- HSCan (melanoma)
- Ministry of Health idea
- Initially for triage
- Later will be for referral

MALIGNANT MELANOMA OF SKIN	
Red flags	
EITHER: Skin lesion AND three or more of the following features:	Y/N
A. Asymmetry of shape, structure or colour	
B. Border irregularity	
C. Colour variation / multiple colours	
D. Different from other lesions ('ugly duckling')	
E. Evolving, changing	
Personal history of melanoma	
Family history of 2+ first degree relatives <40 yrs diagnosed with melanoma	
OR:	
• Dermoscopy of skin lesion is suspicious for melanoma	

IN ADDITION:

All referrals must include the following supporting results:

- Required: Size of lesion
- Required: Body location (attachment or description)
- Required: Digital macroscopic image of lesion (attachment)
- If available: Dermoscopic image of lesion (attachment)

Which has red flag “A”?



• A

• B

• A+B

Red flag “A”: asymmetry

Speckled lentiginous naevus



Melanoma in situ



Which has red flag “B”?



• A

• B

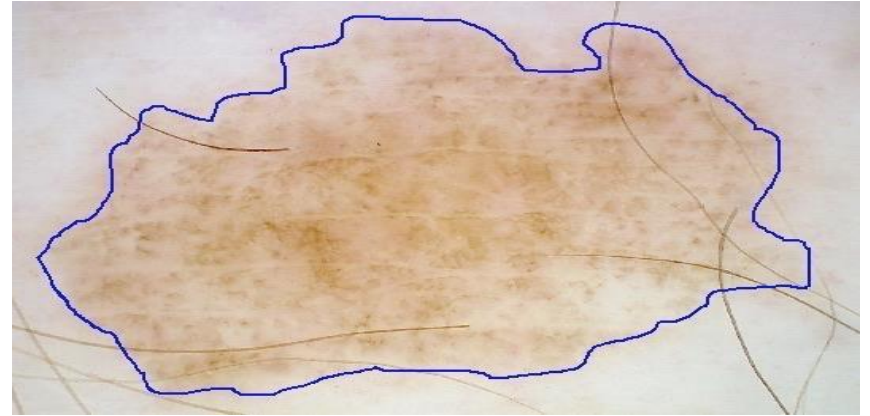
• A+B

Red flag “B”: border

Melanoma in situ

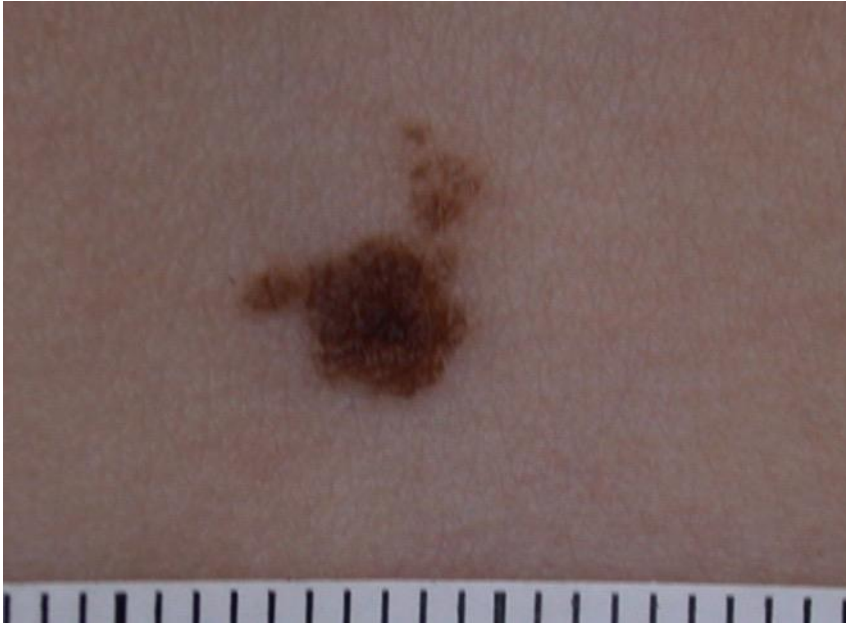


Benign melanocytic naevus



Irregular border

Congenital naevus



Congenital naevus



Which has red flag “C”?



• A

• B

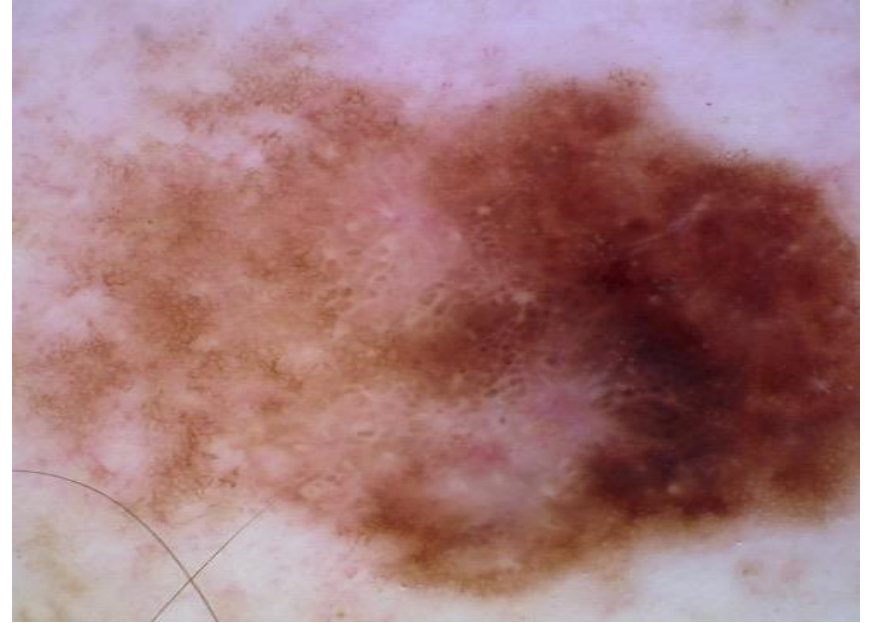
• A+B

Red flag “C”: colour

Nodular melanoma 2.5 mm



Melanoma in situ



Which has red flag “D”



• A

• B

• A+B

Red flag “D”: different

SS melanoma 2.5 mm

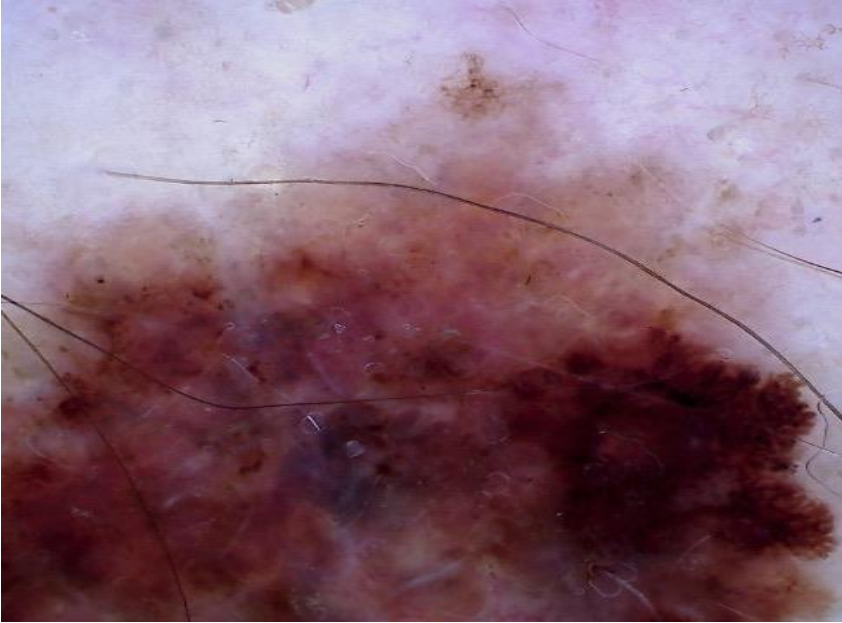


Seborrheic keratosis



Red flag “D”: different

SS melanoma 3 mm



Seborrhoeic keatosis



UGLY DUCKLING SIGN

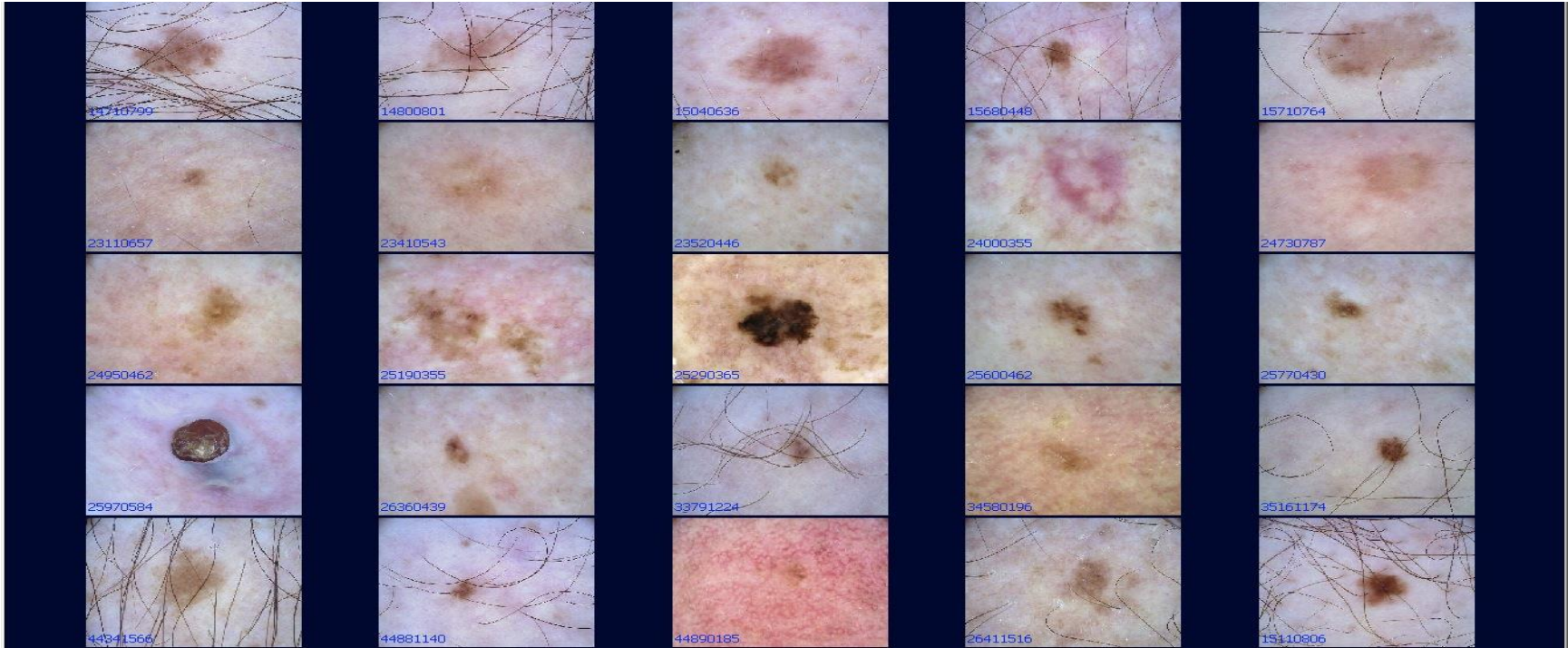
Ugly duckling sign



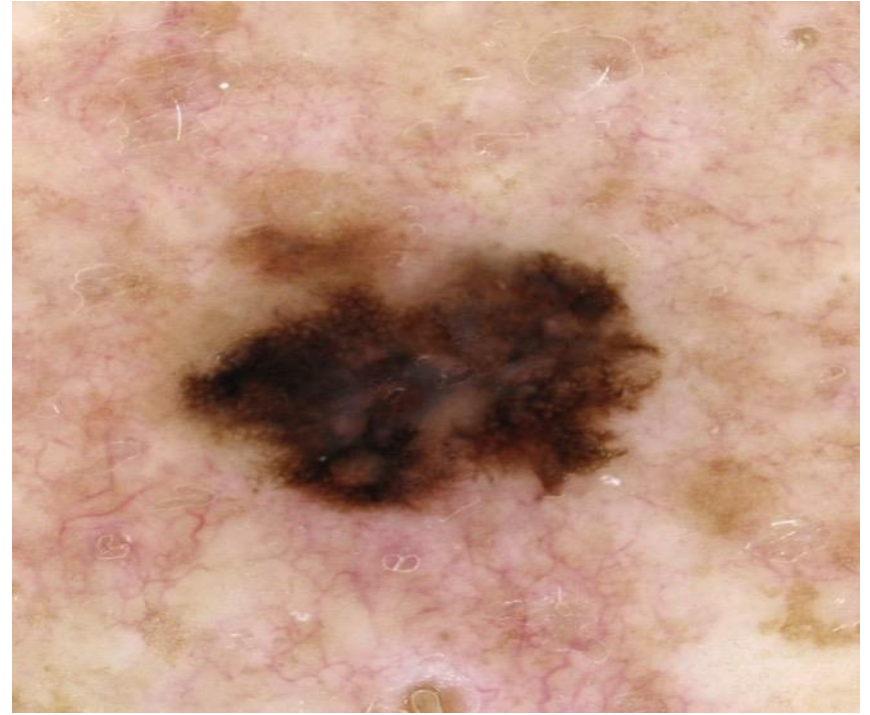
Ugly duckling sign + magnification



Ugly duckling sign: dermatoscopy



Ugly duckling has lost its pattern



Which has red flag “E”?



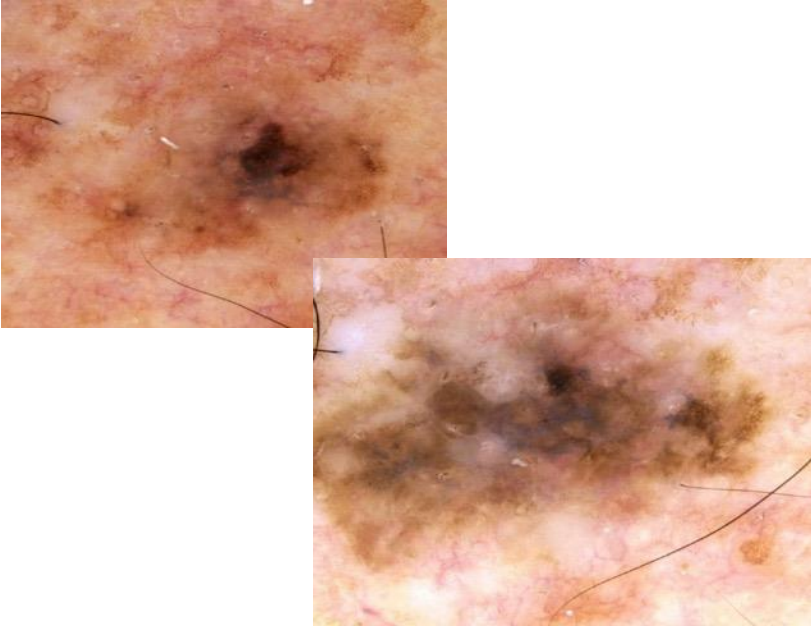
• A

• B

• A+B

Which has red flag “E”

2010–2011



2012–2015

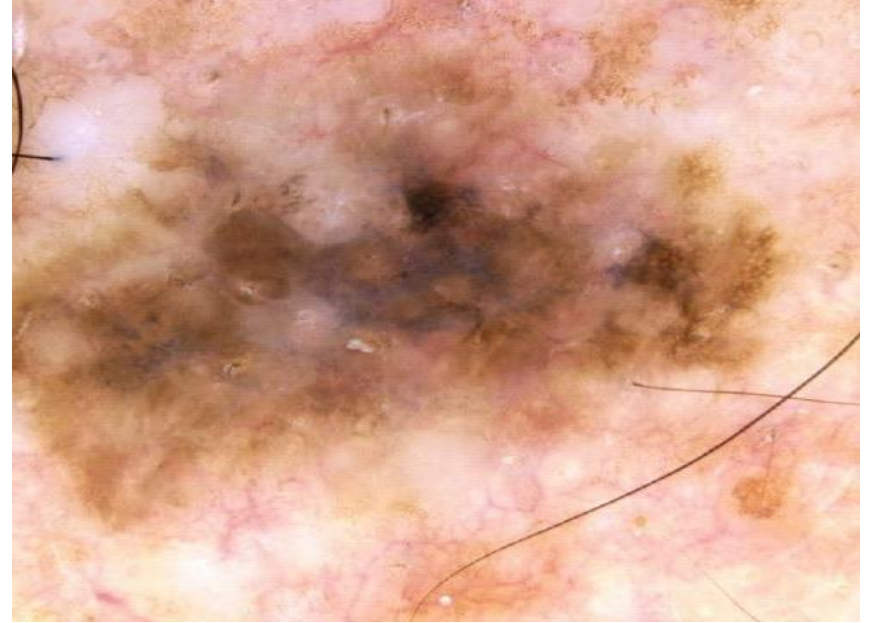


Evolving: lesion A

2010: monitored



2011: melanoma in situ



Evolving lesion

2010



2011: melanoma in situ

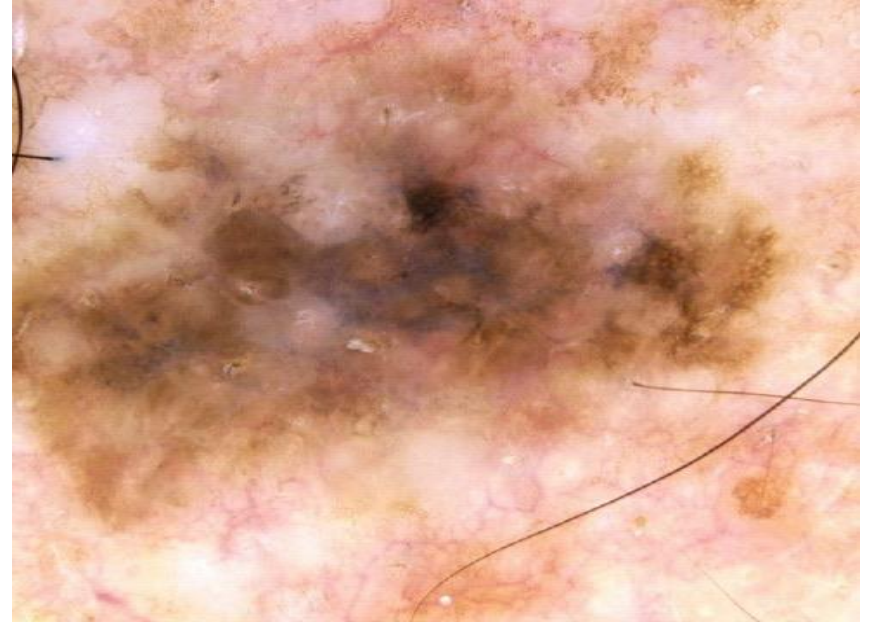


Evolving lesion

2010: monitored



2011: melanoma in situ



VASCULAR LESIONS

Vascular lesions

- Telangiectasia
 - Branched red, purple, blue lines
- Malformation
 - Parallel lines (acral)
- Angiomas
 - Red, purple or blue clods
 - Structureless red, purple, blue zones
- Capillaritis
 - Red or brown dots
- Bleeding
 - Clods
 - Diffuse structureless red, purple, green, black

Red, purple, blue



Branched red lines: telangiectasia



Clods in angioma

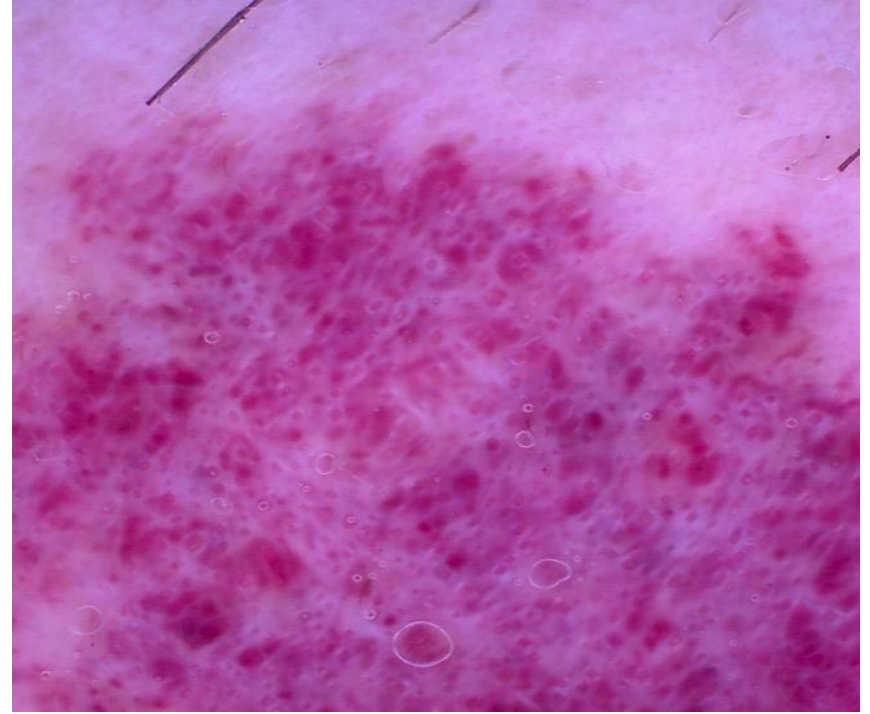
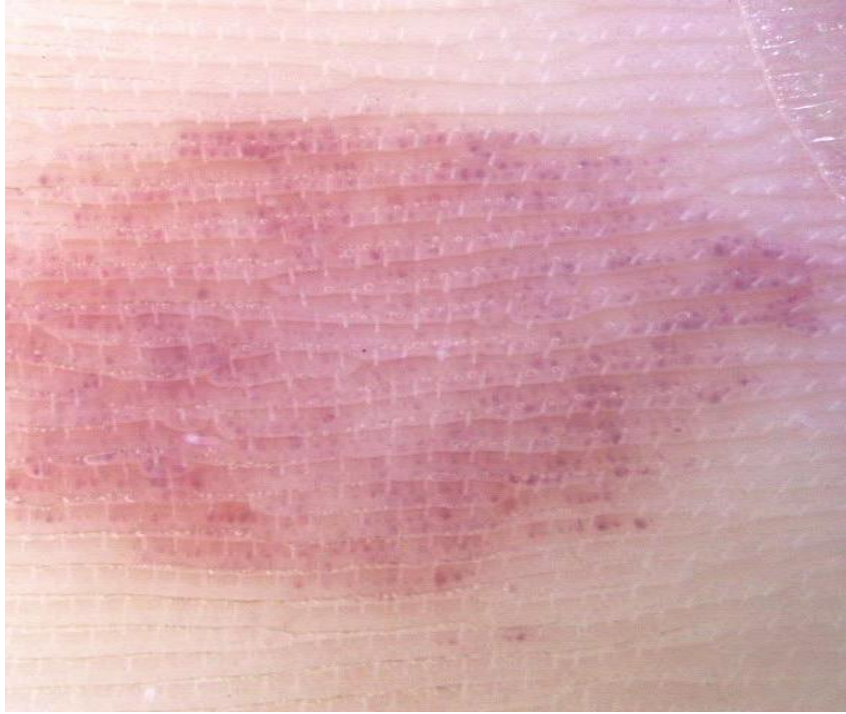
Angioma serpiginosa



