

Dermoscopy for Family Physicians

an introduction

Comox
June 9, 2026
by Shane Barclay MD

Disclosures

I have no financial disclosures.

However, my one disclosure...

I'm just a GP!

Objectives for today

To provide an 'introduction' to basic Dermoscopy
and hopefully 'motivation' to continue
using Dermoscopy in your daily practice..

Other Sources on the Net

Dermoscopy Made Simple

Dermnet

Dermatoscopes



A second piece of equipment



Dermatoscope

10X magnification.

Polarized or non polarized light.

Polarized light blocks superficial light to allow better visualization of deep structures (like melanin).

Why Dermoscopy ?

Melanoma incidence rates are increasing.

It is estimated that in 2025:

10,500 Canadians will be diagnosed with melanoma skin cancer. (~ 1400 in BC)

1,250 Canadians will die from melanoma

Why Dermoscopy ?

**Highest melanoma 'incidence' is in Australia
and New Zealand (10 – 20 X)**

90% melanomas are related to UV radiation.

What changes survival rates?

Early detection!

Why Dermoscopy ?

**New Zealand has the best
survival rates in the Western World**

Why?

How fast do Melanomas grow?

It depends!

They can take years to grow and eventually metastasize.

Others can grow in months.

Who should be screened

‘High Risk’ Patients

2 First degree relatives with melanoma

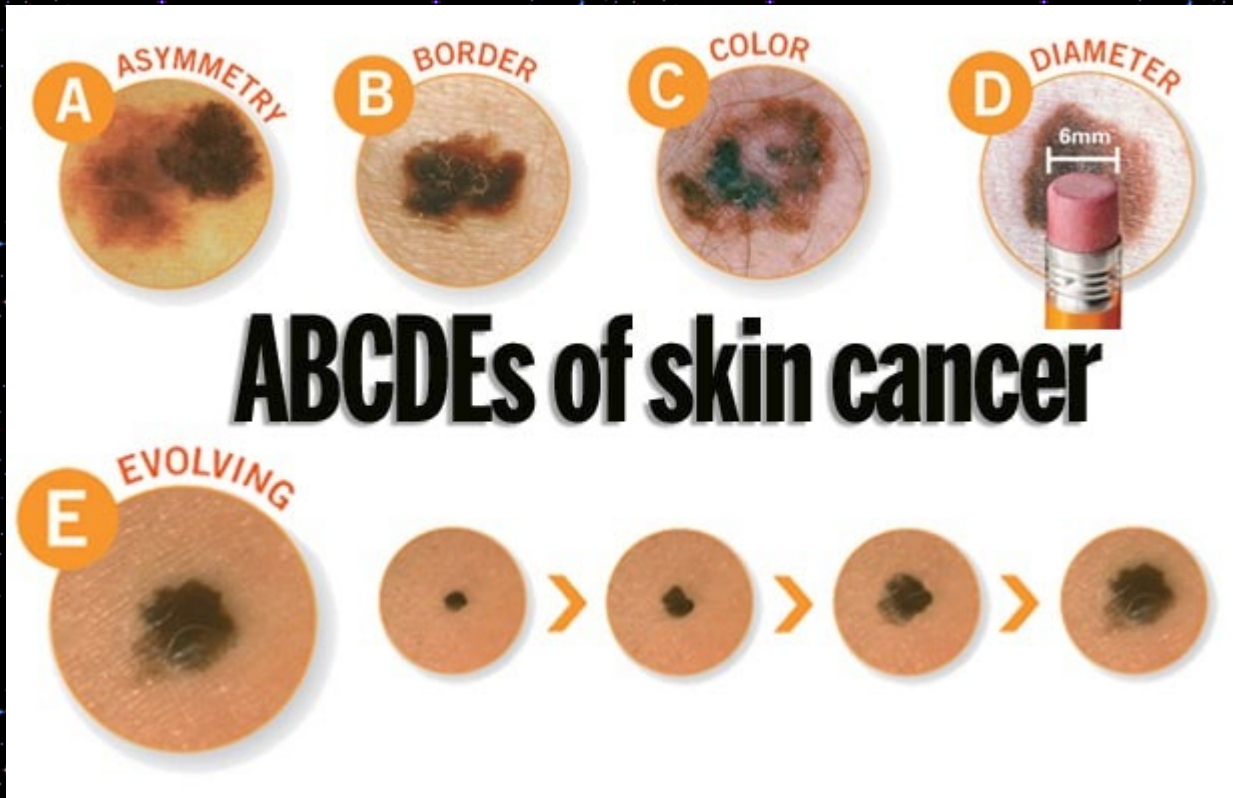
Patients with p16(Ink4A) gene

Sun exposure (especially tanning beds before age 35)

General population – not recommended

Clinical Clues for Biopsy

“ABCDE”



Biopsy

Best biopsy is an excisional one.

**If not possible, then single or
multiple punch Bx**

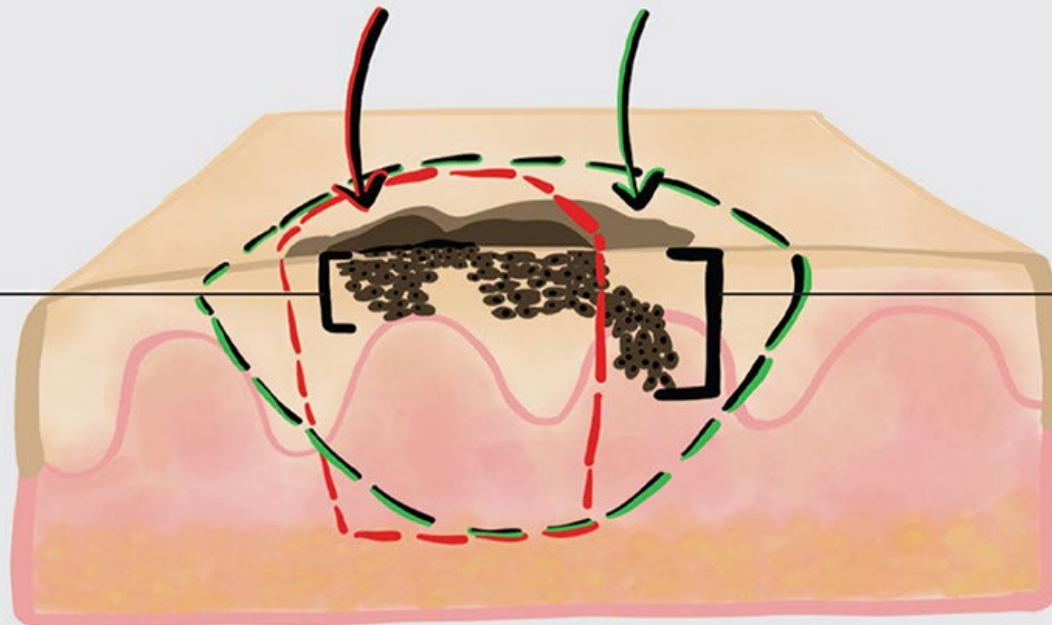
Shave biopsy not recommended.

Incisional biopsy