Cherry angioma



Red, purple or blue clods: vascular malformation

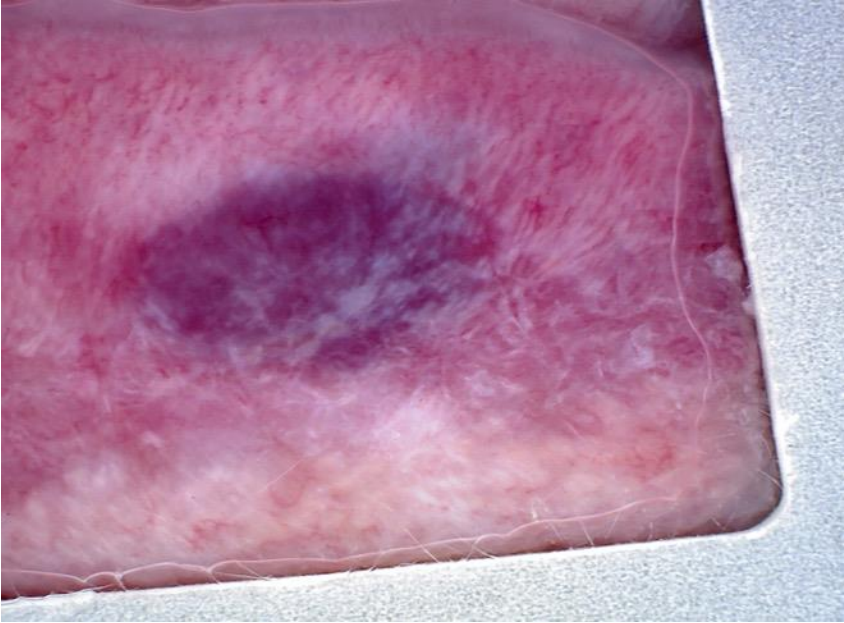


Clods in lymphangioma

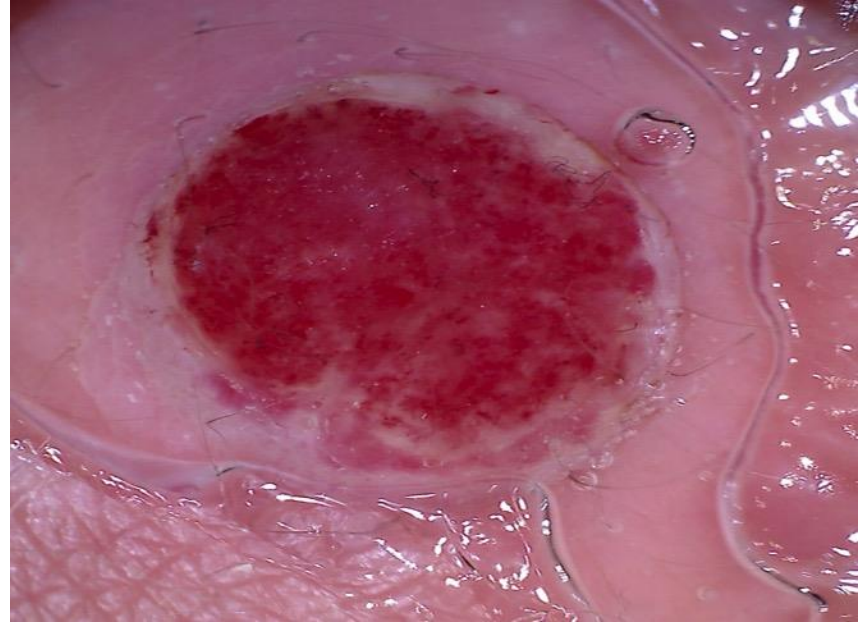


Structureless in angioma

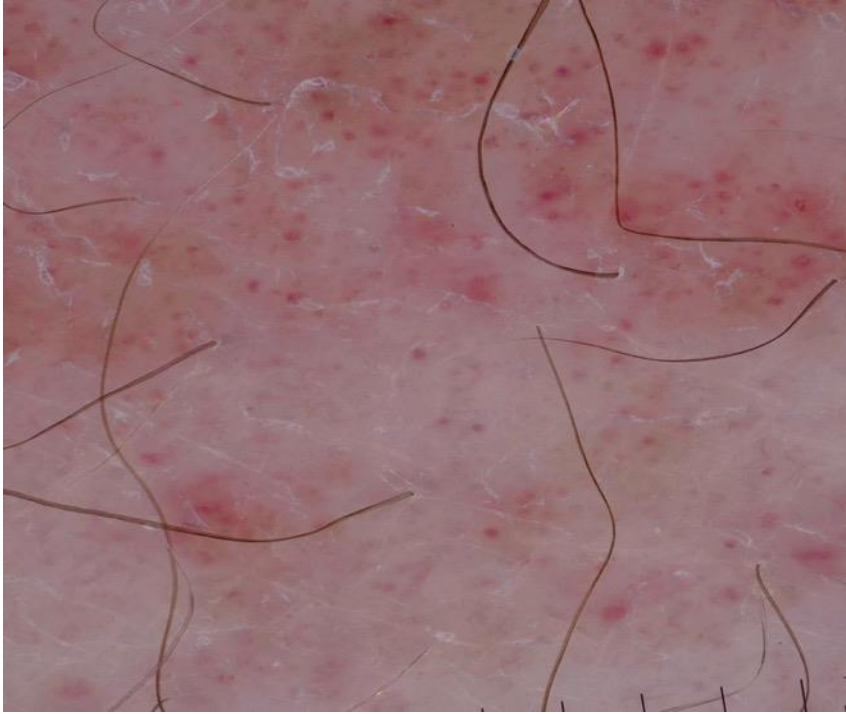
Venous lake



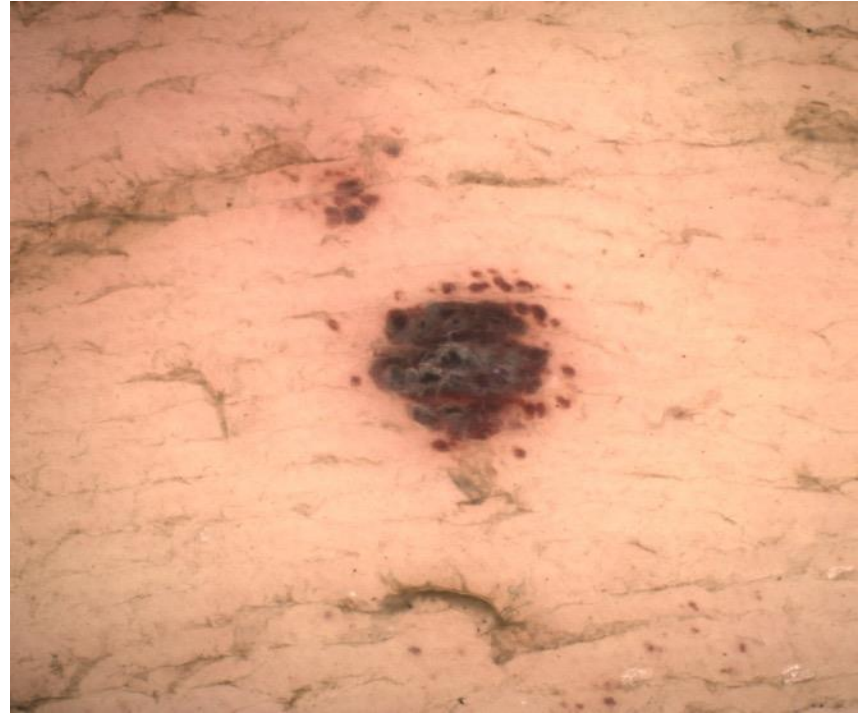
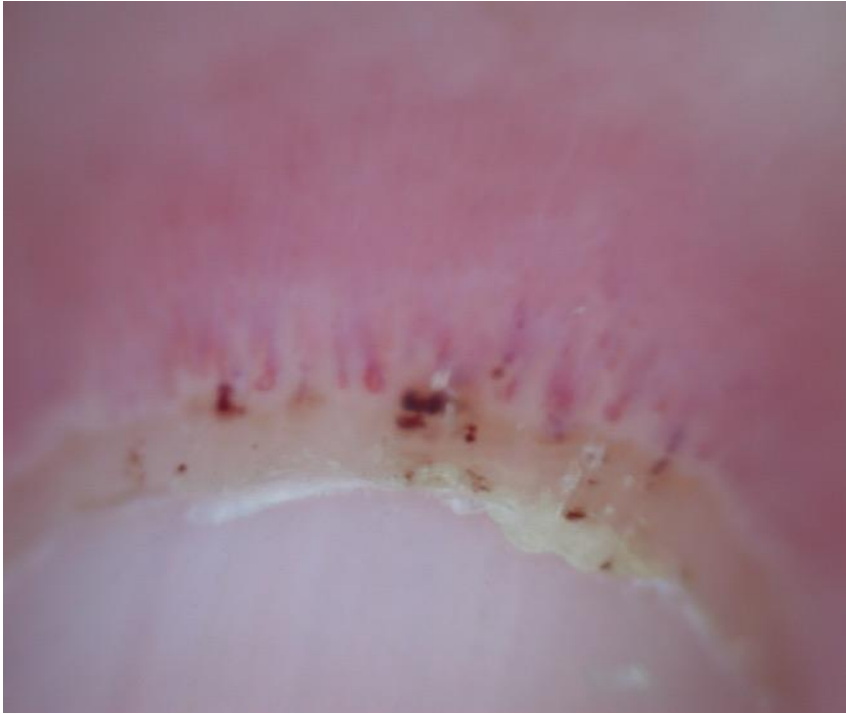
Pyogenic granuloma



Dots in capillaritis



Clods in purpura



Structureless in purpura



Which is angioma?



• A

• B

• A+B

A is angioma

Cherry angioma



Dermal papillomatous naevus



Dermatoscopy

Cherry angioma



Red clods

Dermal papillomatous naevus



Brownish-blue clods

DERMATOFIBROMA

Dermatofibroma

- Pinch sign
- Tissue reaction not neoplasm
- Fibrosis of dermis
- Hyperpigmentation of basal keratinocytes overlying the fibrosis



Dermatofibroma

Brown firm dermal papule



White centre, brown radial

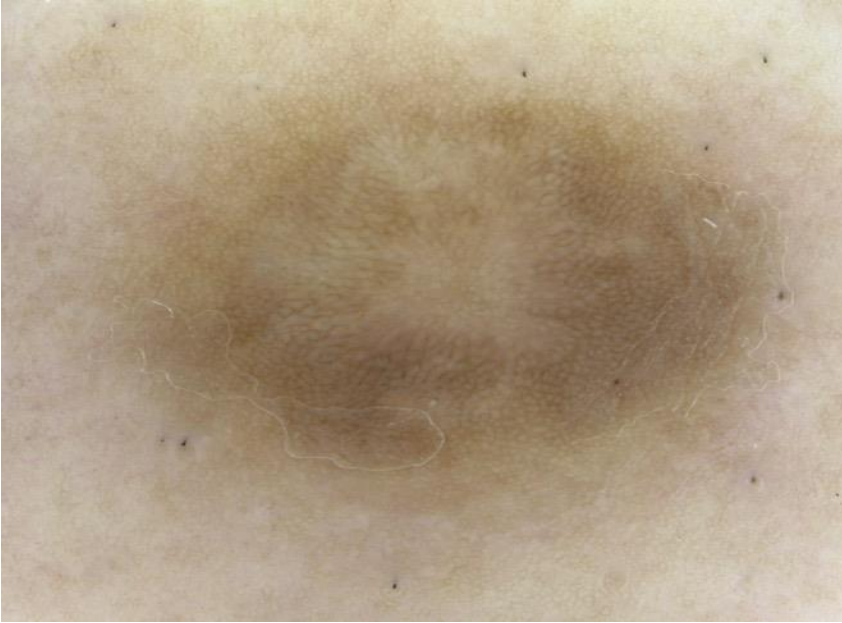


Dermatofibroma

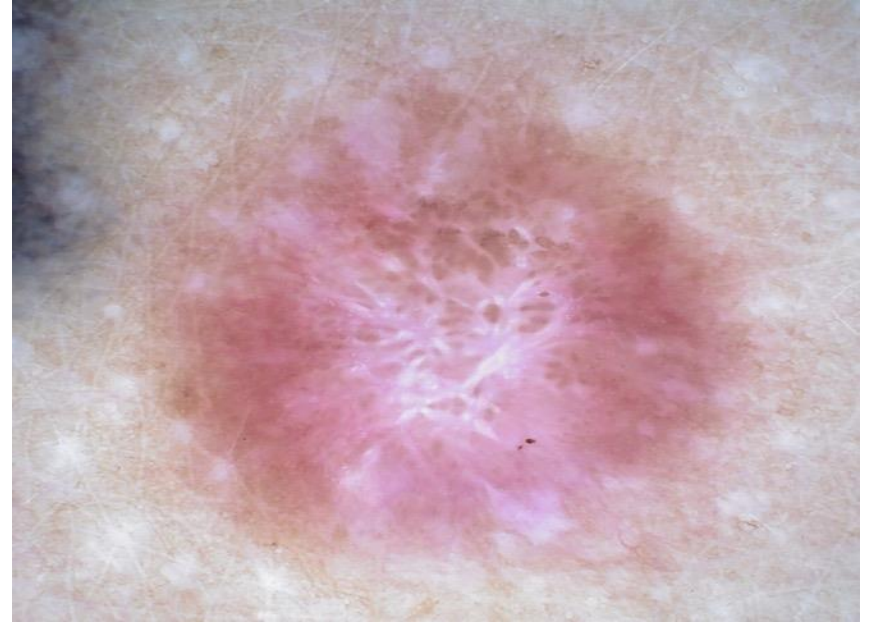
- Complex pattern > single pattern
- Central white area or areas
- Radial lines or fine reticular pattern or light brown structureless

Central white area: dermatofibroma

Reticular pattern

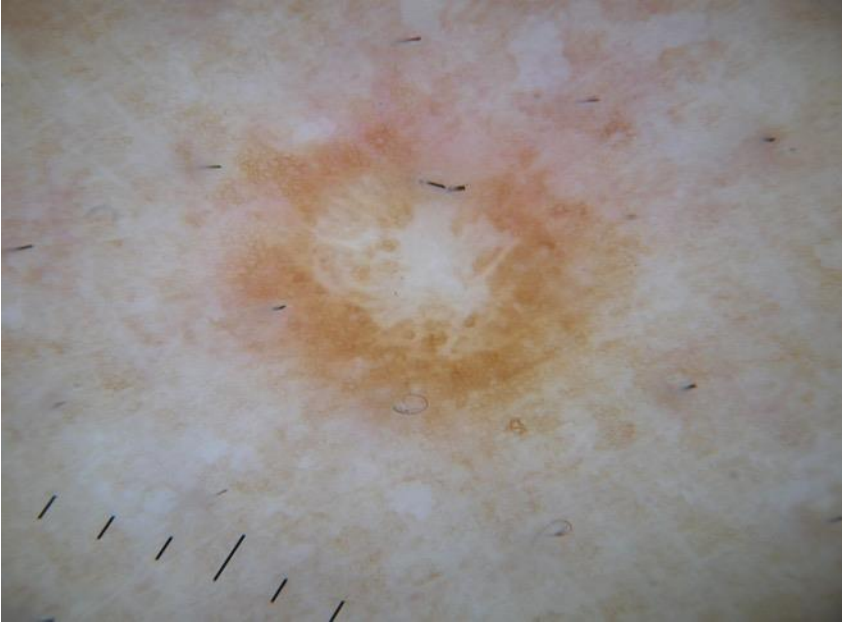


Structureless



Central white area: dermatofibroma

Reticular pattern



Structureless



Which is dermatofibroma?



• A

• B

• A+B

A is dermatofibroma

Dermatofibroma



Pink naevus



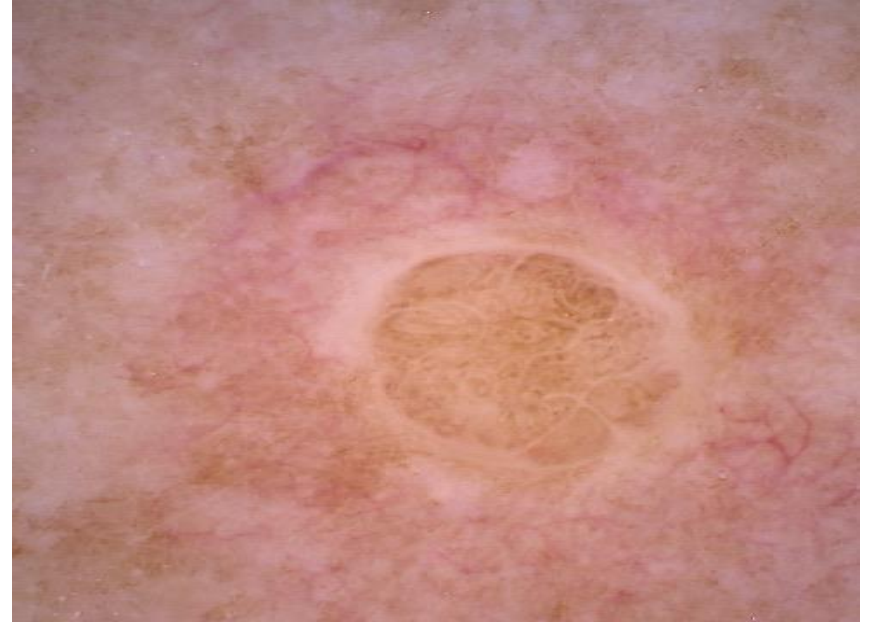
Dermatoscopy

Dermatofibroma



- Central white area

Halo dermal naevus



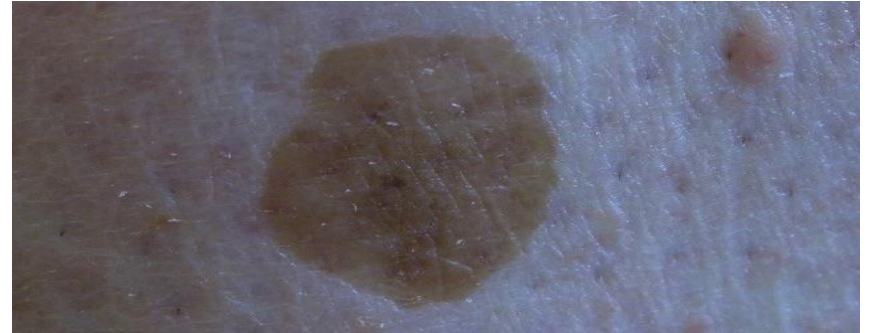
- Peripheral white zone

SOLAR LENTIGO

Solar lentigo

- Circumscribed light brown macule
- May develop into seborrhoeic keratoses
- In sun-damaged skin
- Melanin in basal keratinocytes
- Melanocytes normal
- Elongated rete ridges

Solar lentigo



Solar lentigo dermoscopy

- Sharp edge
- Reticular pattern
- Dotted pattern
- Curved parallel line pattern
- Circle pattern



Solar lentigo

Circle pattern

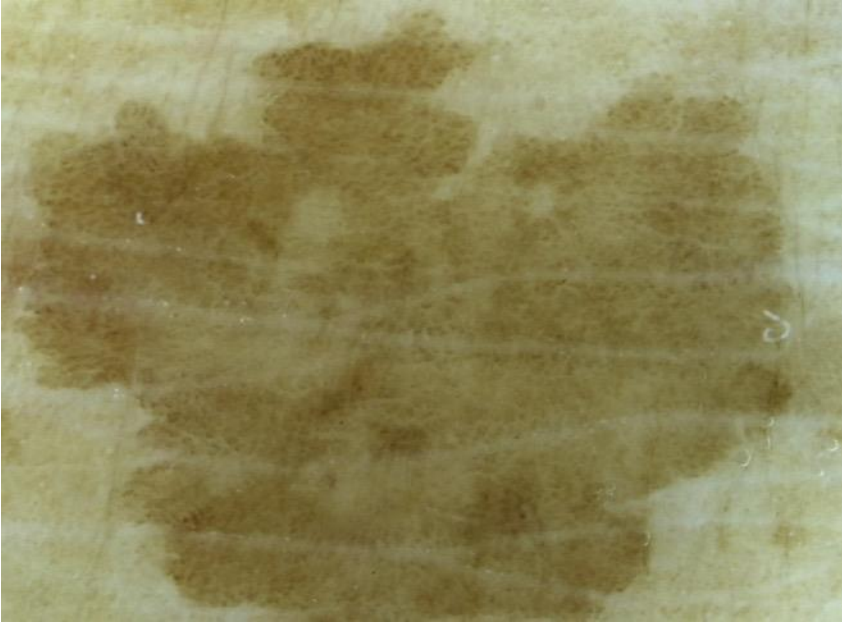


Structureless pattern



Solar lentigo

Dotted pattern



Curved parallel lines



Which is solar lentigo?



• A



• B

• A+B

A is solar lentigo

Solar lentigo

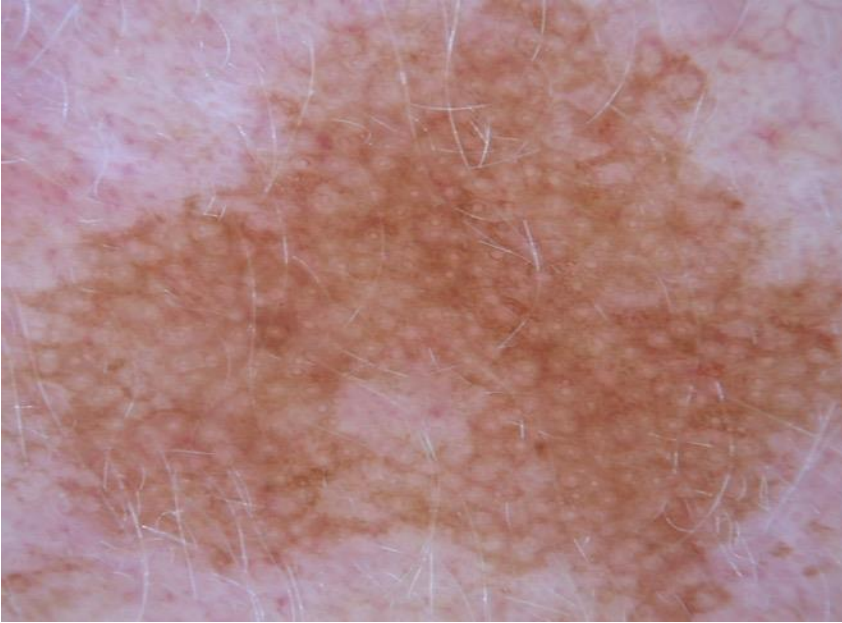


Melanocytic naevus



Facial lesions have holes

Solar lentigo



- Moth-eaten

Melanocytic naevus



- Roundish

SEBORRHOEIC KERATOSIS

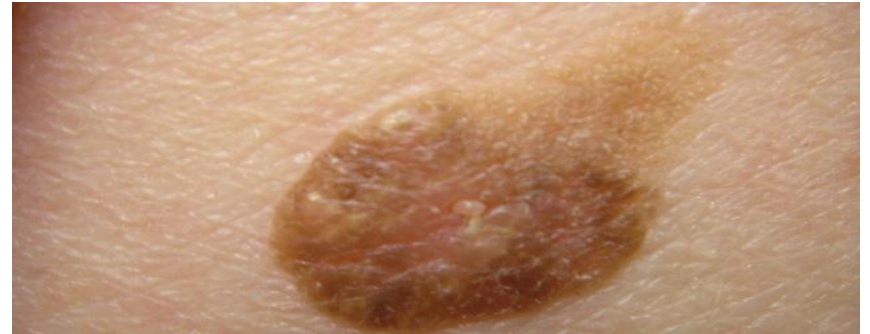
Seborrhoeic keratoses

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

Seborrheic keratosis

- Sharp border
- Irregular orange, grey, brown, black clods
- Round or oval, white or yellow clods
- Thick curved lines
- Fissures

Seborrhoeic keratoses



Seborrheic keratosis

Stuck on, warty



Orange clods, thick curved lines



Seborrhoeic keratosis

Yellowish, greasy, stuck on



White clods

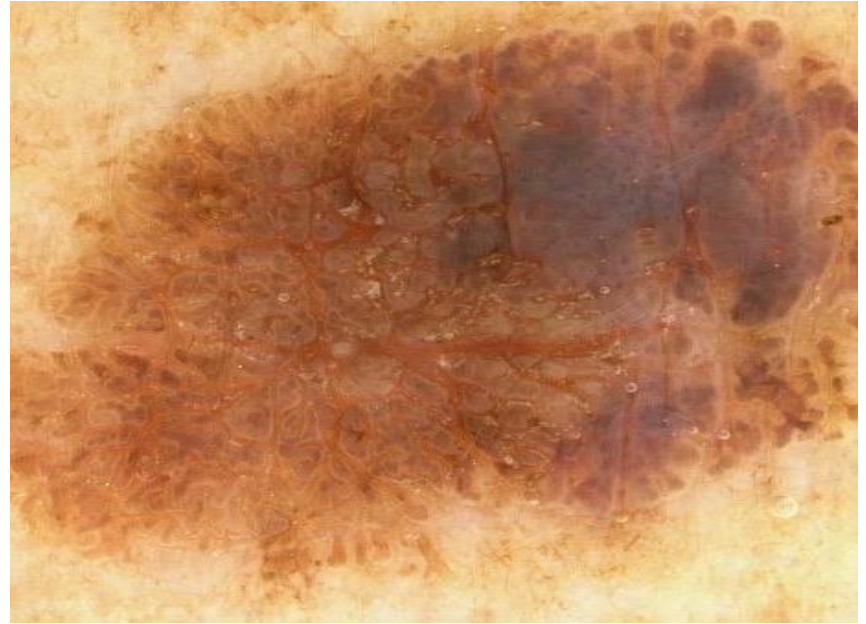


Seborrheic keratosis

Thick curved lines, orange clods

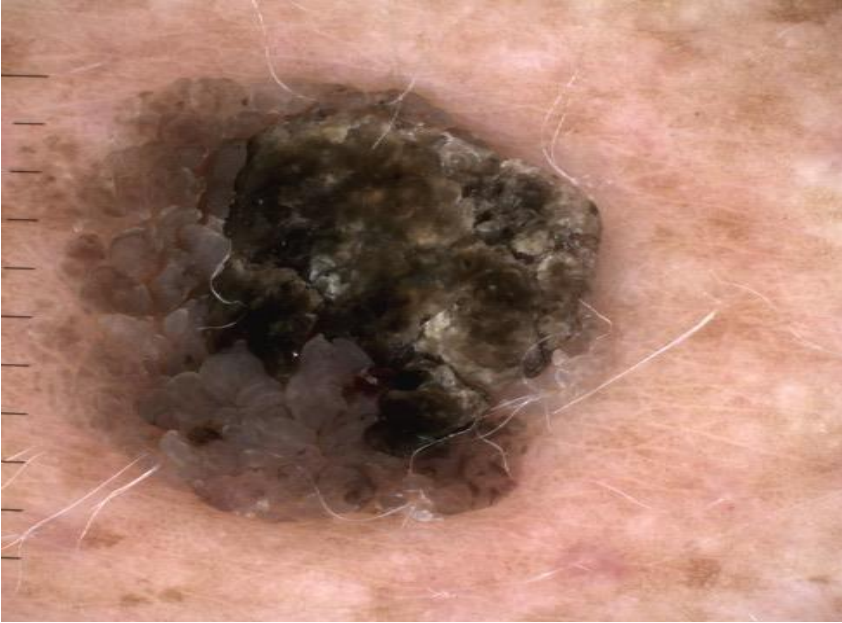


Thickened curved lines, fissures



Seborrhoeic keratoses change

Seborrhoeic keratosis 2014



Seborrhoeic keratosis 2015



Which is seborrhoeic keratosis?



• A

• B

• A+B

A is seborrhoeic keratosis

Seborrhoeic keratosis

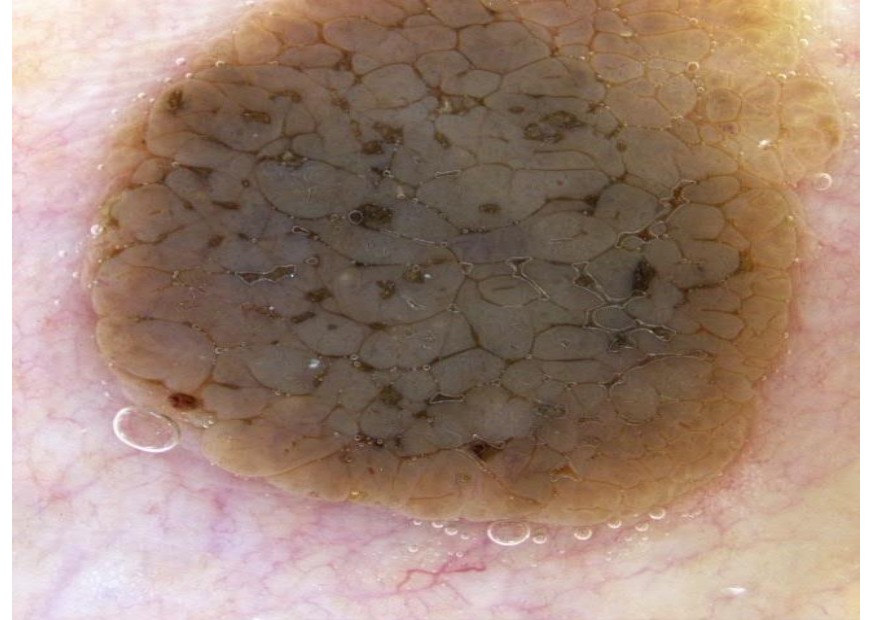


Melanoma



Easy! The seborrhoeic keratosis is scaly / warty

Which is seborrhoeic keratosis?



• A

• B

• A+B

B is seborrhoeic keratosis

Dermal papillomatous naevus



Discontinuous clods

Seborrhoeic keratosis



Interlinked clods + thick lines¹⁸⁵

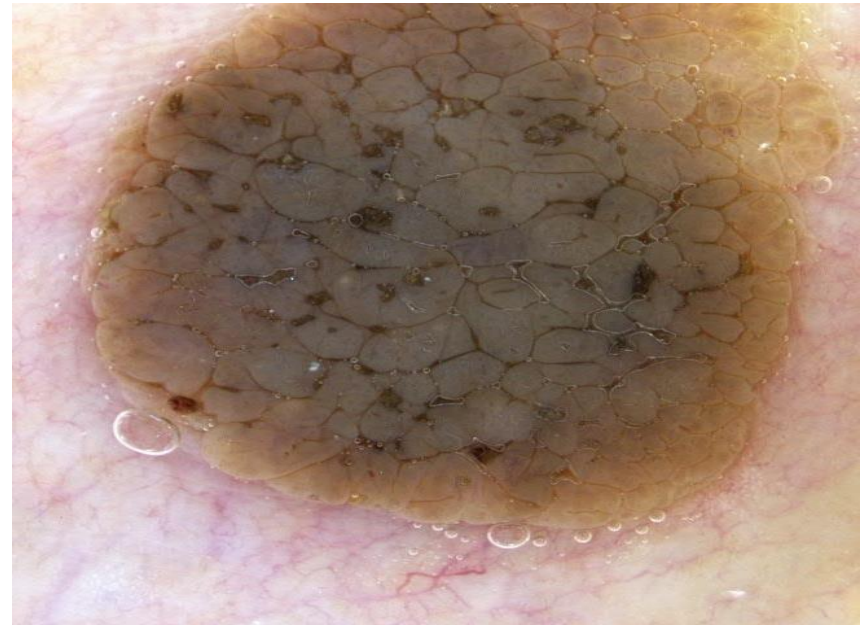
Is precise diagnosis important?

No – if both are benign!

Dermal papillomatous naevus



Seborrhoeic keratosis



Does it wobble?

Yes: melanocytic naevus



No: seborrheic keratosis



Not always easy

Seborrheic keratosis

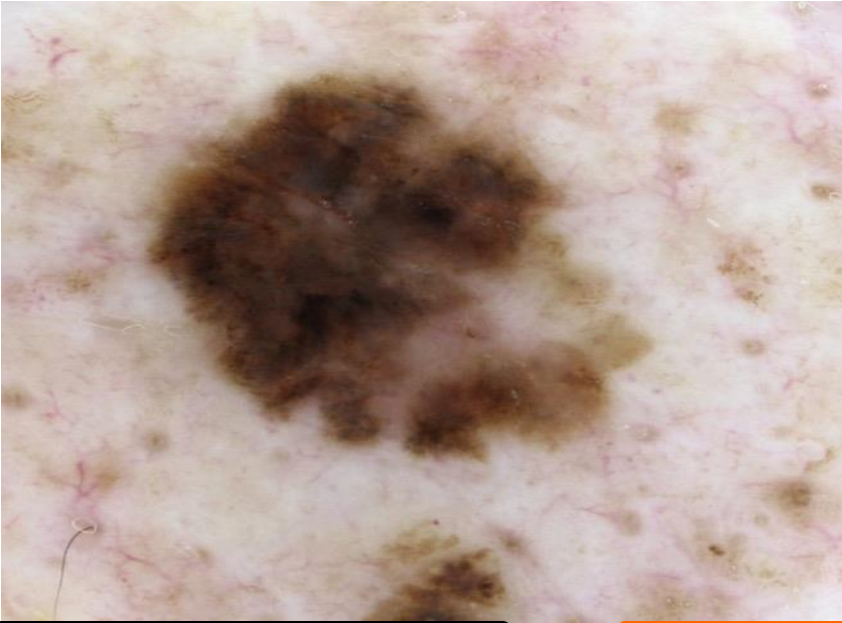


Melanoma



Both can have have irregular and complex structures

Which has the most colours?



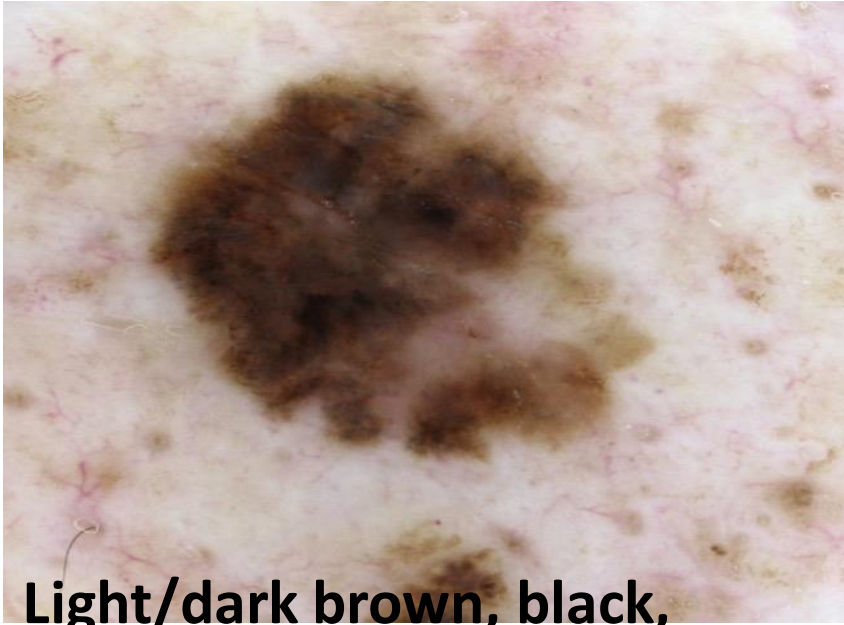
• A

• B

• A+B

Which has the most colours?

Melanoma

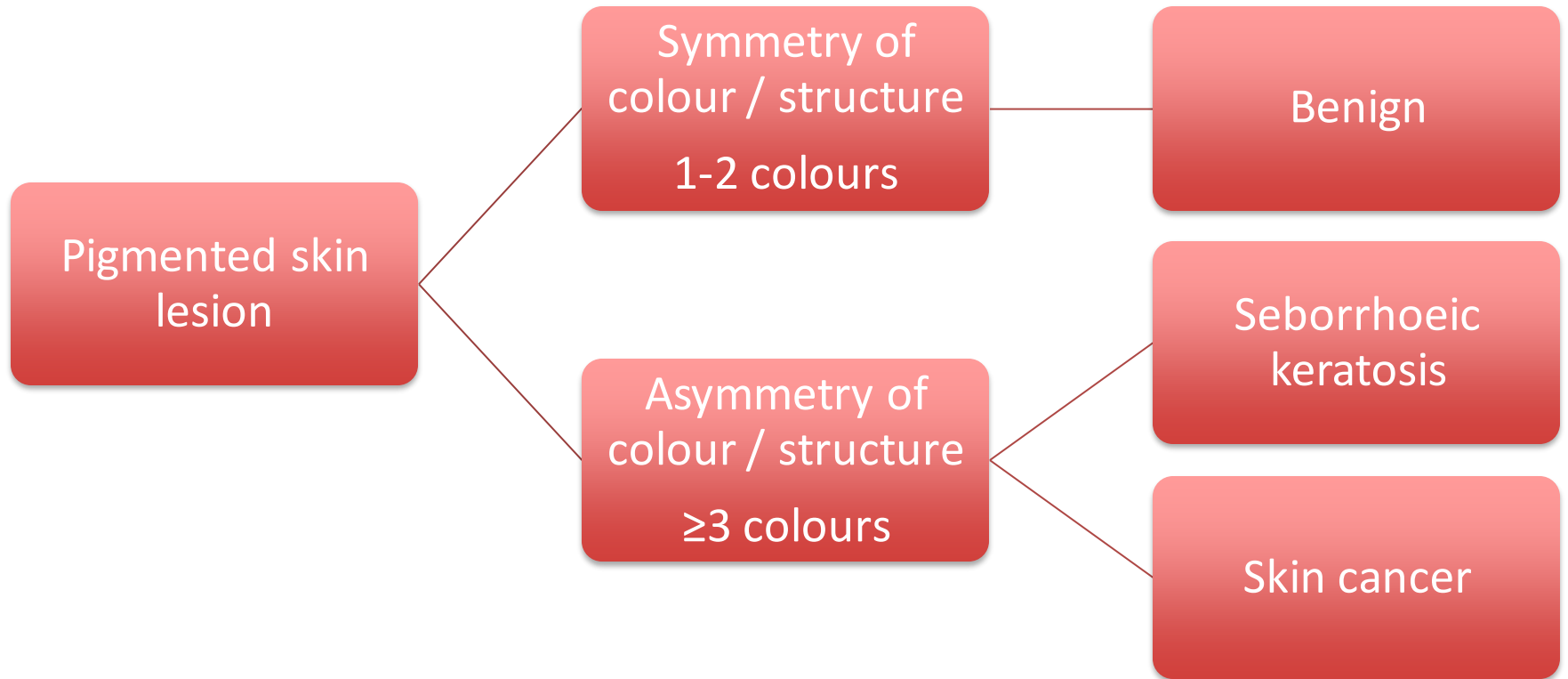


**Light/dark brown, black,
white, grey**

Seborrhoeic keratosis



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



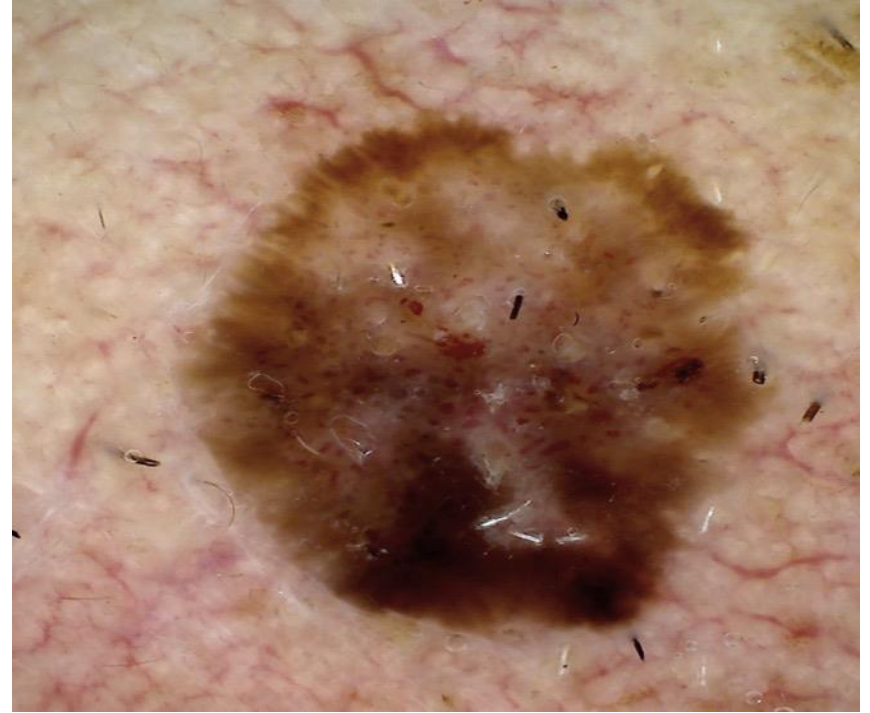
Not sure?

- Melanoma vs seb k
- Thickened lesion
- Don't monitor:
 - Excise OR
 - Refer



Seb k vs melanoma

- Chaos +
- Clues
 - Eccentric structureless
 - Radial streaming
 - Polymorphous vessels



Irritated seborrhoeic keratosis

Polarised



Unpolarised

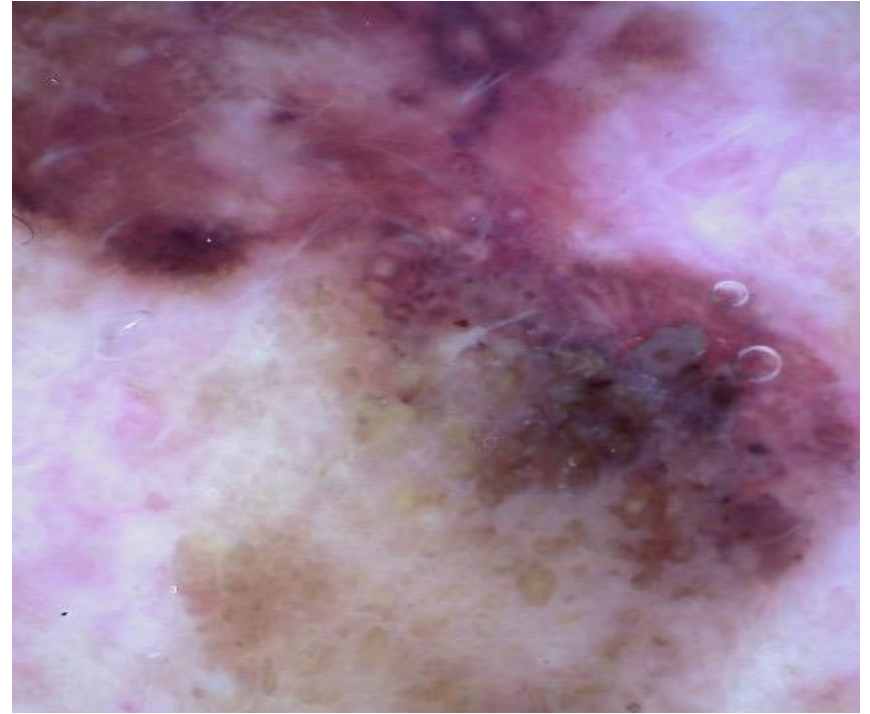


Some doubt? Incisional biopsy may be appropriate, as likely diagnosis is seb k

Melanoma + seb K



Melanoma + seb K



BASAL CELL CARCINOMA

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



BCC dermoscopy

- Irregular lesion with asymmetry of structure
- Erosions, ulceration often
- Branched red lines
- Pigmented grey dots, greyish radial lines, bluish clods

Dermatoscopy of basal cell carcinoma

Irregular, bleeding, growing



Irregular, bleeding, branched red lines



Dermatoscopy of basal cell carcinoma

Pink, shiny, enlarging

Peripheral grey dots,
red branched lines



Which is BCC?

A



B



• A

• B

• A+B

B is BCC

Dermal naevus



Basal cell carcinoma



Dermatoscopy

Dermal naevus



Structureless + terminal hairs

Nonpigmented basal cell carcinoma



Branched red lines + scale + ulcer

Which is BCC?



B is BCC

Cherry angioma

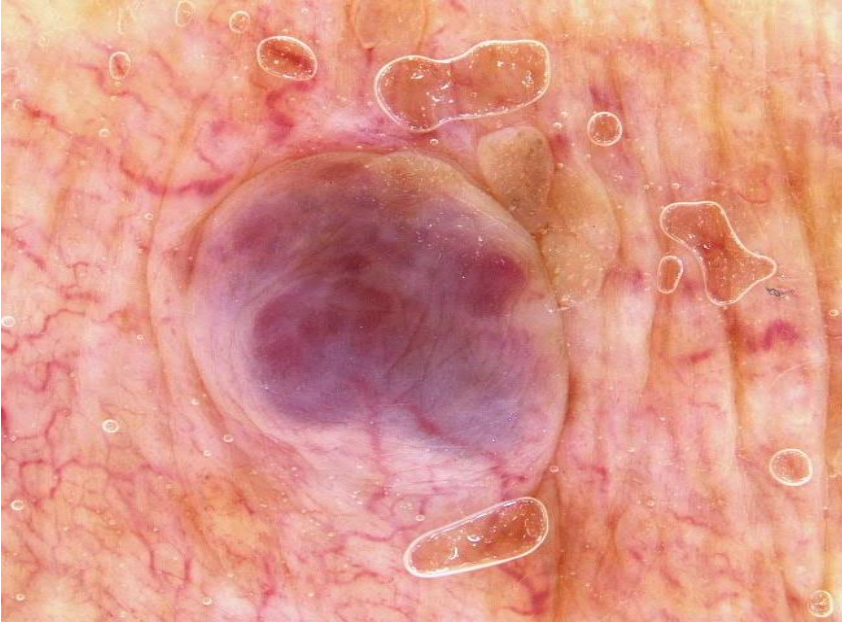


Pigmented basal cell carcinoma



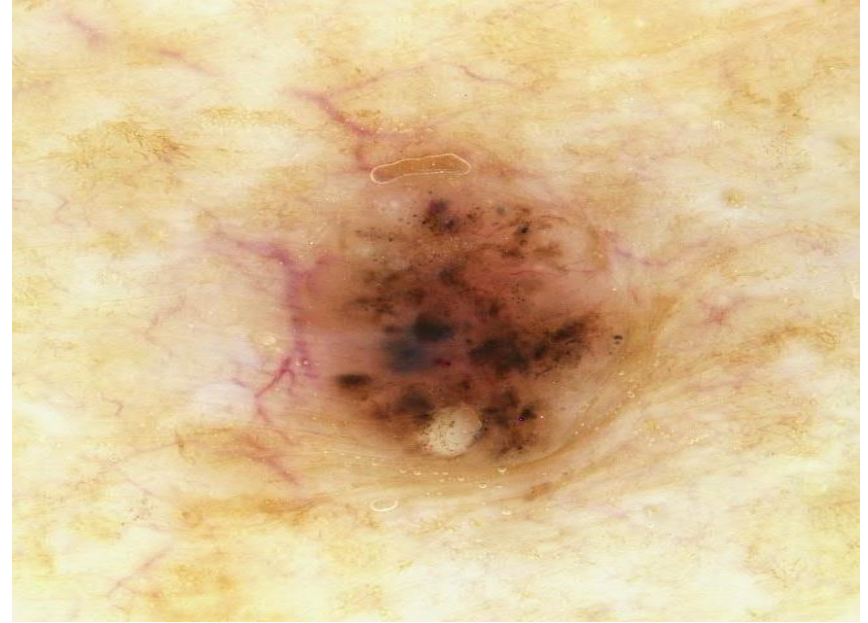
Dermatoscopy

Angioma



Purple clods

Pigmented basal cell carcinoma



Irregular clods + dirty dishwater

Dirty dishwater



CHAOS AND CLUES

Dermatoscopy of malignant lesions

Chaos

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

+ One of the following clues:

1. Eccentric structureless zones, 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

Chaos & Clues poster

- See Melnet website
- Provided by A/Prof Cliff Rosendahl

CHAOS & CLUES
A Dermatoscopic Decision Algorithm for Pigmented Skin Malignancy^{1,2}
Cliff Rosendahl³ Alan Cameron³ Philipp Tschandl³ Agata Butinska³ Jean-Yves Gauthier³ Harald Kittler³

Flowchart for the CHAOS & CLUES Algorithm¹

Is there CHAOS?

CHAOS

Is a CLUE to malignancy present?

CLUES

Specific Diagnosis of Pigmented Skin Malignancies¹

Exclusion of Seborrheic Keratosis by Pattern Analysis

Evaluation of CHAOS & CLUES

Attributions

References

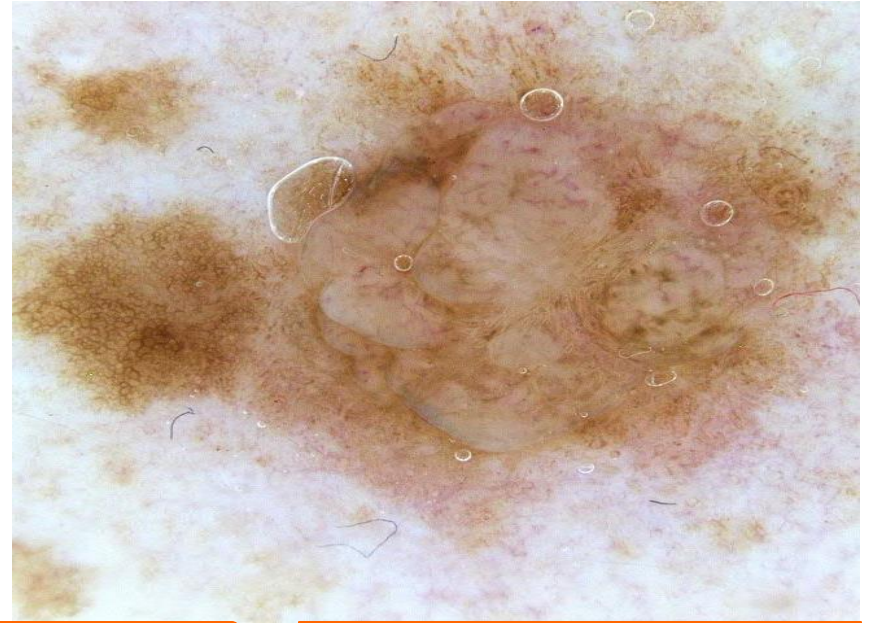
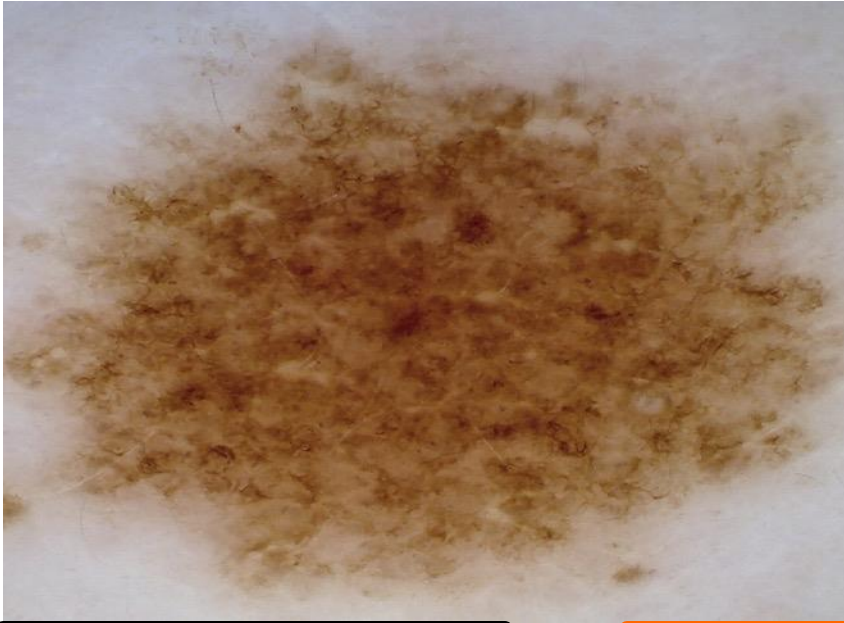
The poster is a comprehensive guide for dermatoscopic diagnosis. It starts with a flowchart that leads to 'CHAOS' (Chaos) or 'CLUES' (Clues). 'CHAOS' is defined as a pattern of multiple colors or structures. 'CLUES' are defined as specific features that suggest malignancy. The poster lists 10 CLUES: 1. Grey or Blue Structures, 2. Eccentric Structureless Area, 3. Thick Lines Reticular or Branched, 4. Black Dots or Clods, Peripheral, 5. Lines Radial or Pseudopods, Segmental, 6. White Lines, 7. Polymorphous Vessels, 8. Lines Parallel, Ridge (Palms or Soles) or Chalk (Nails), 9. Thick and white, parallel, branched, 10. Thick and white, parallel, branched. The poster also includes a section on 'Specific Diagnosis of Pigmented Skin Malignancies' and a section on 'Exclusion of Seborrheic Keratosis by Pattern Analysis'. The poster is signed by Cliff Rosendahl, Alan Cameron, Philipp Tschandl, Agata Butinska, Jean-Yves Gauthier, and Harald Kittler. It also includes a list of references and a section on 'Attributions'.

Asymmetry

- 2 or more patterns
- Non-concentric



Which has symmetry of structure?



• A

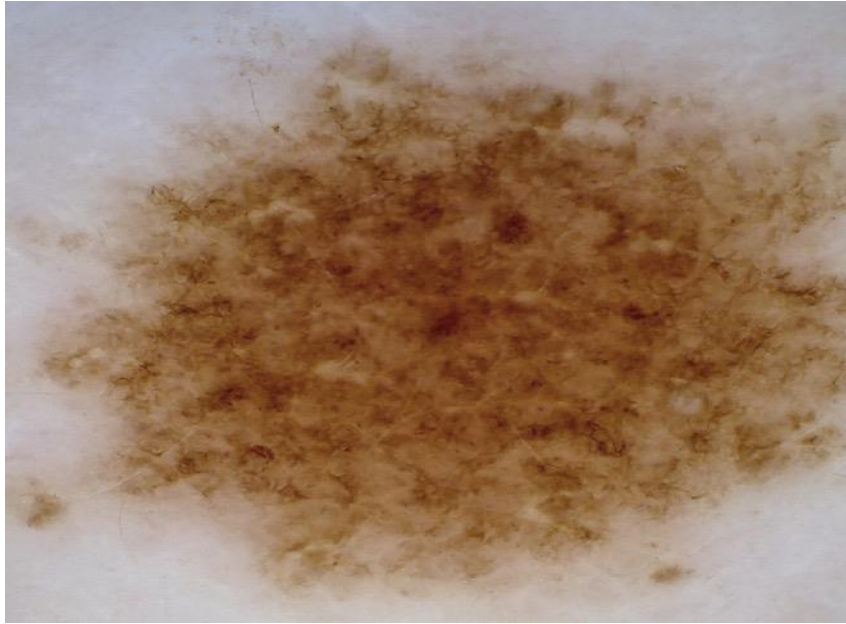
• B

• A+B

A has symmetry of structure

~~Benign naevus~~

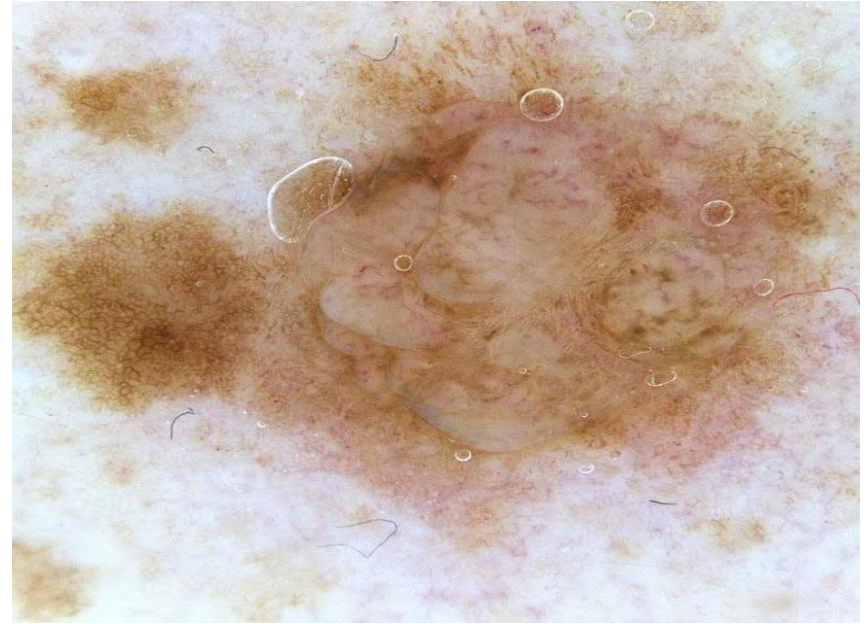
(no need to excise)



Single pattern

~~Benign naevus~~

(consider excision)



Complex pattern

Which lesion should you excise?

A



B



• A

• B

• A+B

Excise A

Melanoma: multicomponent



Asymmetrical structure

Benign naevus: reticular



Symmetrical structure

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. Large polygons
9. Parallel lines on the ridges (acral lesions only)

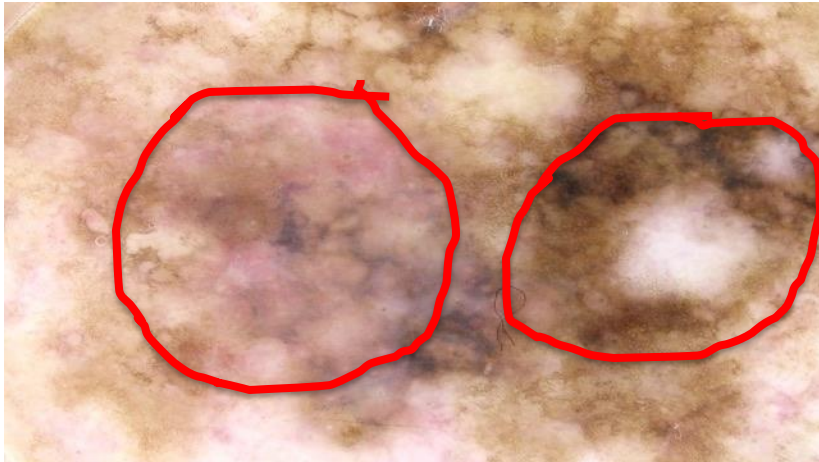
Eccentric structureless zones of any colour

- “Irregular blotch”
(if black)
- “Blue-white veil”
- “Blue veil”
- Localised (>10%)
hypopigmentation



Eccentric structureless zones of any colour

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

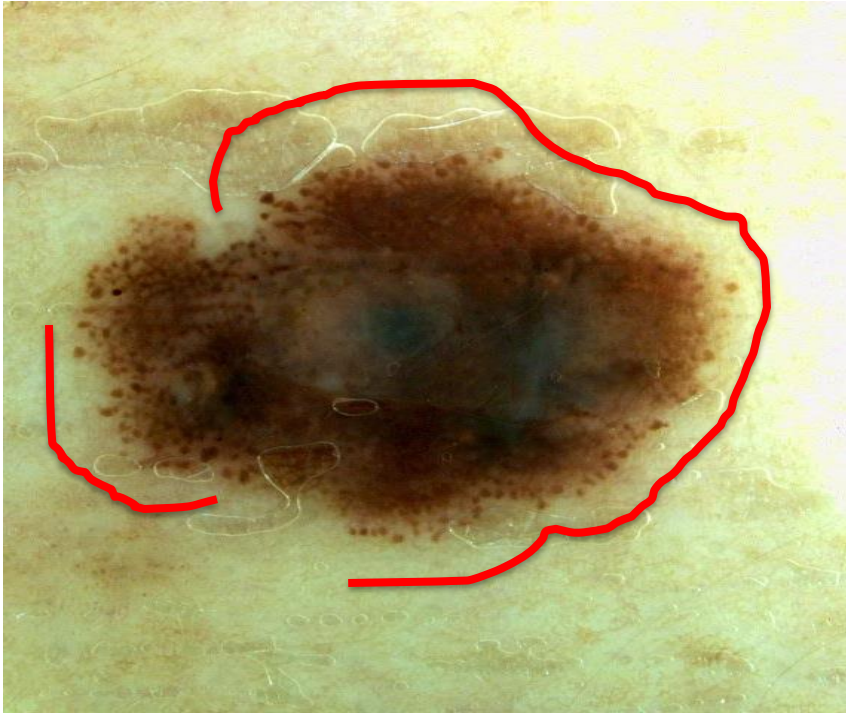


Gray circles, lines, dots, clods

- “Annular granular pattern”
- “Peppering”

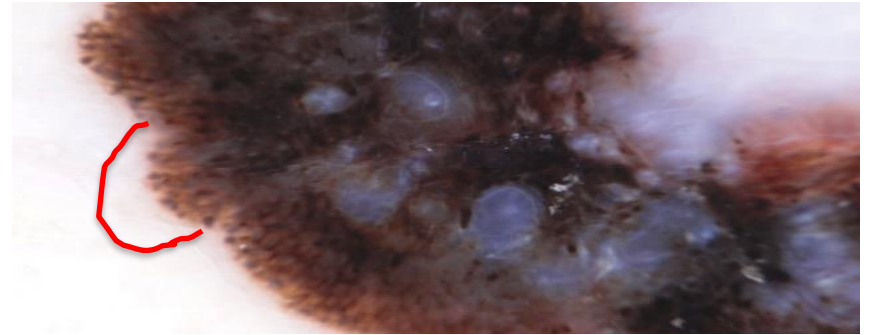


Black dots or clods at periphery



Focal pseudopods or radial lines at periphery

- “Peripheral streaks”
- “Radial streaming”



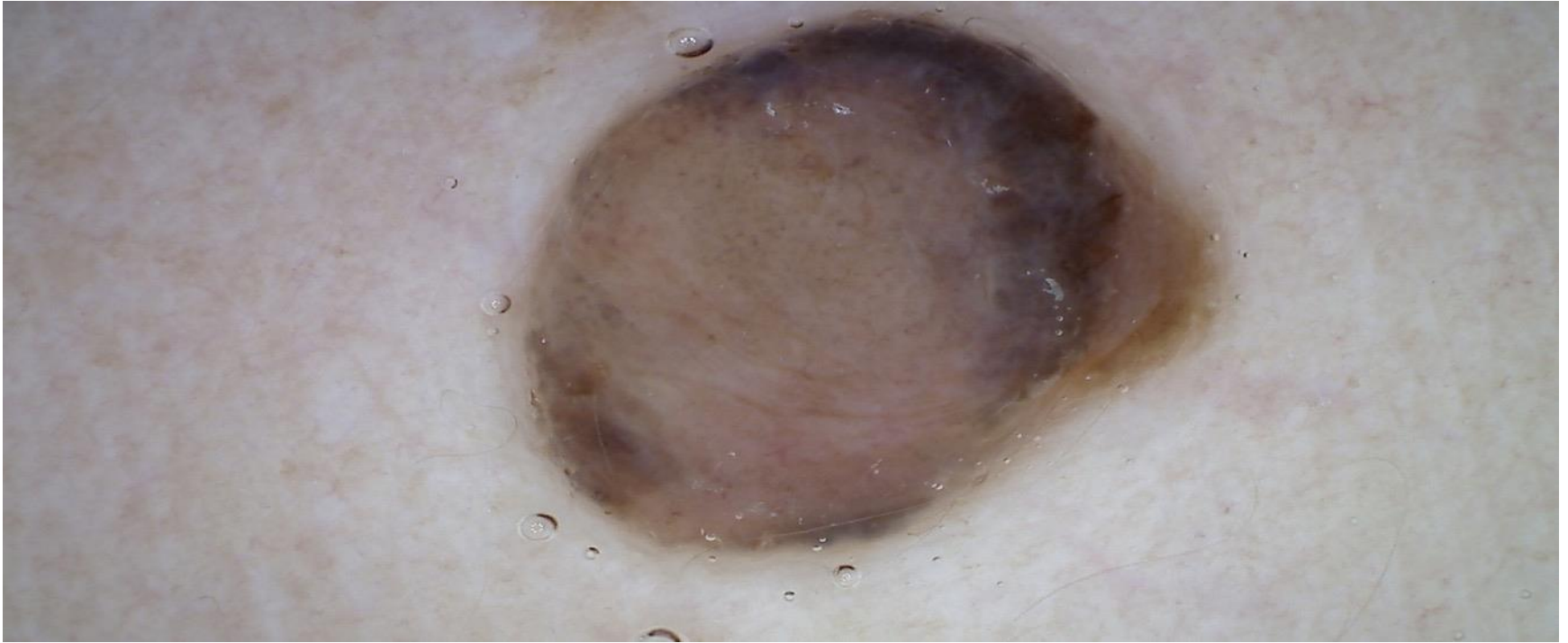
White lines

Short shiny streaks

- “Crystalline”
“chrysalis”
“chrysalids”
- More obvious on polarised dermatoscopy
- Often perpendicular or orthogonal

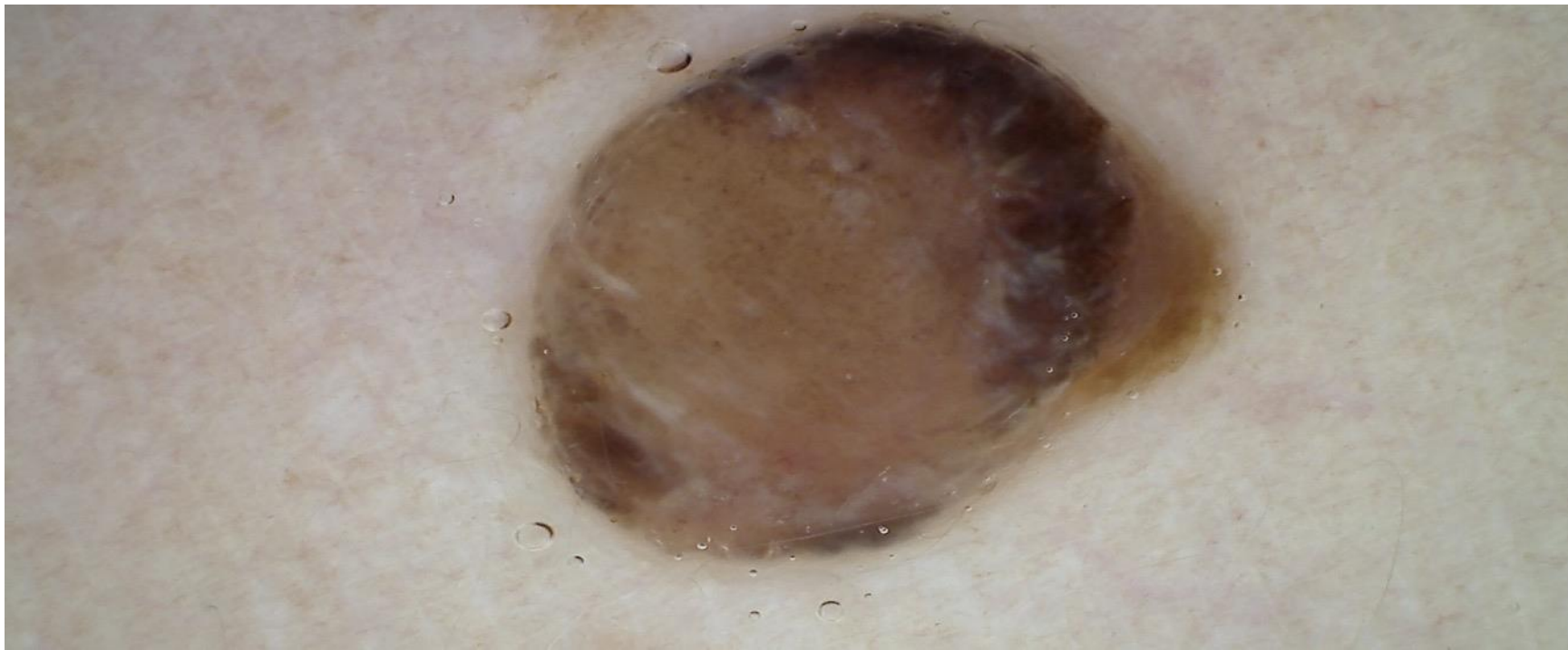


The 'blink' sign



Non-polarised view: nodular melanoma

The 'blink' sign

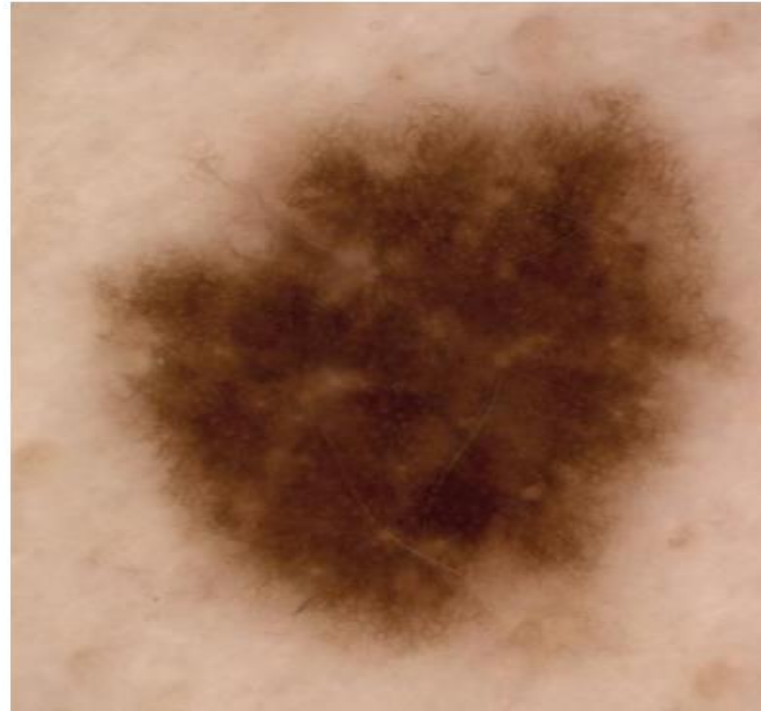
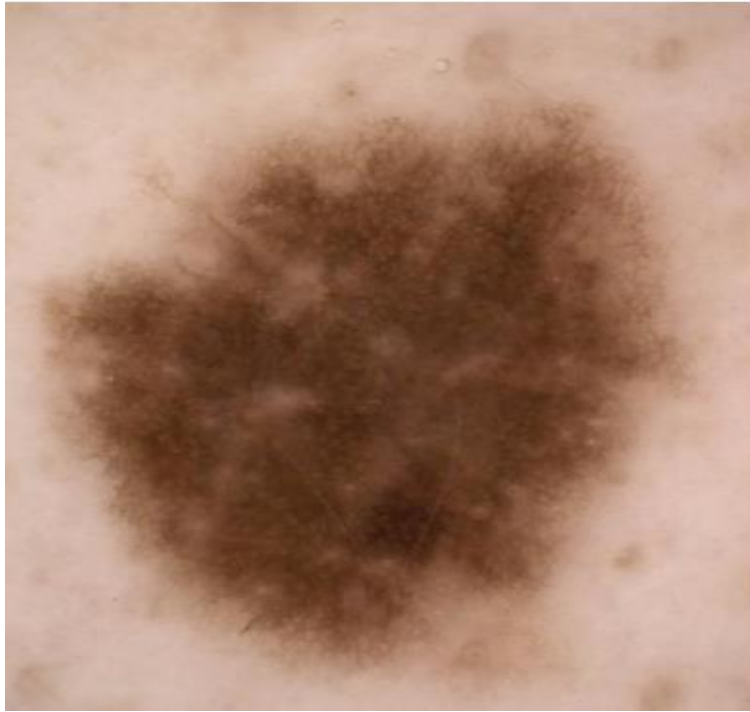


Polarised view: nodular melanoma

Polarised vs nonpolarised: melanoma



Polarised vs nonpolarised: naevus



Negative network

Skin coloured reticular pattern

- “Inverse pattern”
“negative network”
“Reticular depigmentation”
- Polarised + unpolarised dermatoscopy
- Intersecting white lines
- The lines must be whiter than surrounding skin

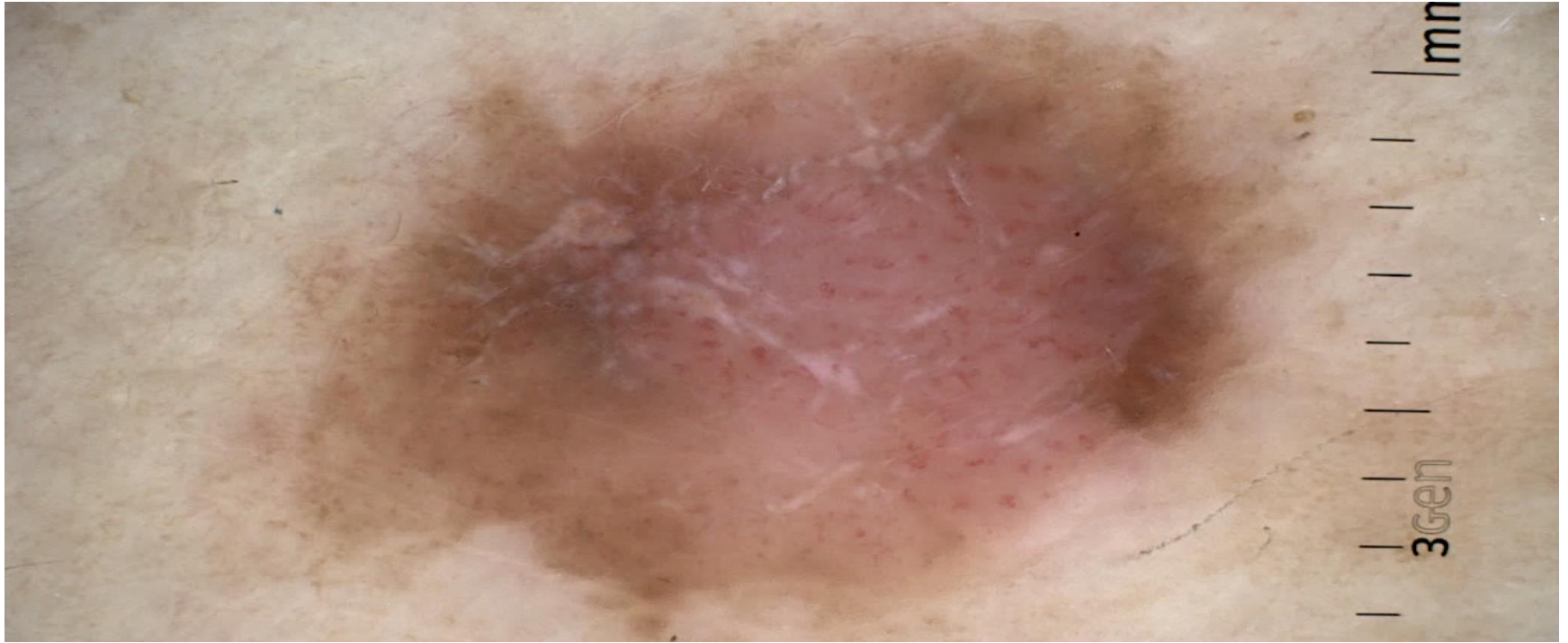


Thick reticular lines

- “Atypical pigment network”
- “Broadened pigment

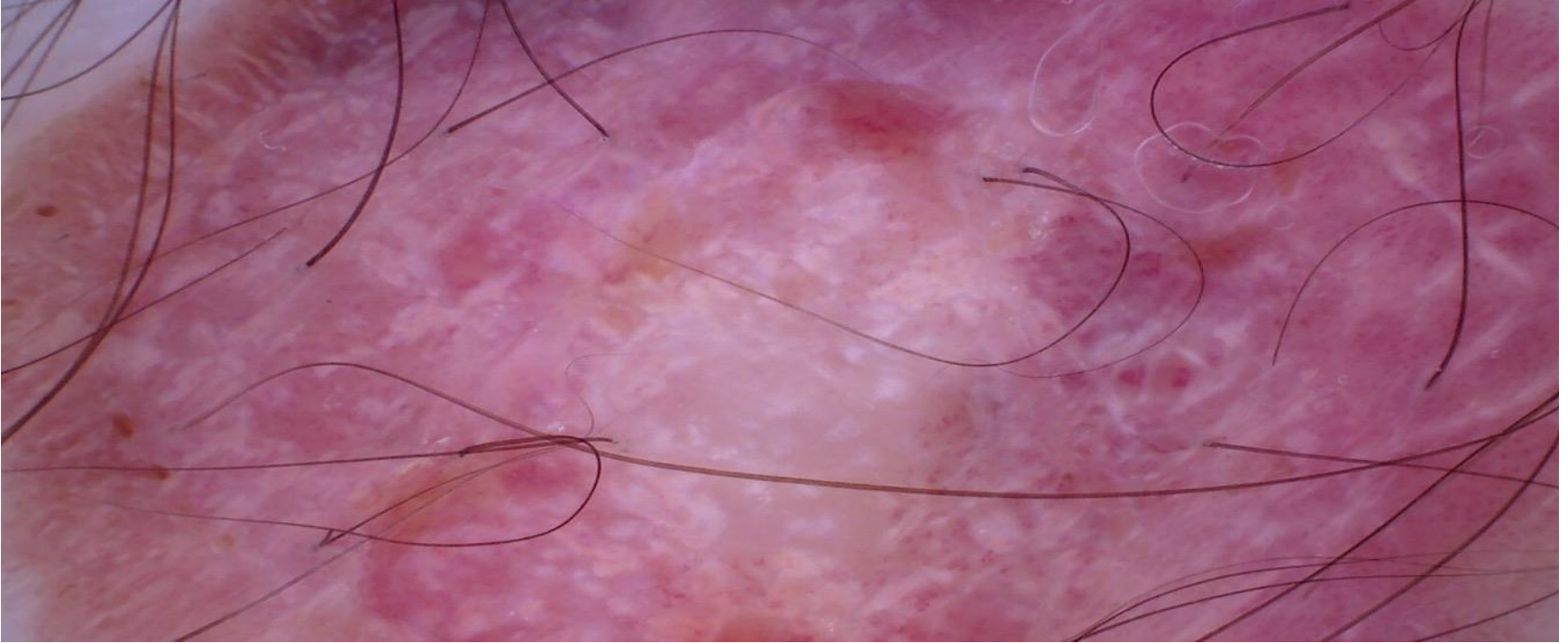


Polymorphous vessels



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

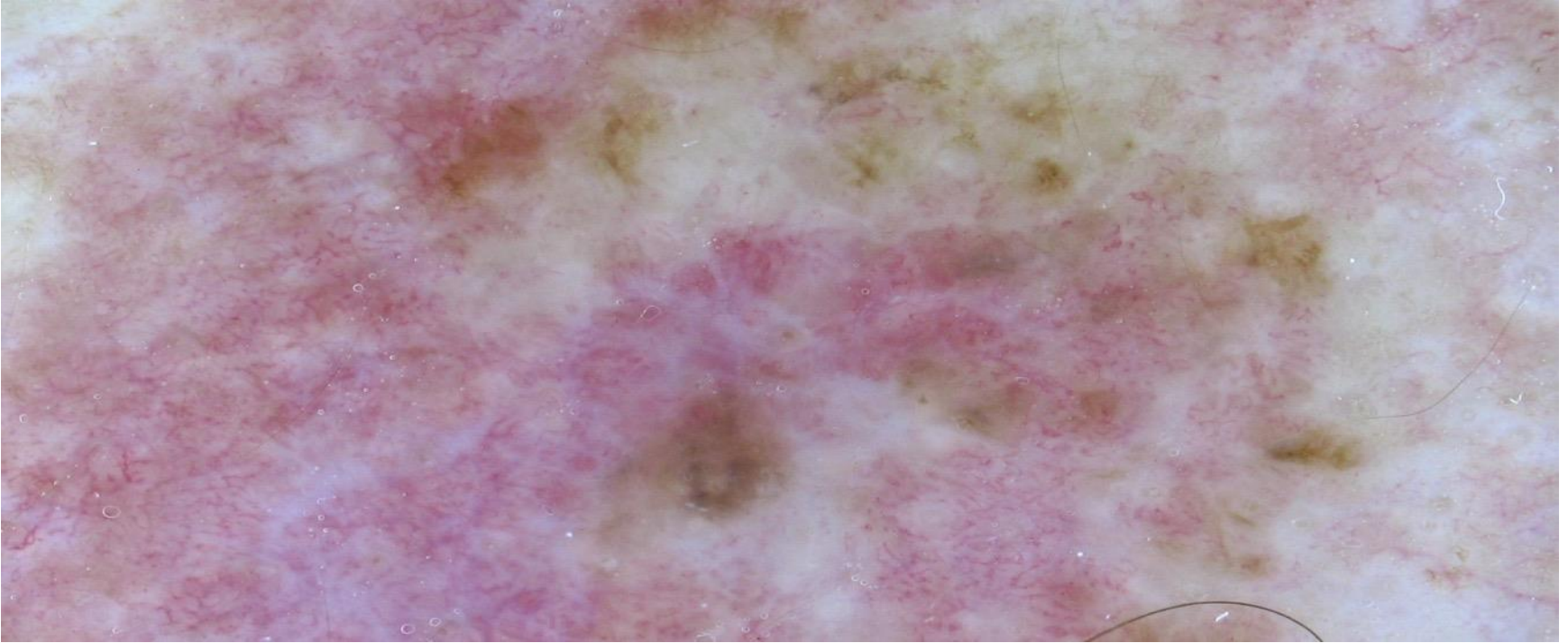
Polymorphous vessels



Polymorphous vessels



Polymorphous vessels

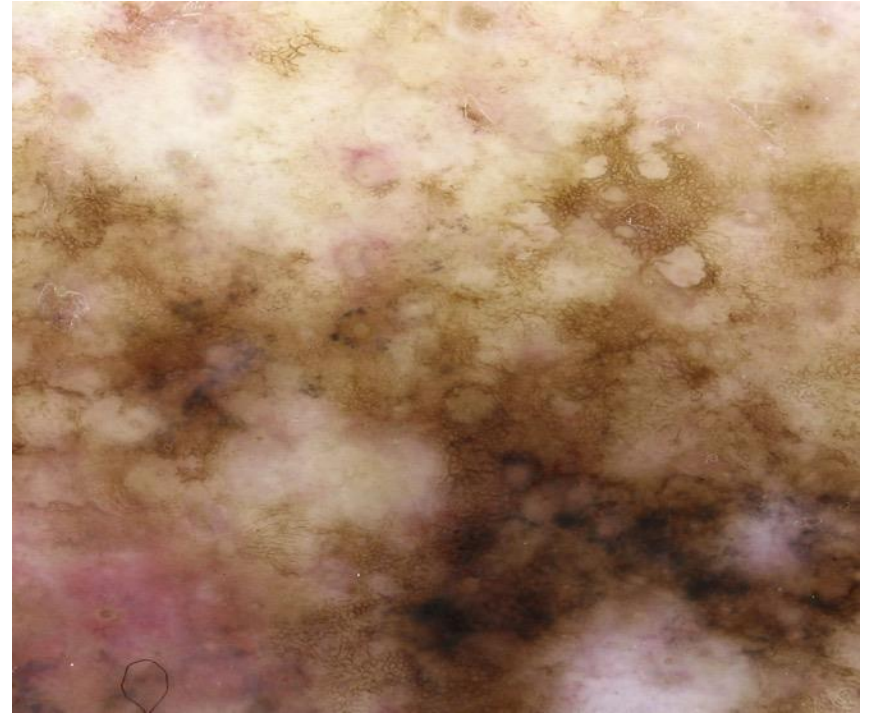


Parallel lines on the ridges (acral lesions only)



Large polygons

- Geometric shape with many sides
- Sharply angulated brown, grey or black lines
- Seen in lentiginous melanoma in severely sun damaged skin



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: N/A

Clues to pigmented BCC

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)~~
- ~~9. Large polygons~~

Pigmented basal cell carcinoma



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

Does this lesion show chaos?



Yes

No

Asymmetry of structure + colour



Yes

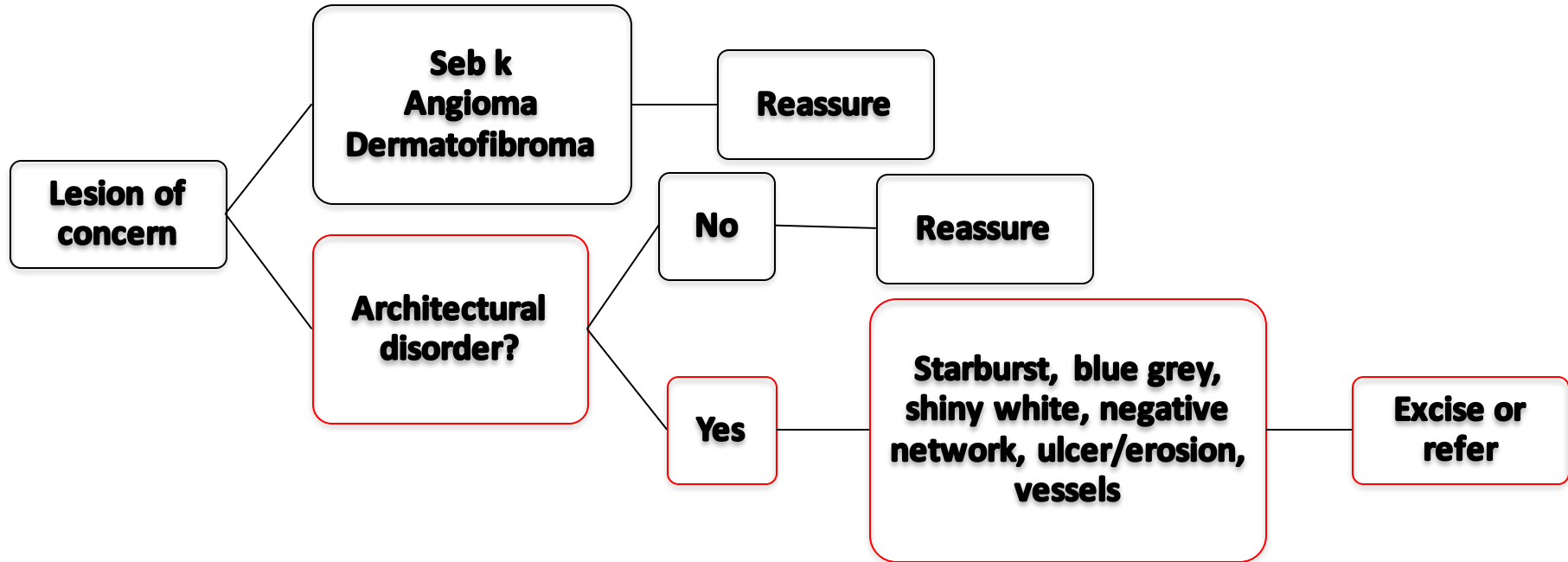
What are the clues?



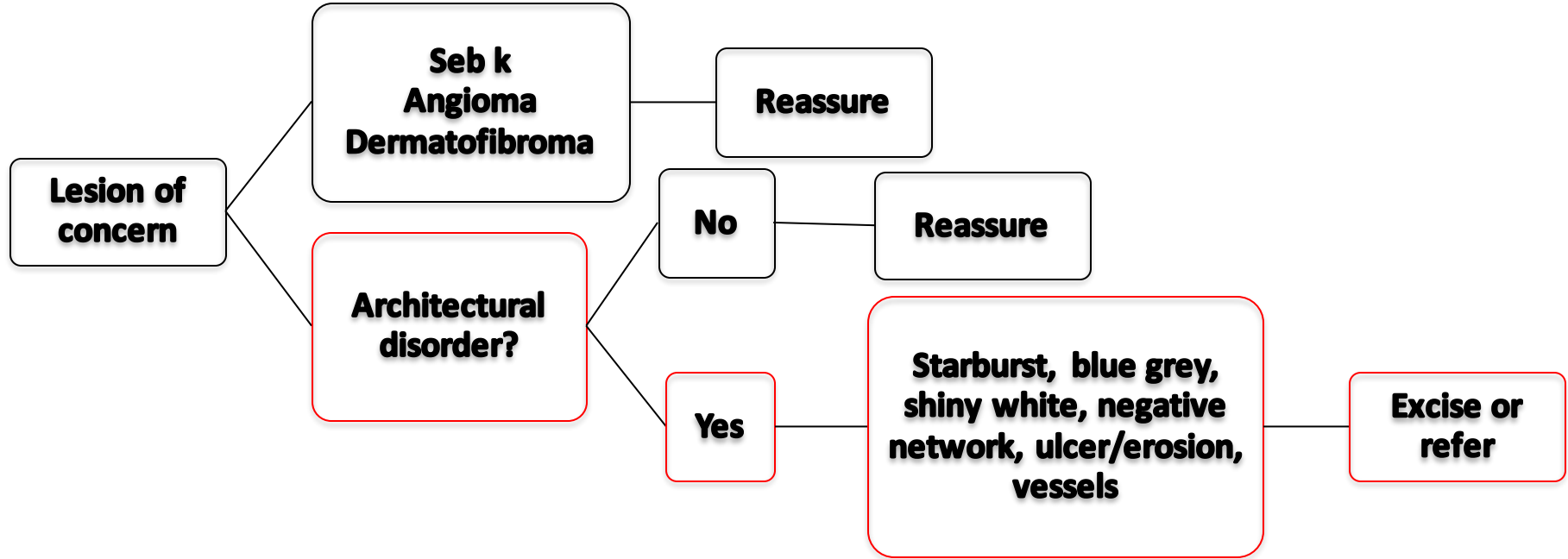
1. Eccentric structureless zones of any colour
2. Gray circles, lines, dots, clods
3. Black dots or clods at periphery
4. Focal pseudopods or radial lines at periphery
5. White lines
6. Thick reticular lines
7. Polymorphous vessels
8. Parallel lines on the ridges
9. Large polygons

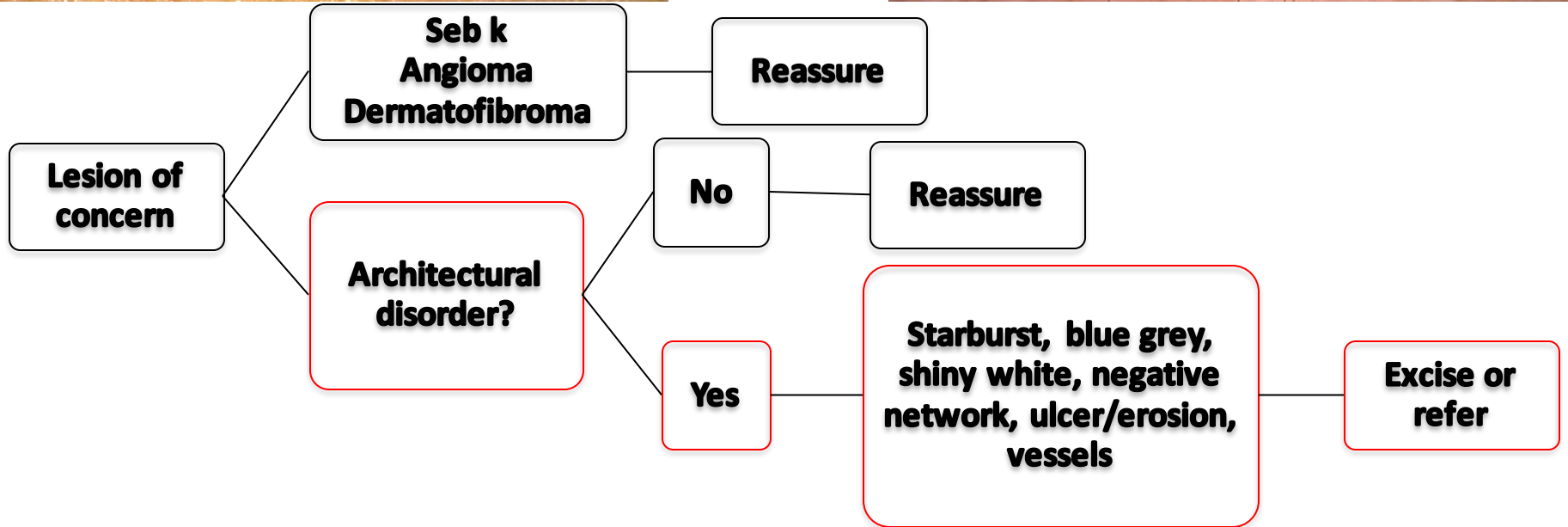
TADA

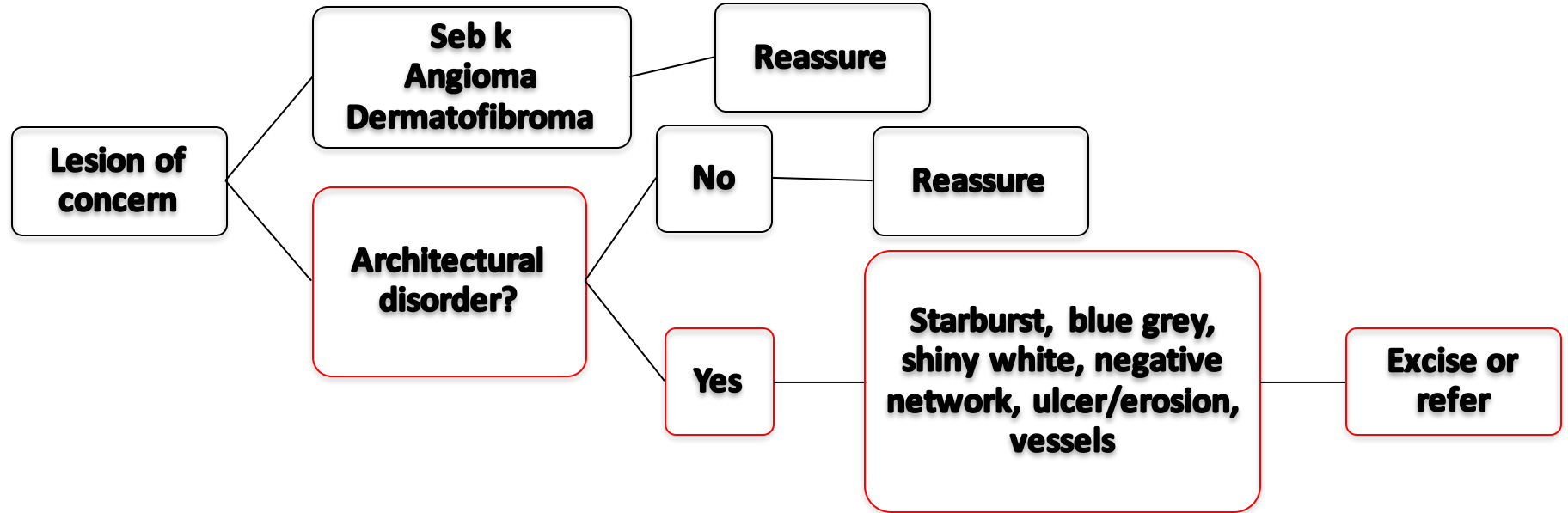
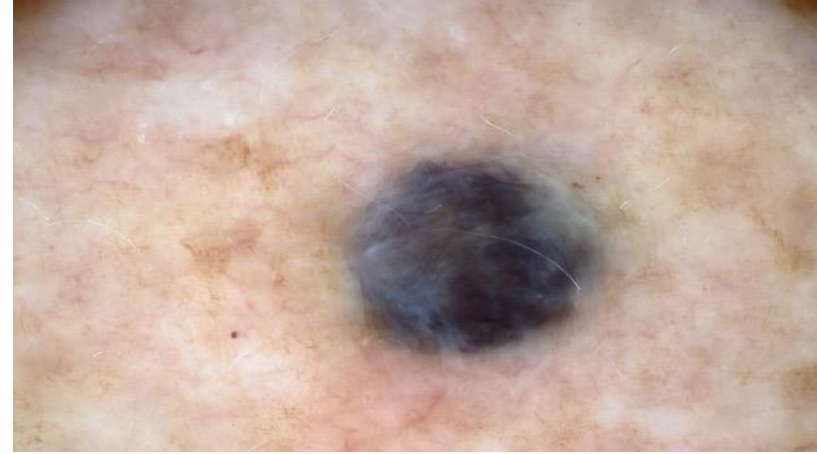
Triage amalgamated dermoscopic algorithm

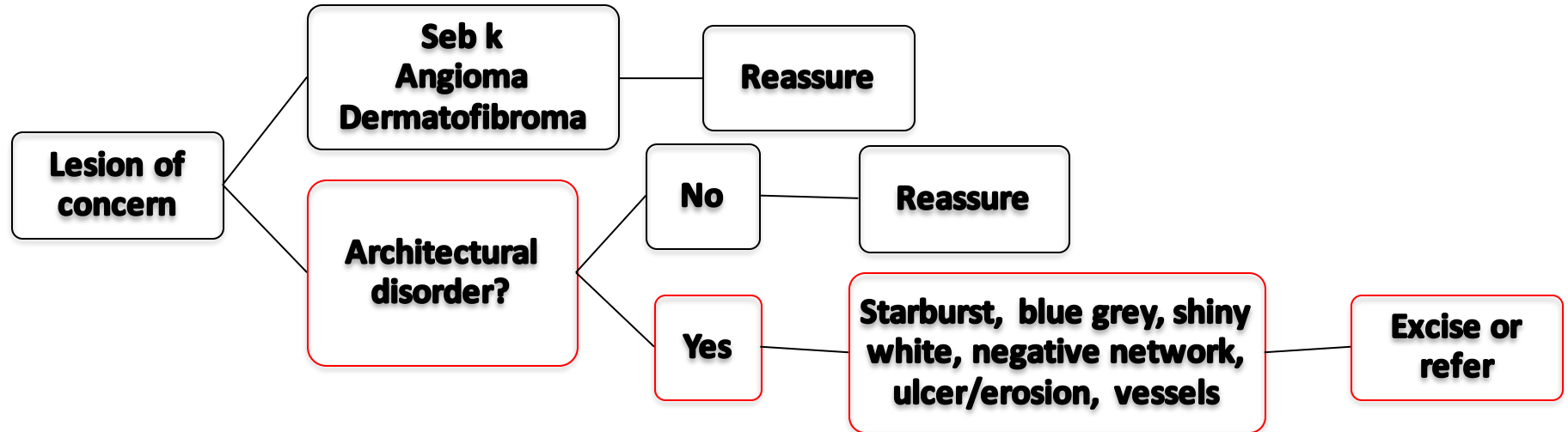
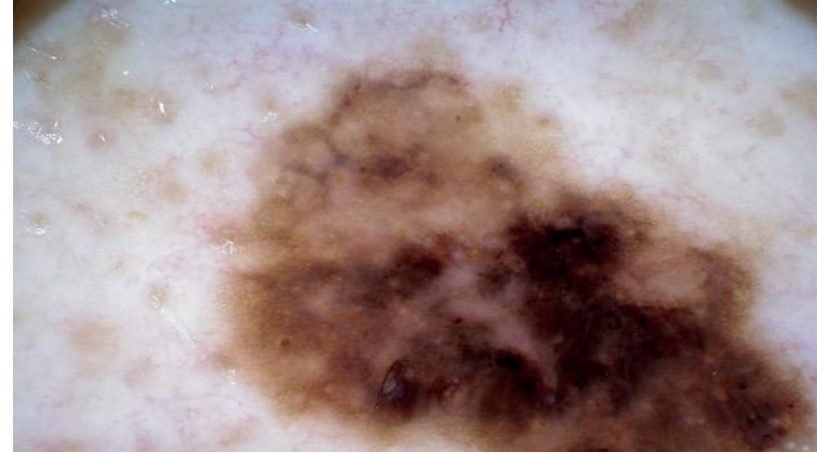


TADA





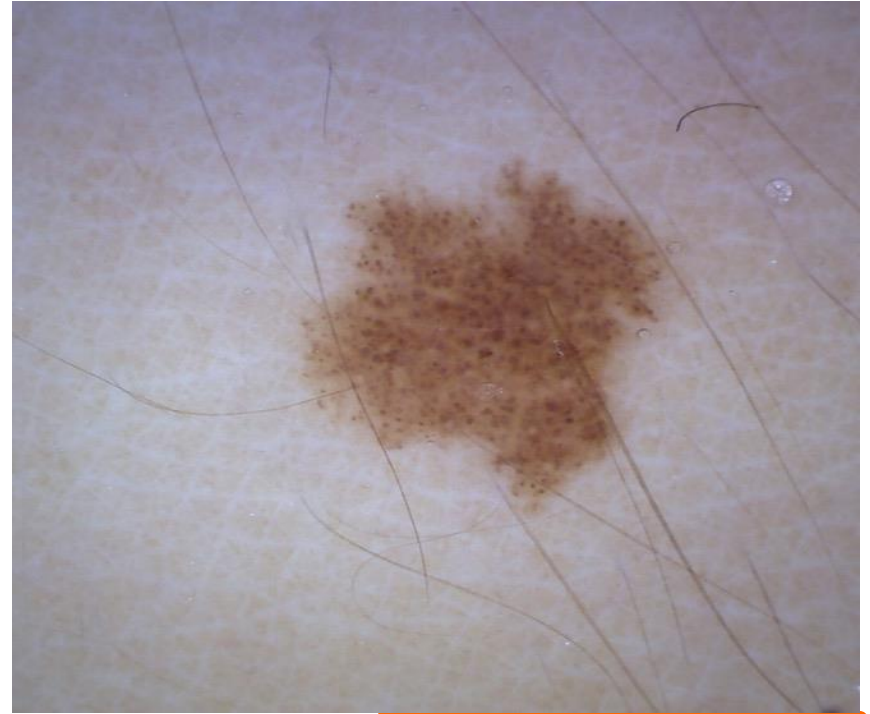




1. Leave it alone or cut it out?

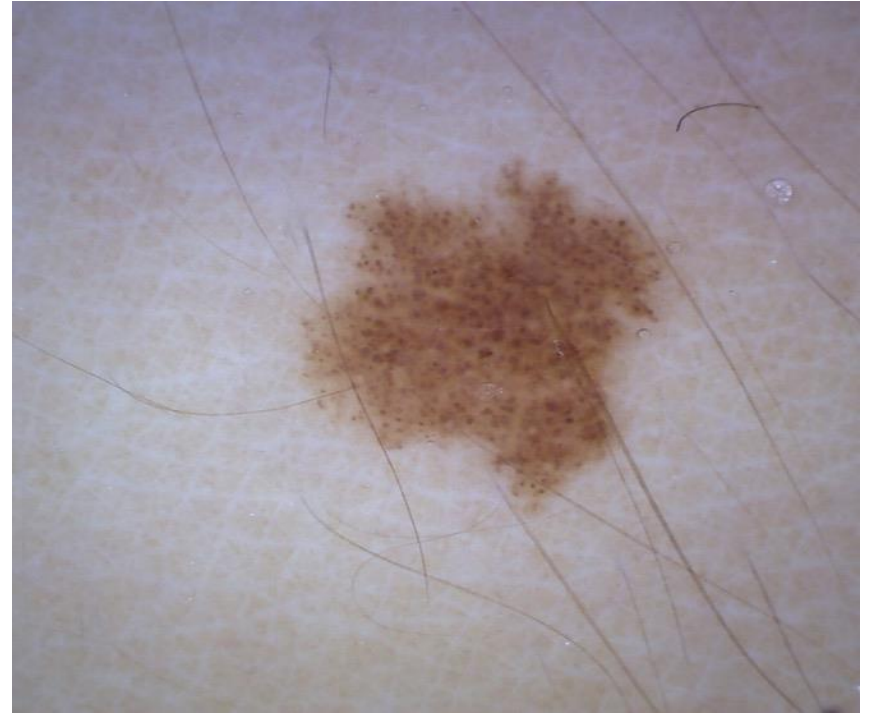


- Leave it alone



- Cut it out

1. Leave it alone or cut it out?

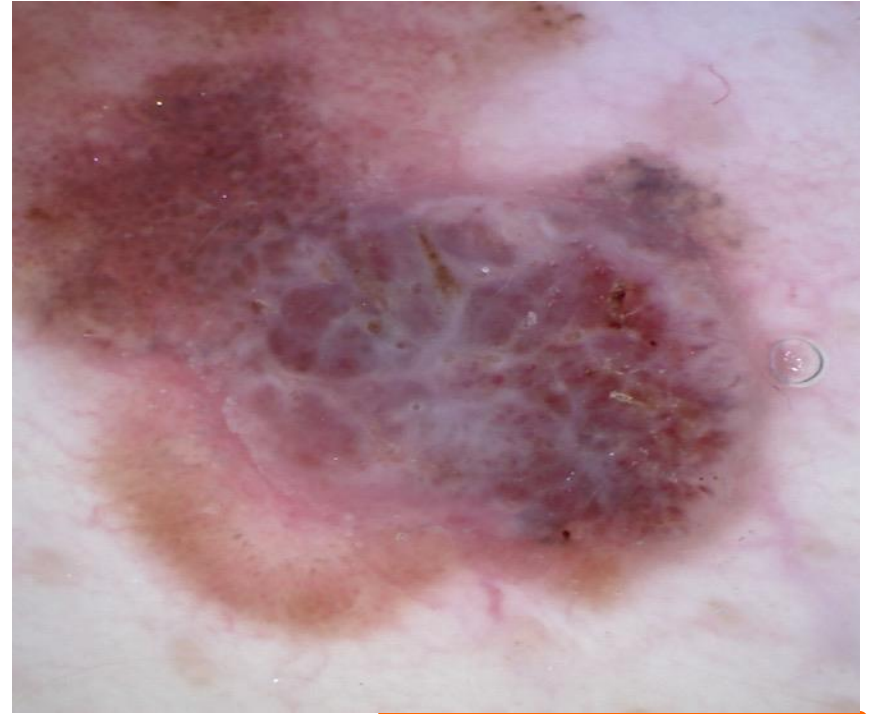


- Leave it alone

2. Leave it alone or cut it out?

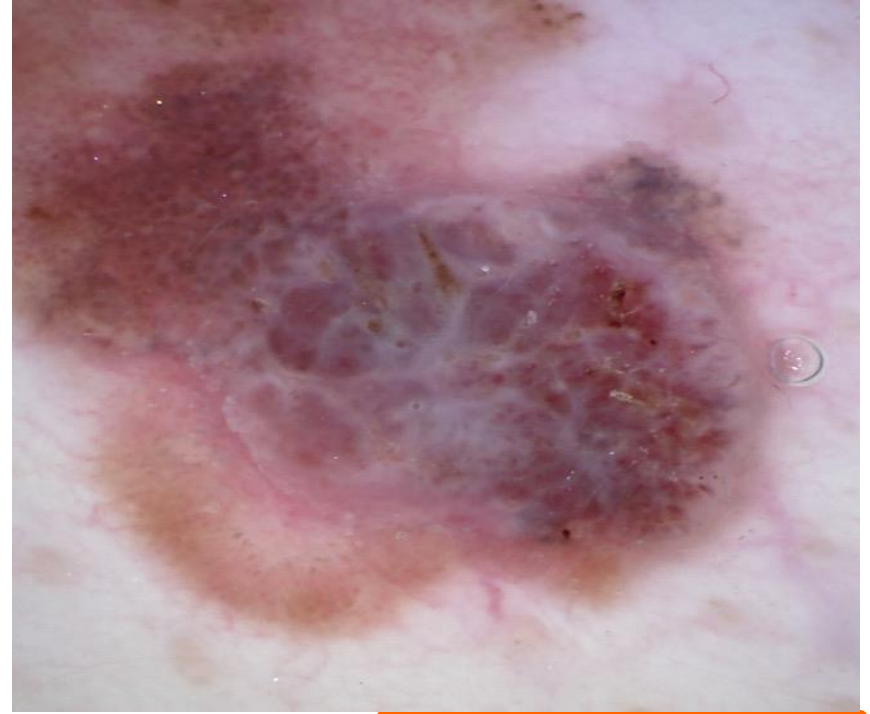


- Leave it alone



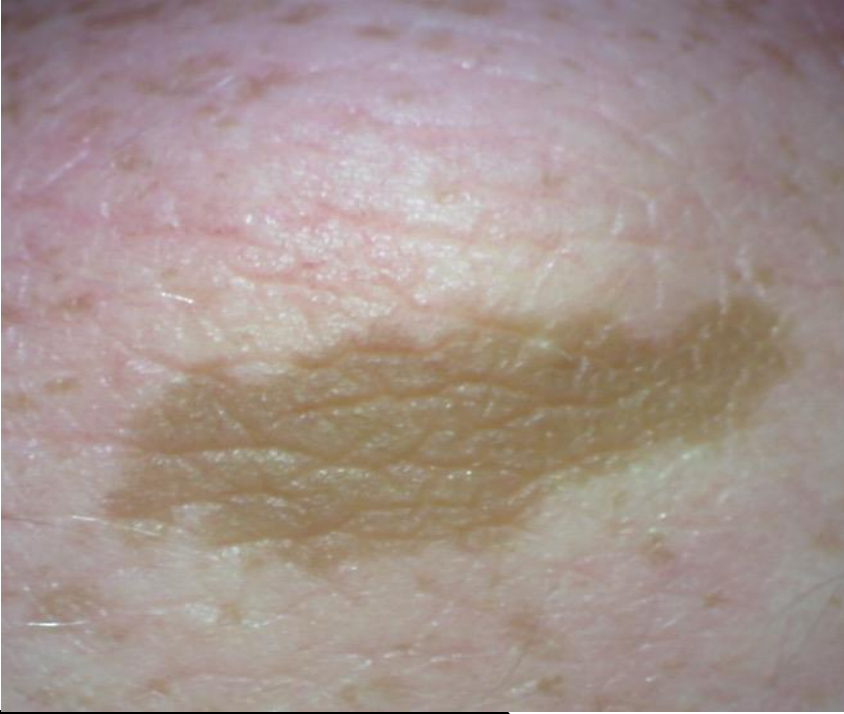
- Cut it out

2. Leave it alone or cut it out?



- Cut it out

3. Leave it alone or cut it out?

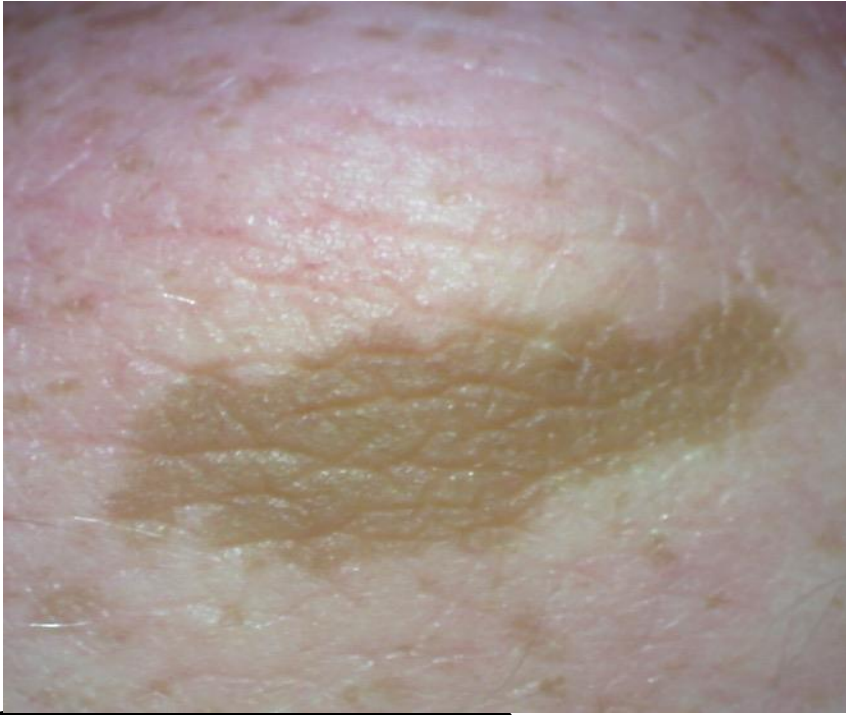


- Leave it alone



- Cut it out

3. Leave it alone or cut it out?



- Leave it alone

4. Leave it alone or cut it out?



- Leave it alone



- Cut it out

4. Leave it alone or cut it out?

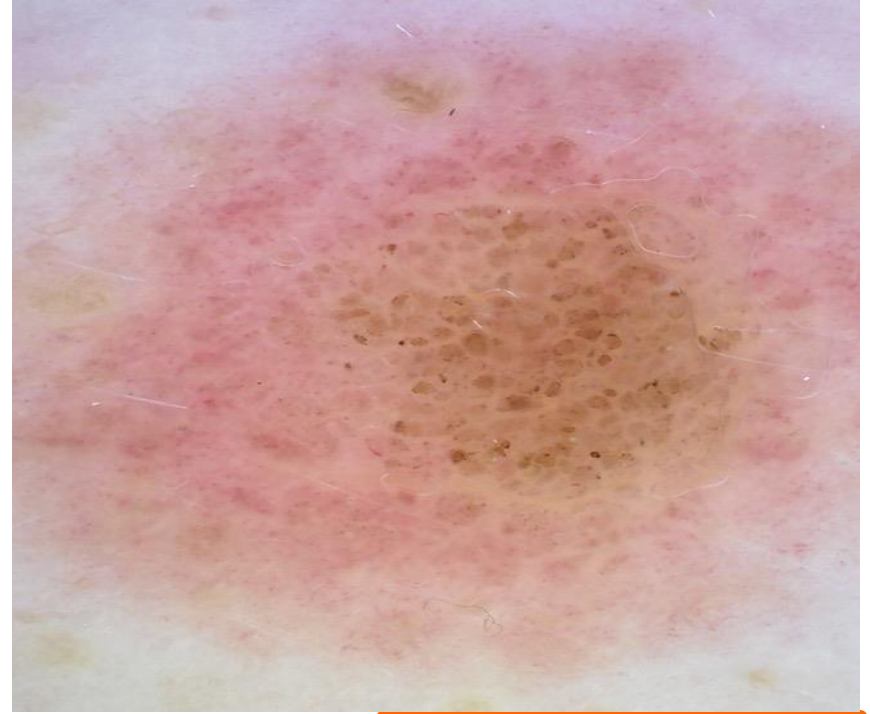


- Leave it alone

5. Leave it alone or cut it out?

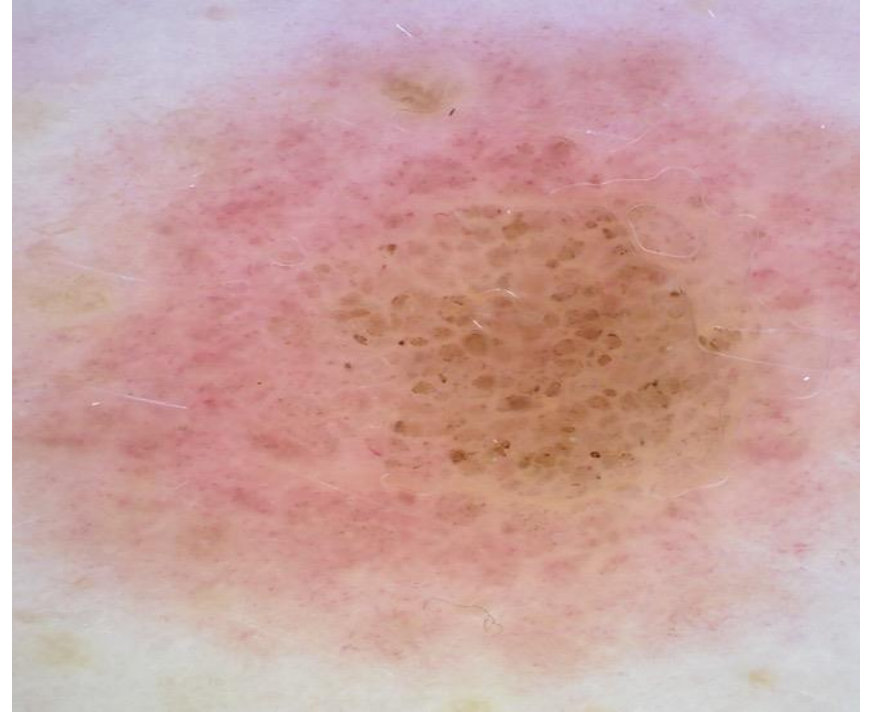


- Leave it alone



- Cut it out

5. Leave it alone or cut it out?

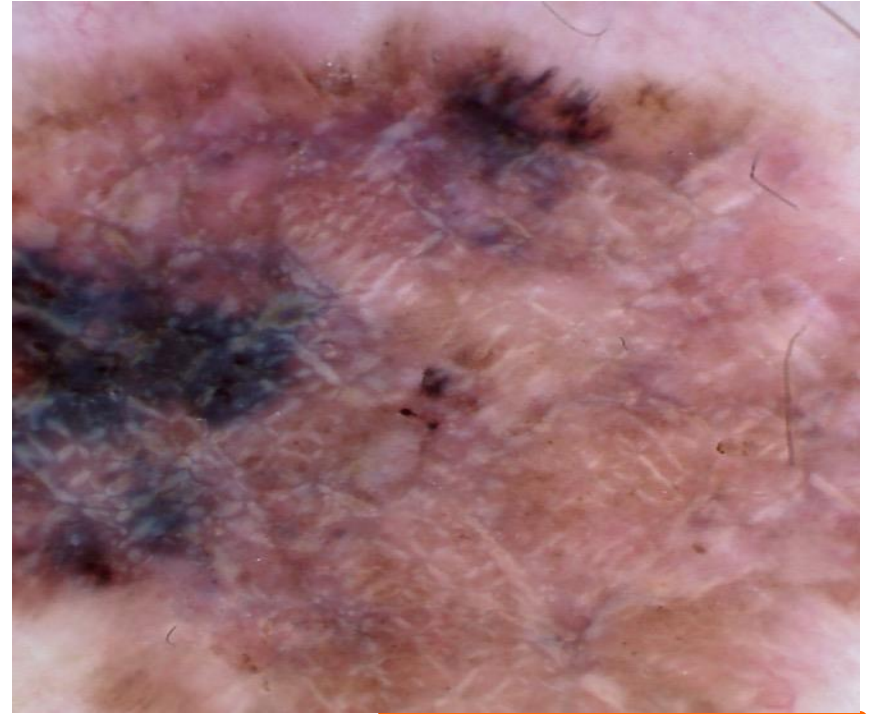


- Leave it alone

6. Leave it alone or cut it out?

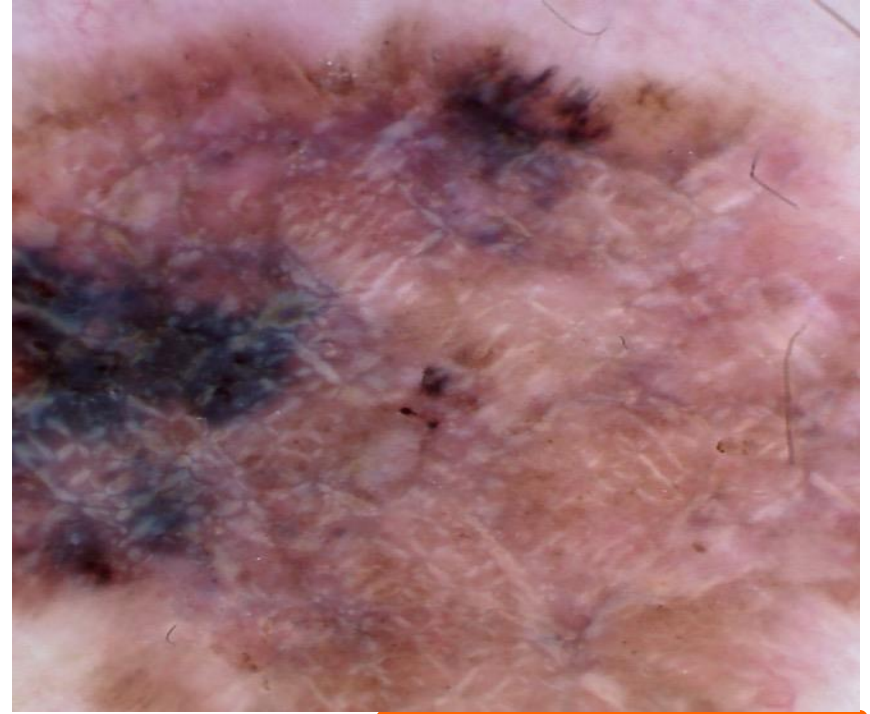


- Leave it alone



- Cut it out

6. Leave it alone or cut it out?



- Cut it out

7. Leave it alone or cut it out?



- Leave it alone



- Cut it out

7. Leave it alone or cut it out?



- Leave it alone

8. Leave it alone or cut it out?



- Leave it alone



- Cut it out

8. Leave it alone or cut it out?



- Leave it alone

9. Leave it alone or cut it out?



- Leave it alone



- Cut it out

9. Leave it alone or cut it out?



- Leave it alone

10. Leave it alone or cut it out?



- Leave it alone



- Cut it out

10. Leave it alone or cut it out?



- Leave it alone



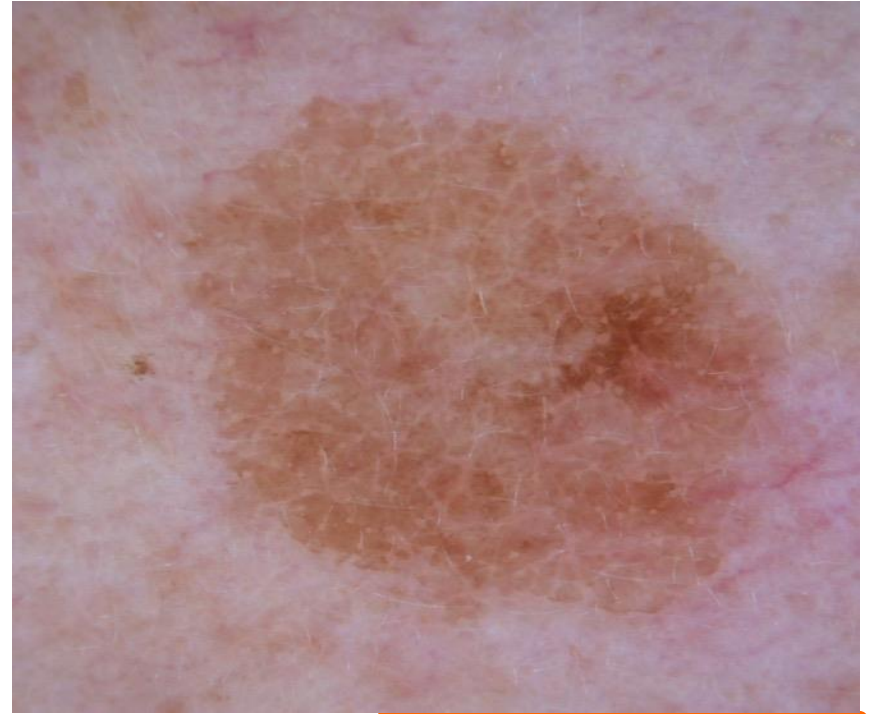
DEPENDS ON Pt AGE

- Cut it out

11. Leave it alone or cut it out?

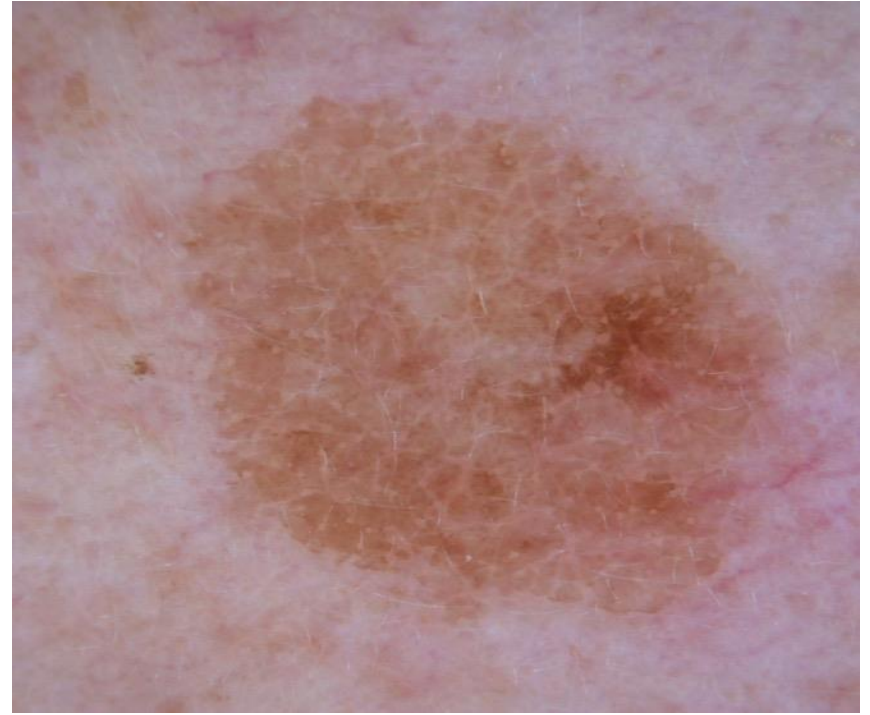


- Leave it alone



- Cut it out

11. Leave it alone or cut it out?

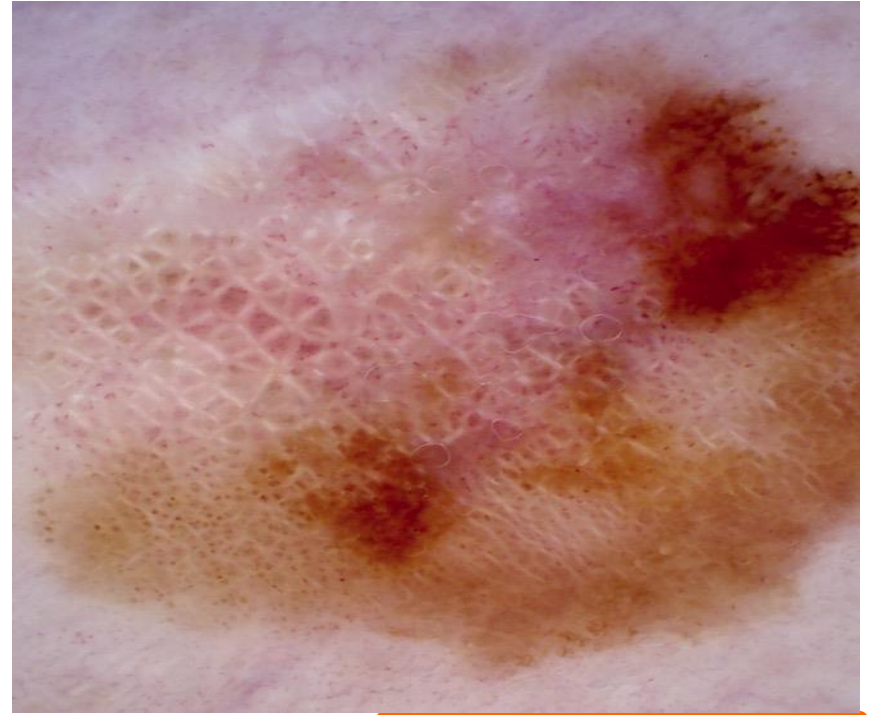


- Leave it alone

12. Leave it alone or cut it out?

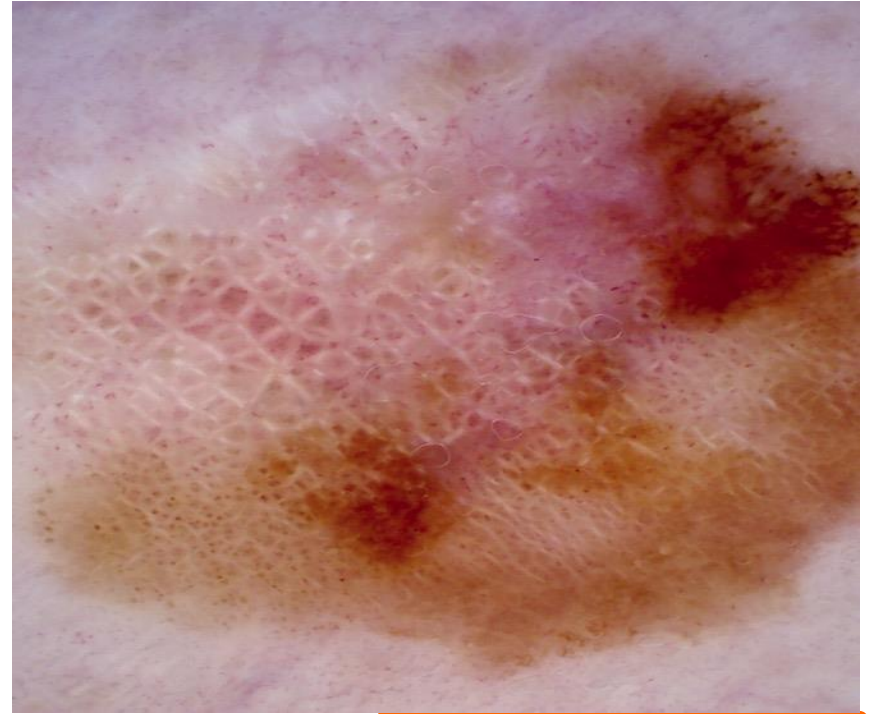


- Leave it alone



- Cut it out

12. Leave it alone or cut it out?



- Cut it out

13. Leave it alone or cut it out?



- Leave it alone



- Cut it out

13. Leave it alone or cut it out?



- Leave it alone

14. Leave it alone or cut it out?



- Leave it alone



- Cut it out

14. Leave it alone or cut it out?



- Leave it alone

15. Leave it alone or cut it out?



- Leave it alone



- Cut it out

15. Leave it alone or cut it out?

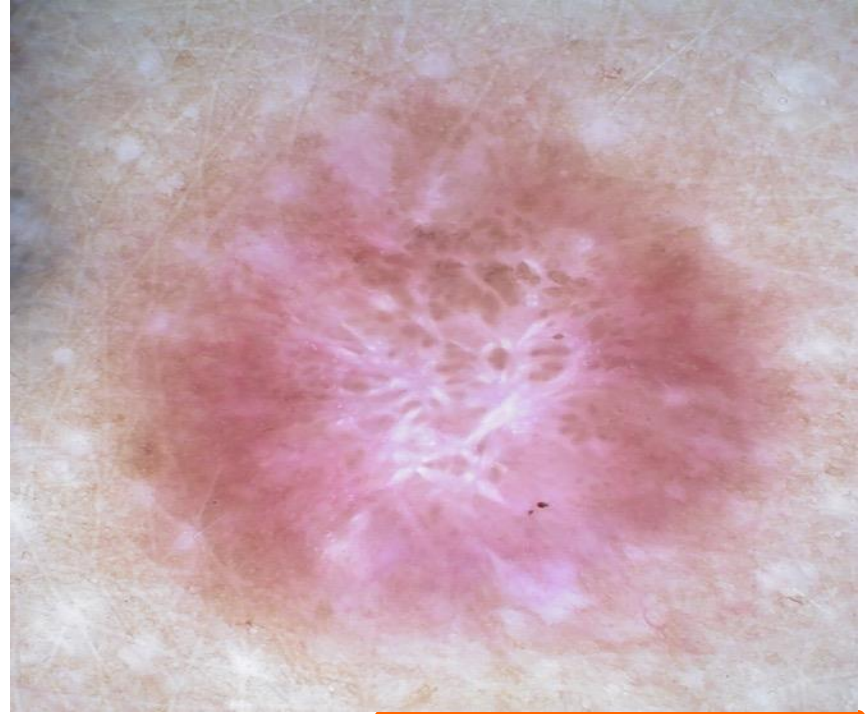


- Leave it alone

16. Leave it alone or cut it out?

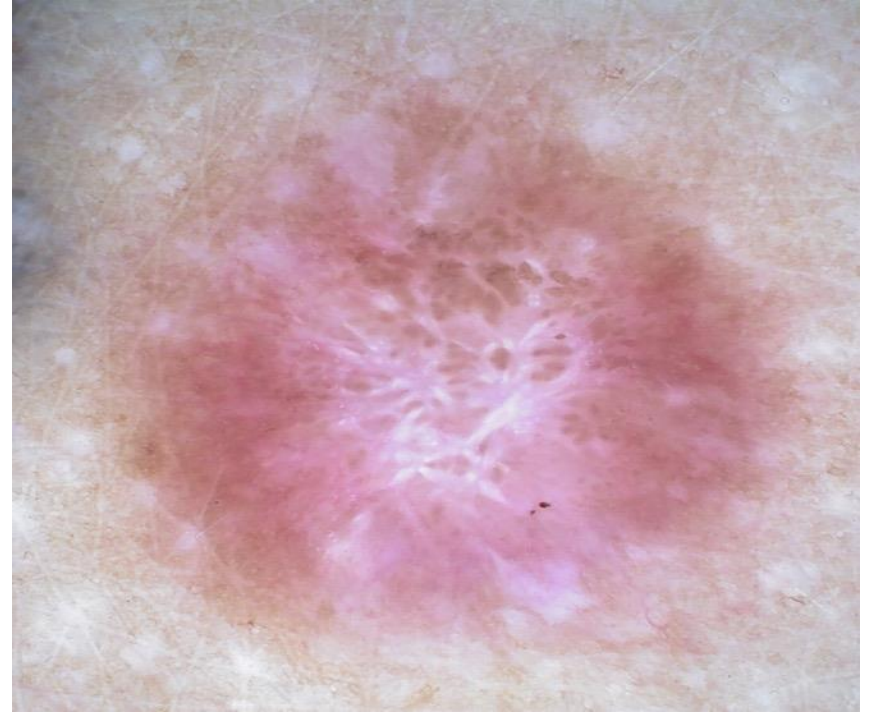


- Leave it alone



- Cut it out

16. Leave it alone or cut it out?

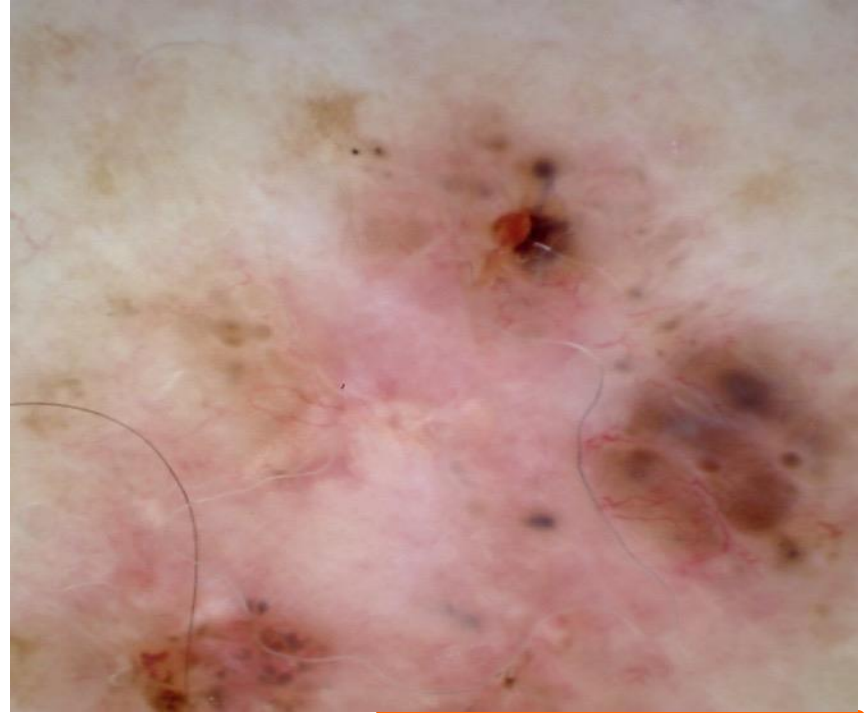


- Leave it alone

17. Leave it alone or cut it out?

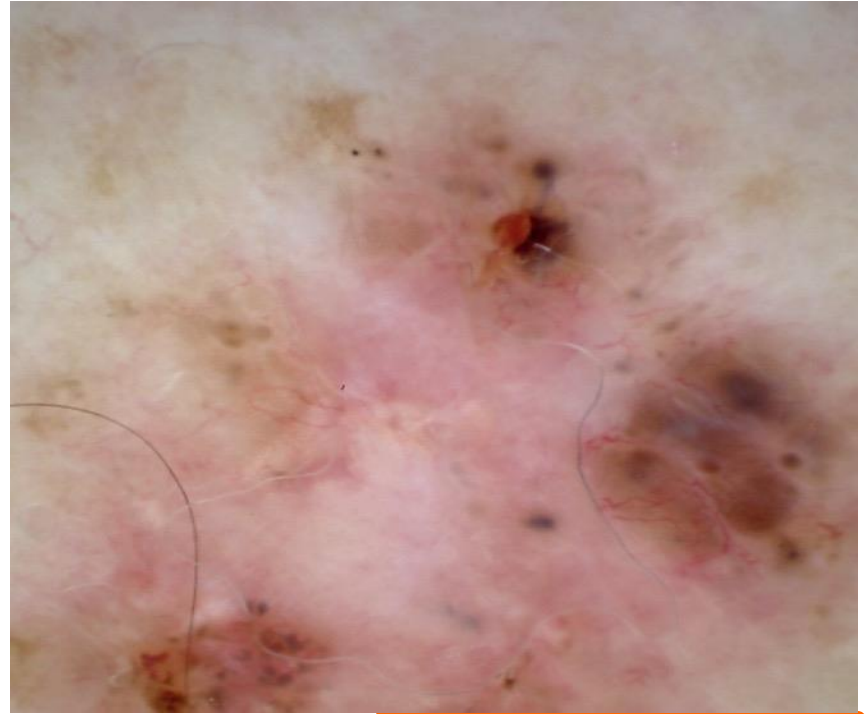


- Leave it alone



- Cut it out

17. Leave it alone or cut it out?

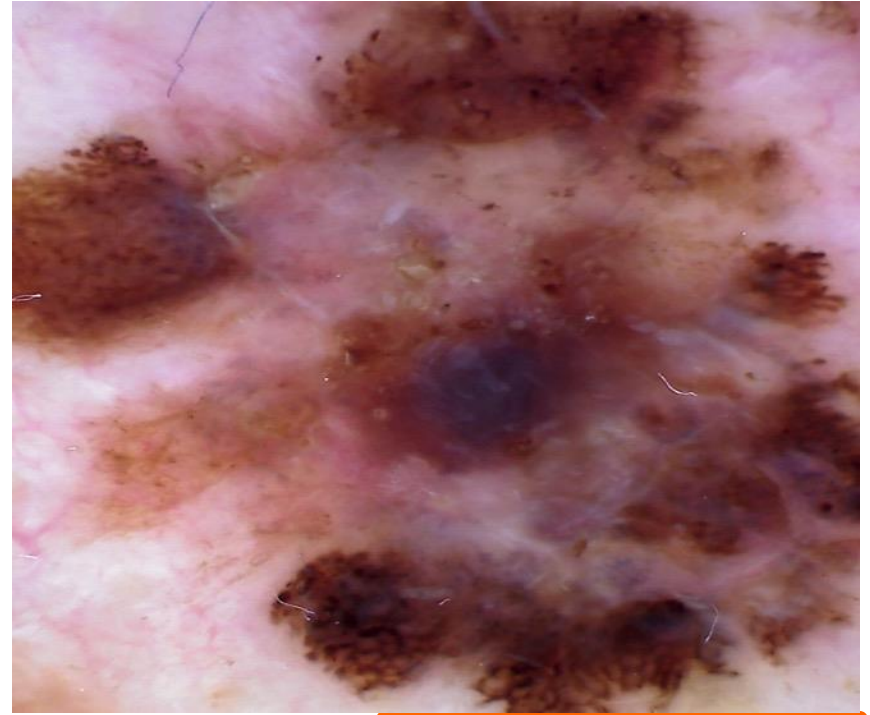


- Cut it out

18. Leave it alone or cut it out?

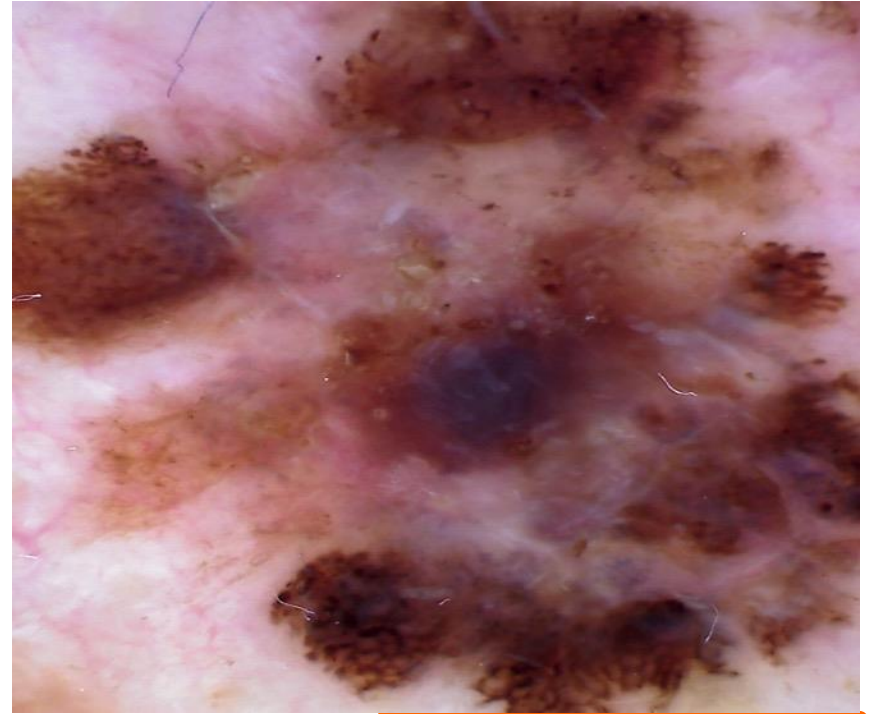


- Leave it alone



- Cut it out

18. Leave it alone or cut it out?

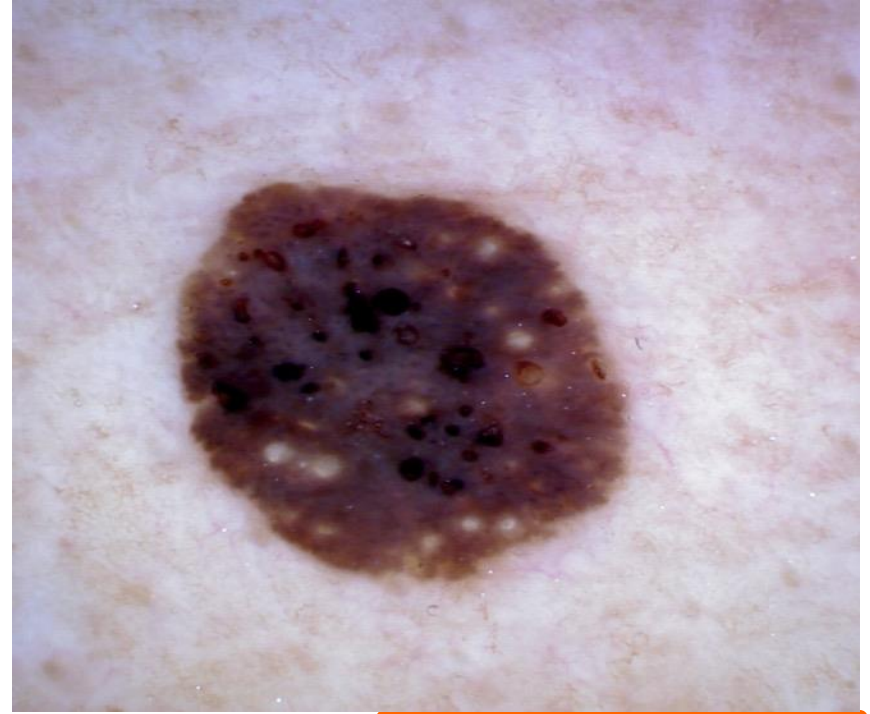


- Cut it out

19. Leave it alone or cut it out?

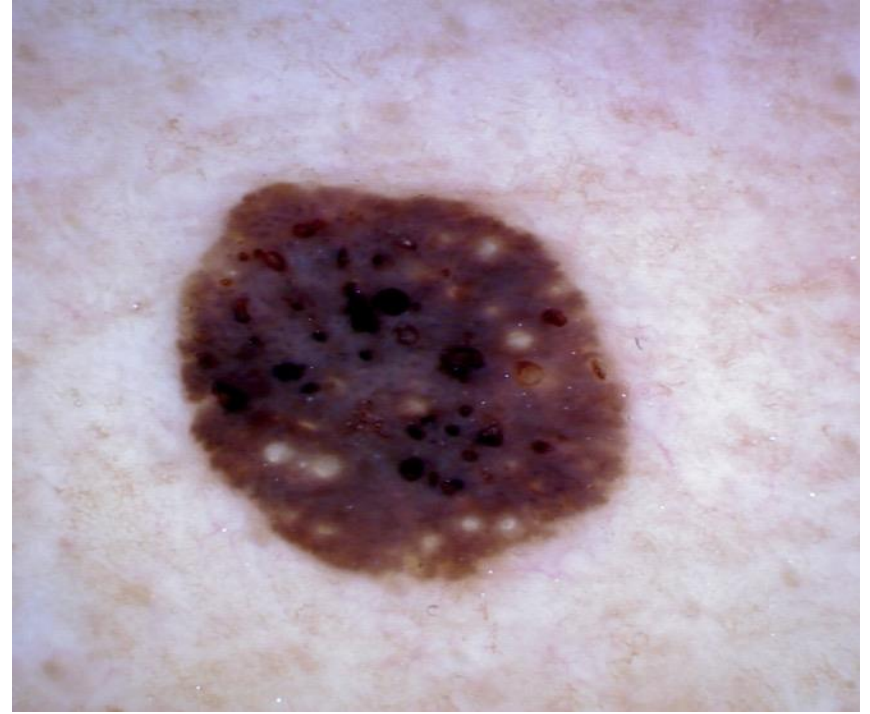


- Leave it alone



- Cut it out

19. Leave it alone or cut it out?



- Leave it alone

20. Leave it alone or cut it out?

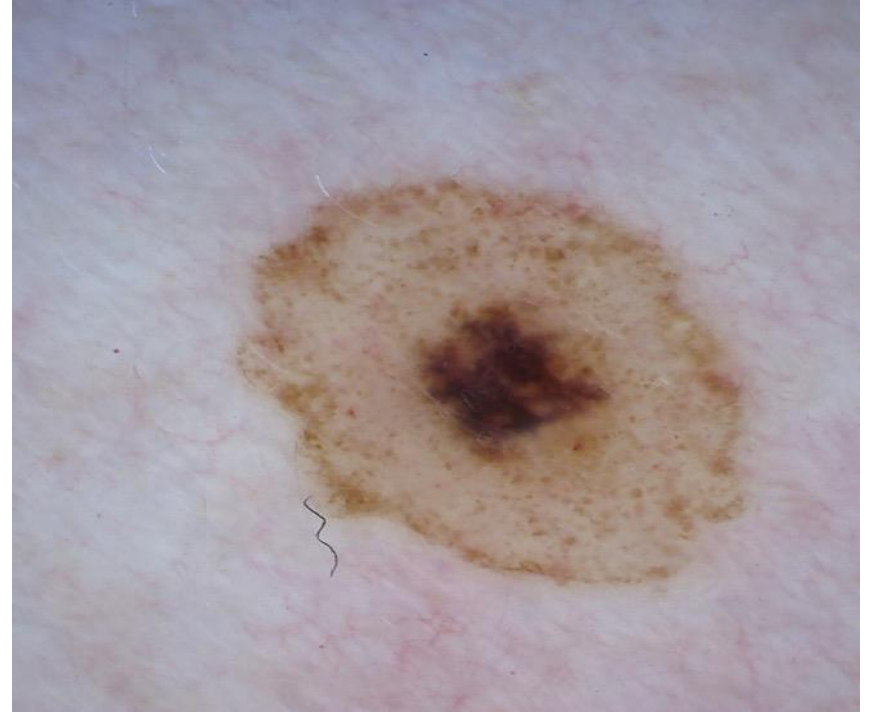


- Leave it alone



- Cut it out

20. Leave it alone or cut it out?



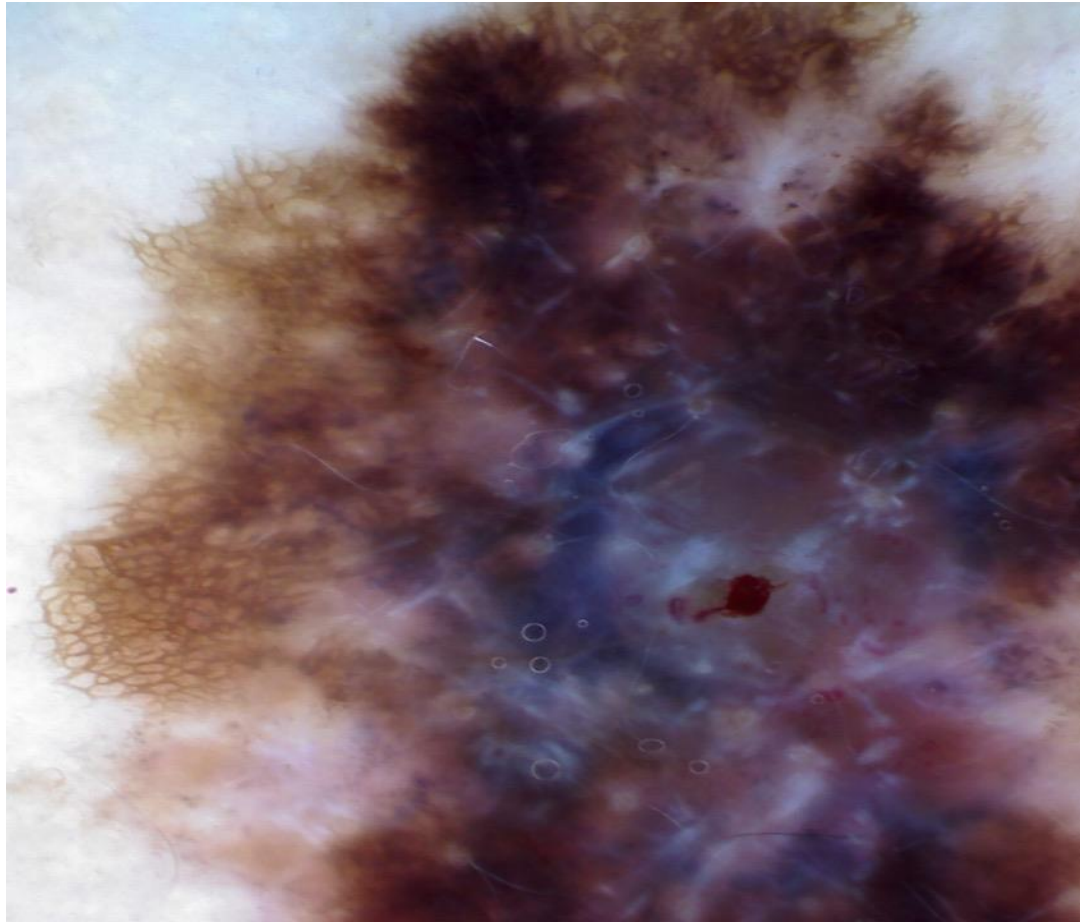
- Leave it alone

TEST REVIEW

Lesion 1

Benign or Malignant?

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



Lesion 1

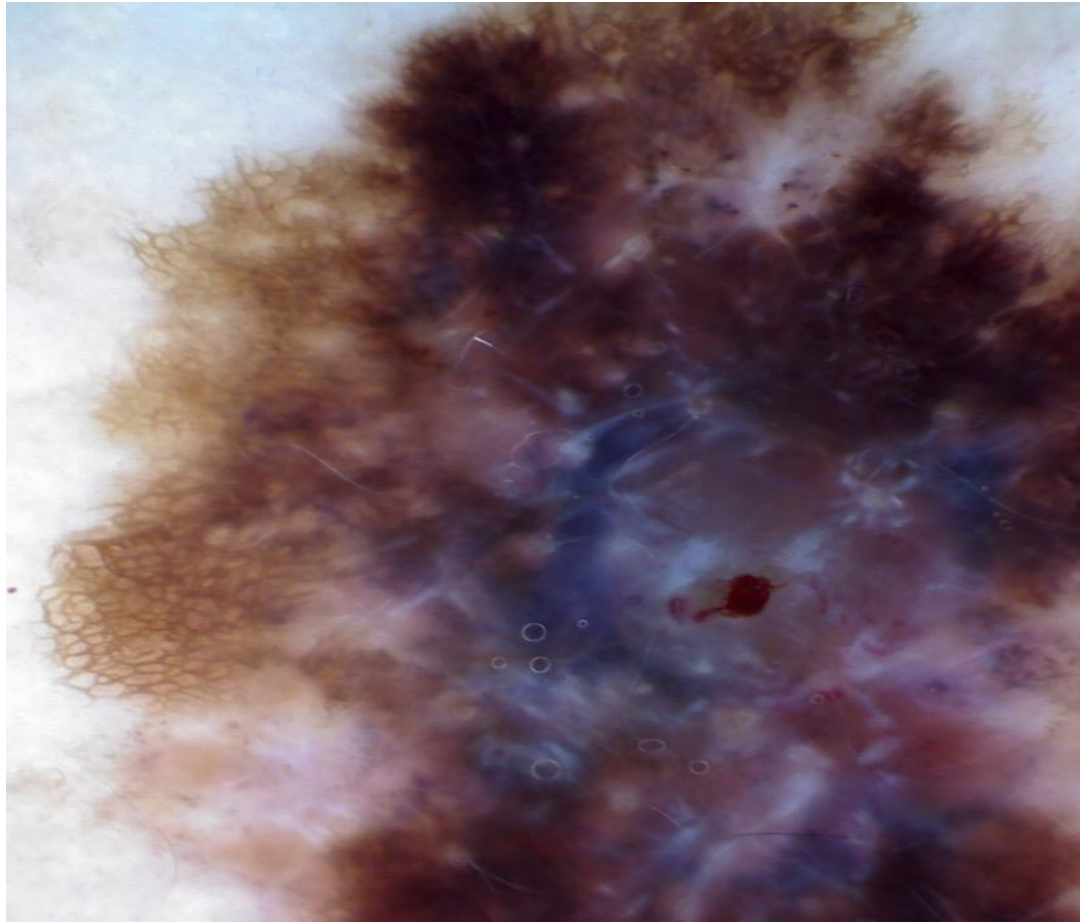
Benign or Malignant?

a) Melanocytic naevus?

b) Melanoma

c) Seborrhoeic keratosis?

d) cell carcinoma?



Lesion 2

Benign or Malignant?

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



Lesion 2

Benign or Malignant?

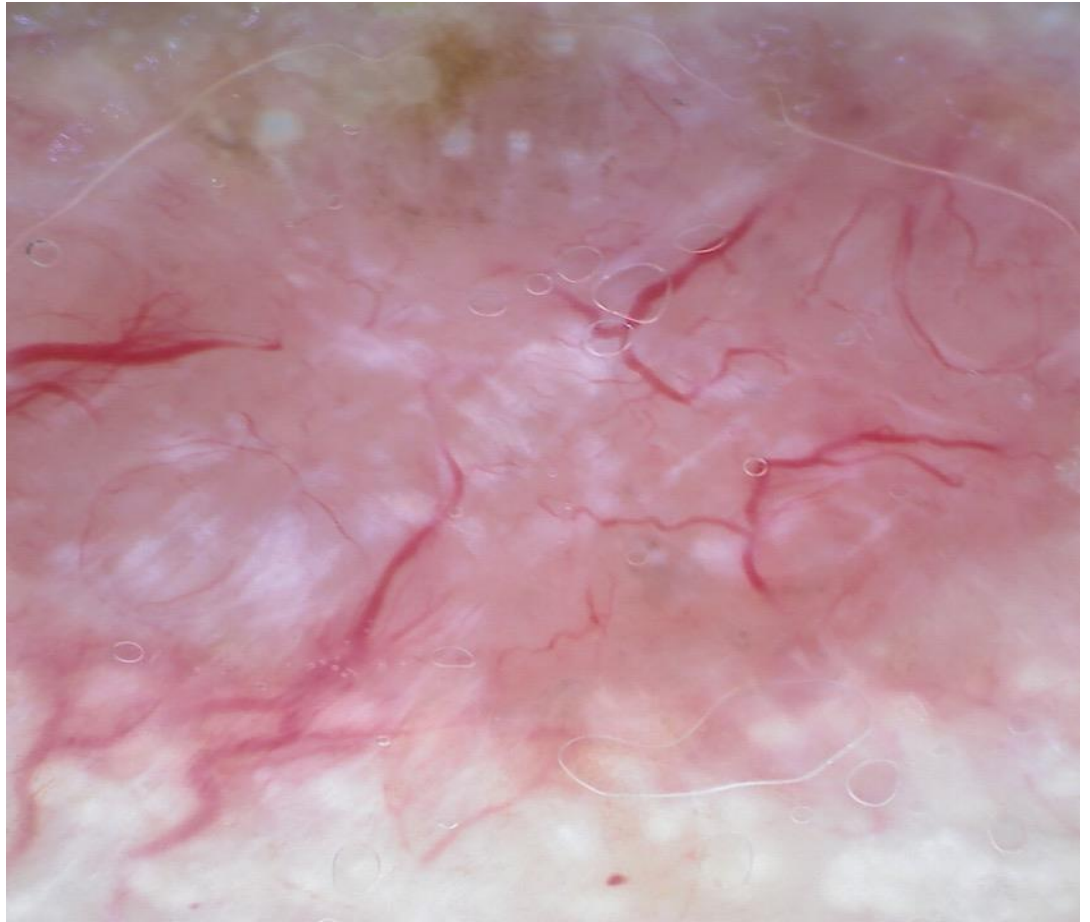
- a) Melanocytic naevus
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 3

Benign or Malignant?

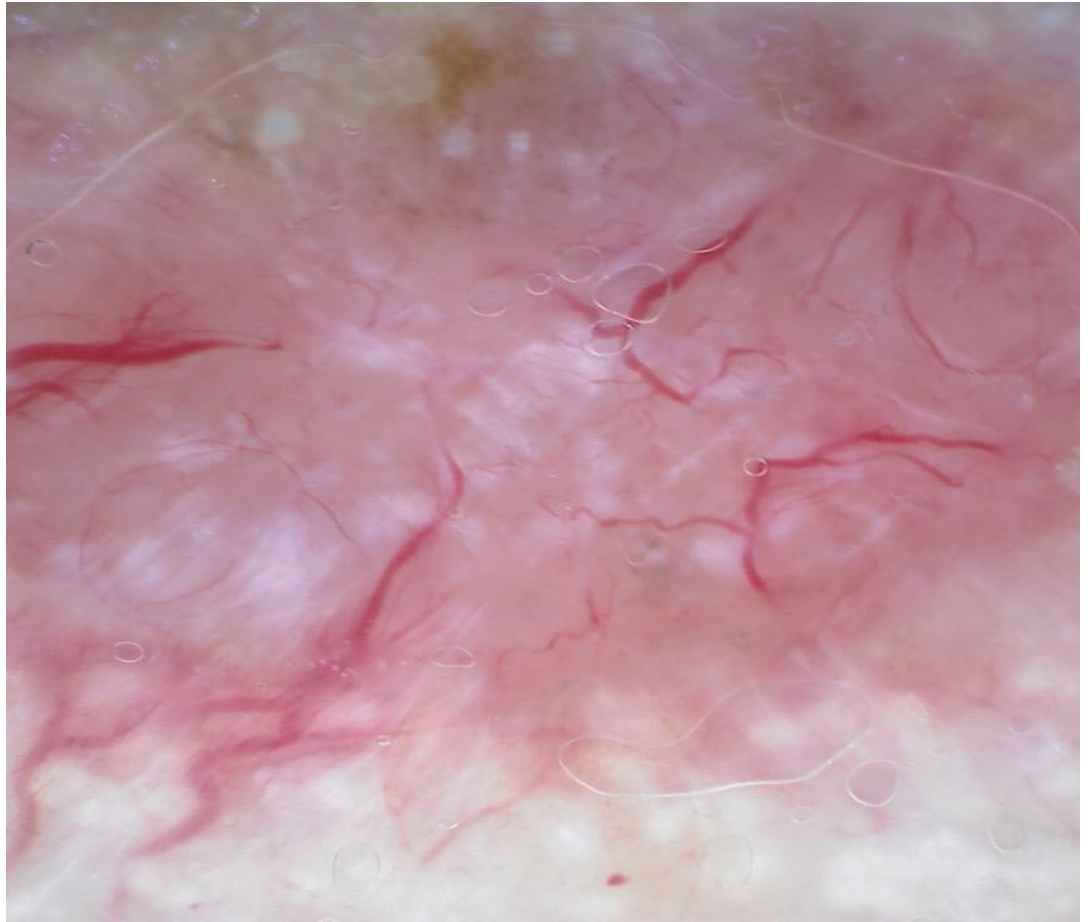
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



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?



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?

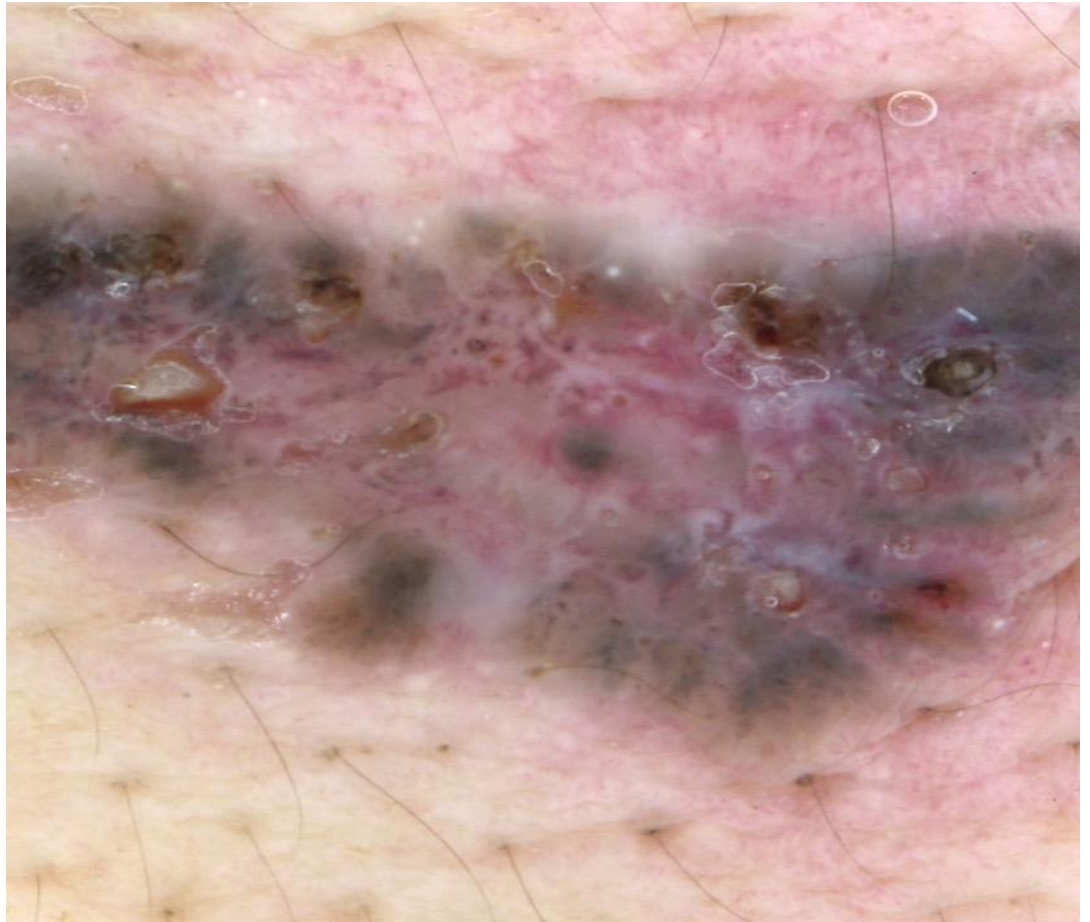
d) Basal cell
carcinoma?



Lesion 6

Benign or Malignant?

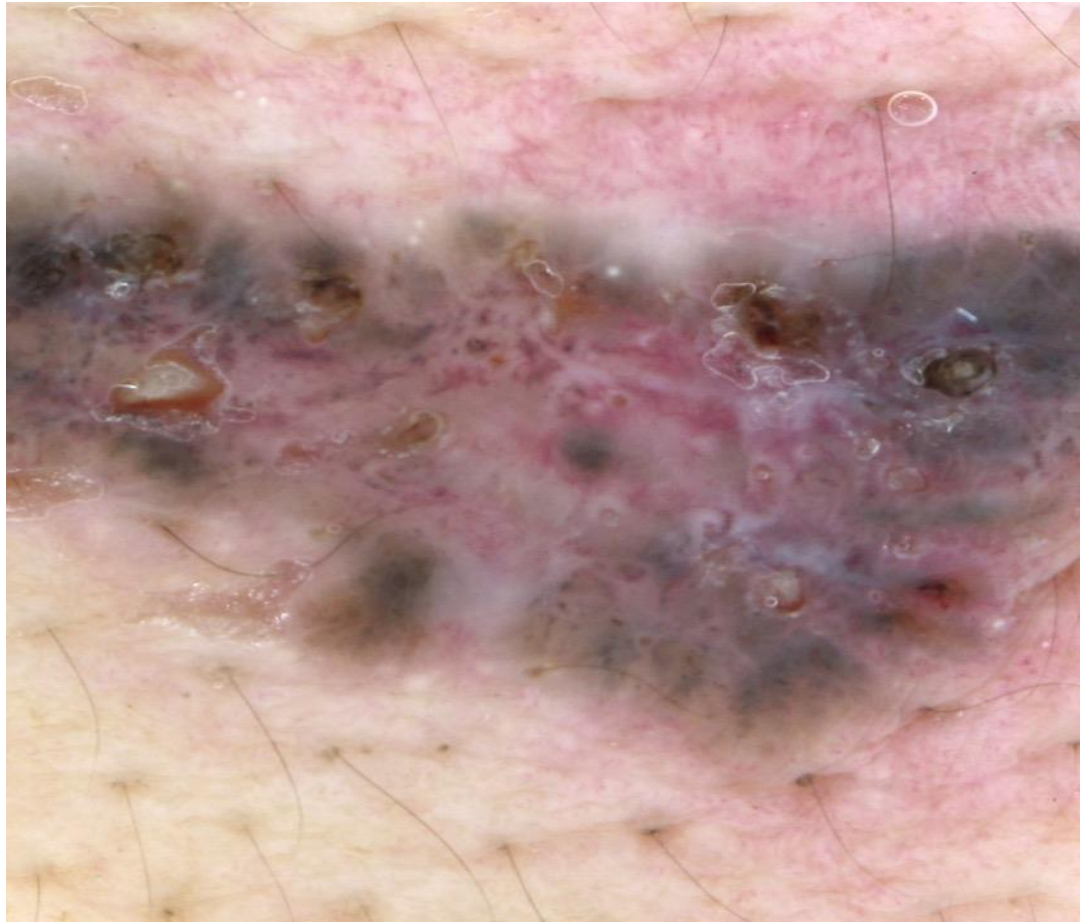
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



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?

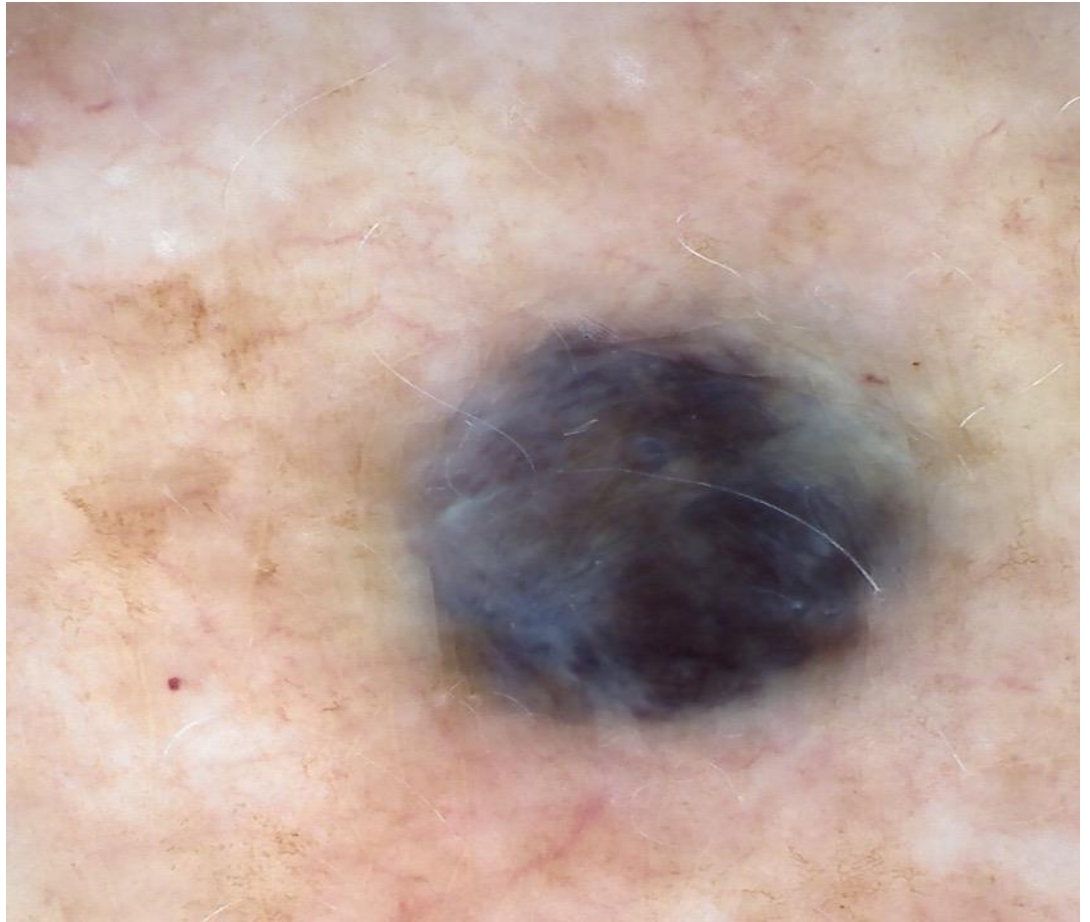
- a) Melanocytic naevus
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 8

Benign or Malignant?

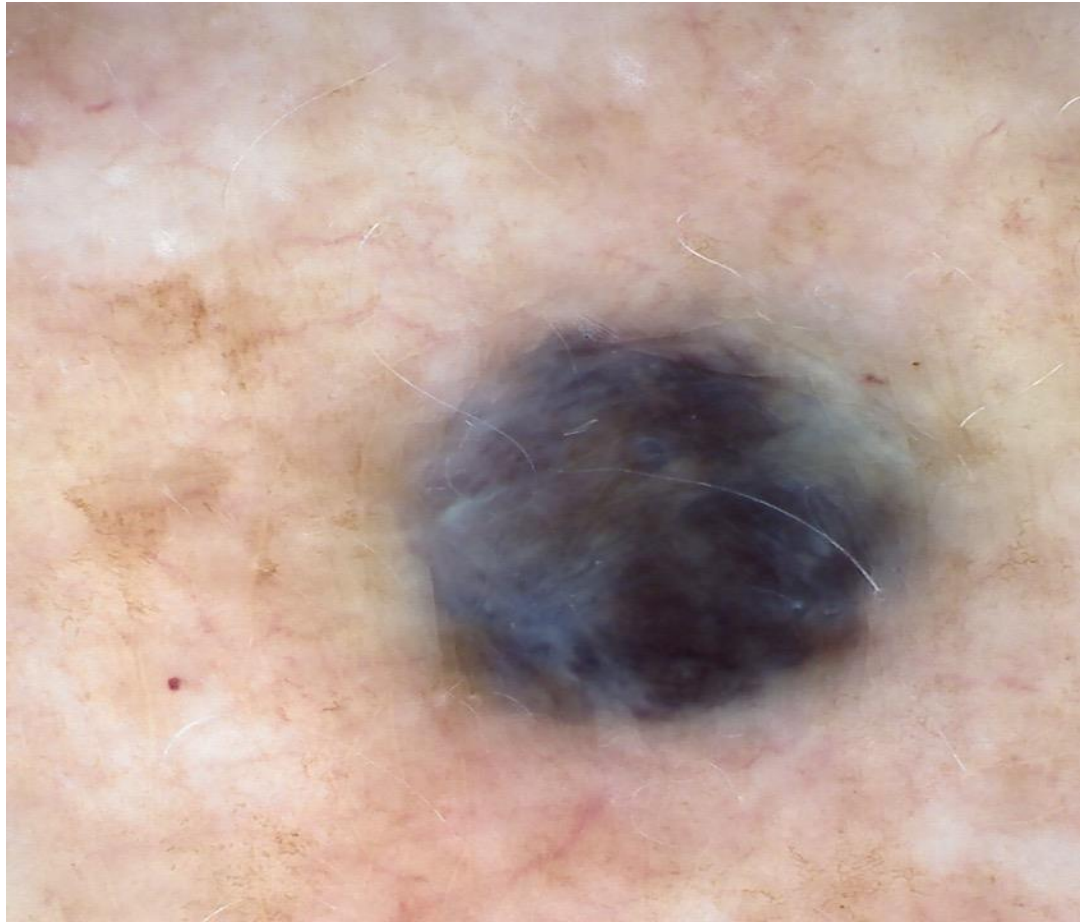
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 8

Benign or Malignant?

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



Lesion 9

Benign or Malignant?

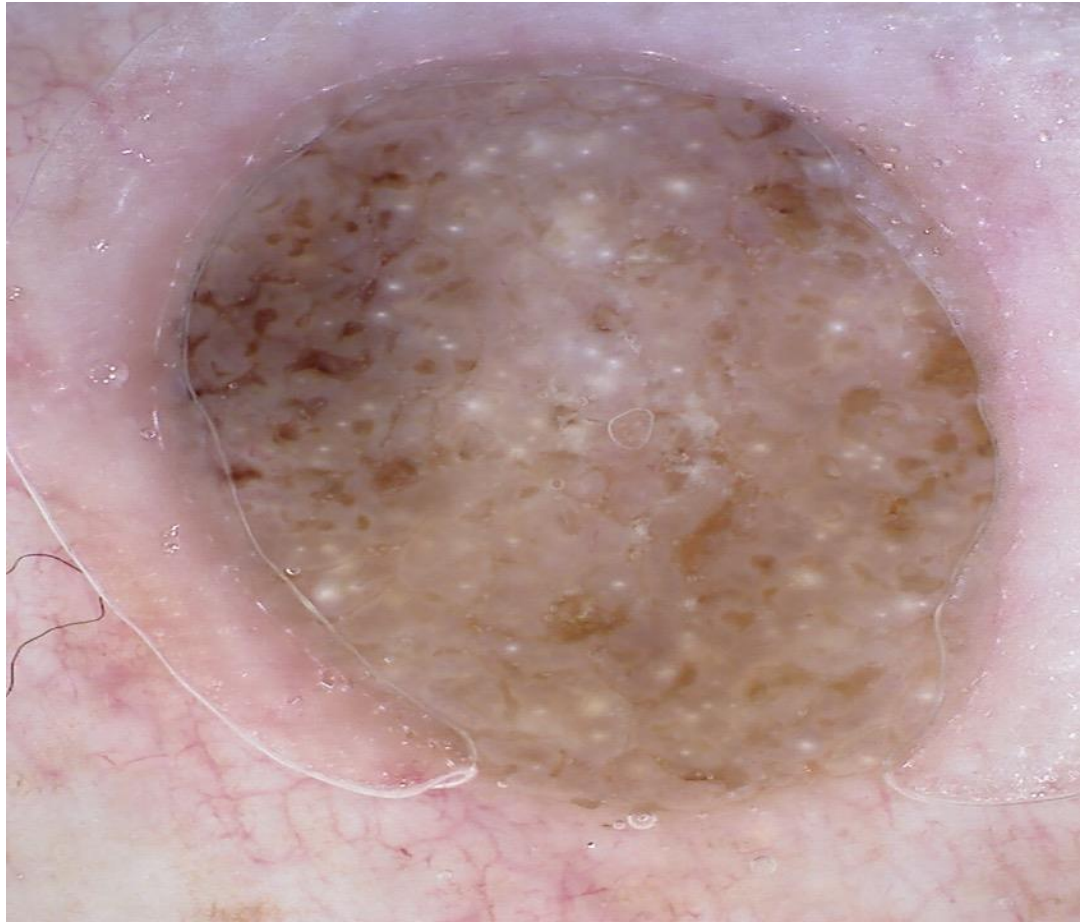
- a) Melanocytic naevus?
- b) Melanoma?
- c) Seborrhoeic keratosis?
- d) Basal cell carcinoma?



Lesion 9

Benign or Malignant?

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

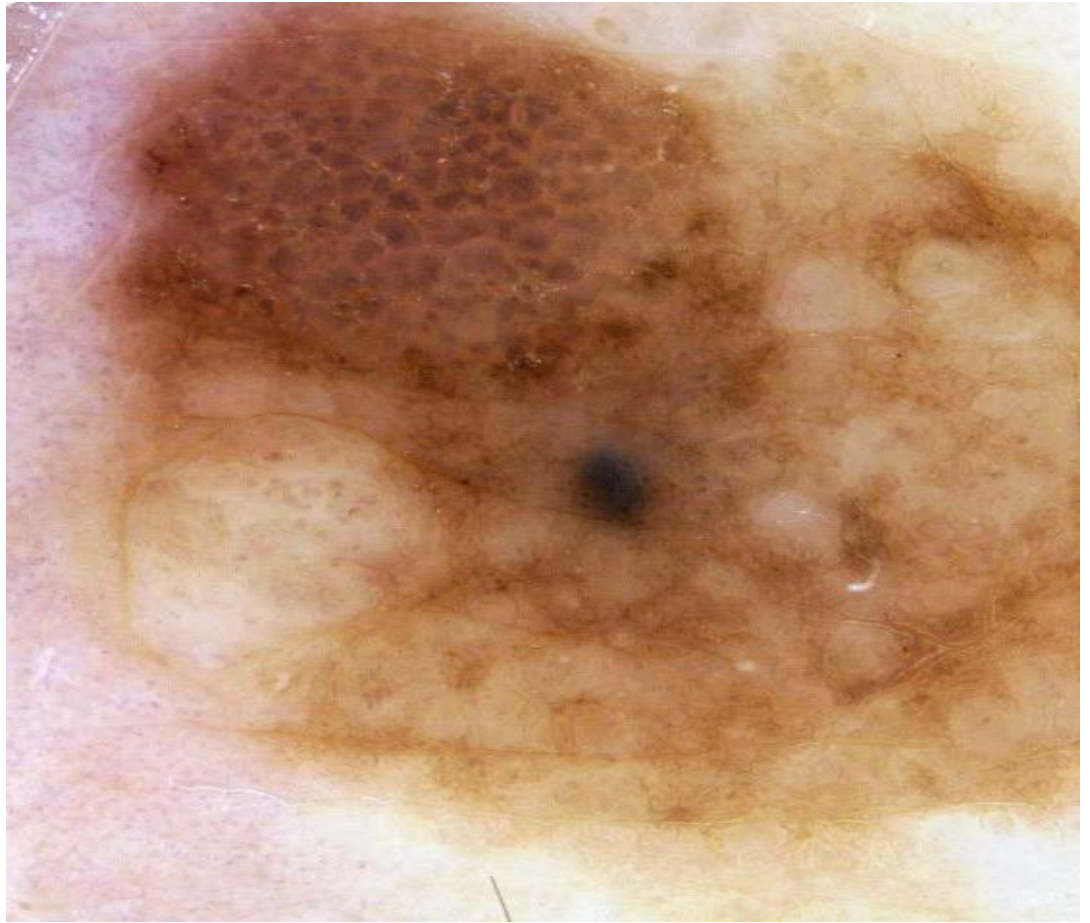


Lesion 10

Benign or Malignant?

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

Combined congenital naevus



Amanda.Oakley@me.com



**DERMATOLOGY
MADE EASY**
The new book by DermNet NZ

DOWNLOAD A
FREE CHAPTER



Download ↓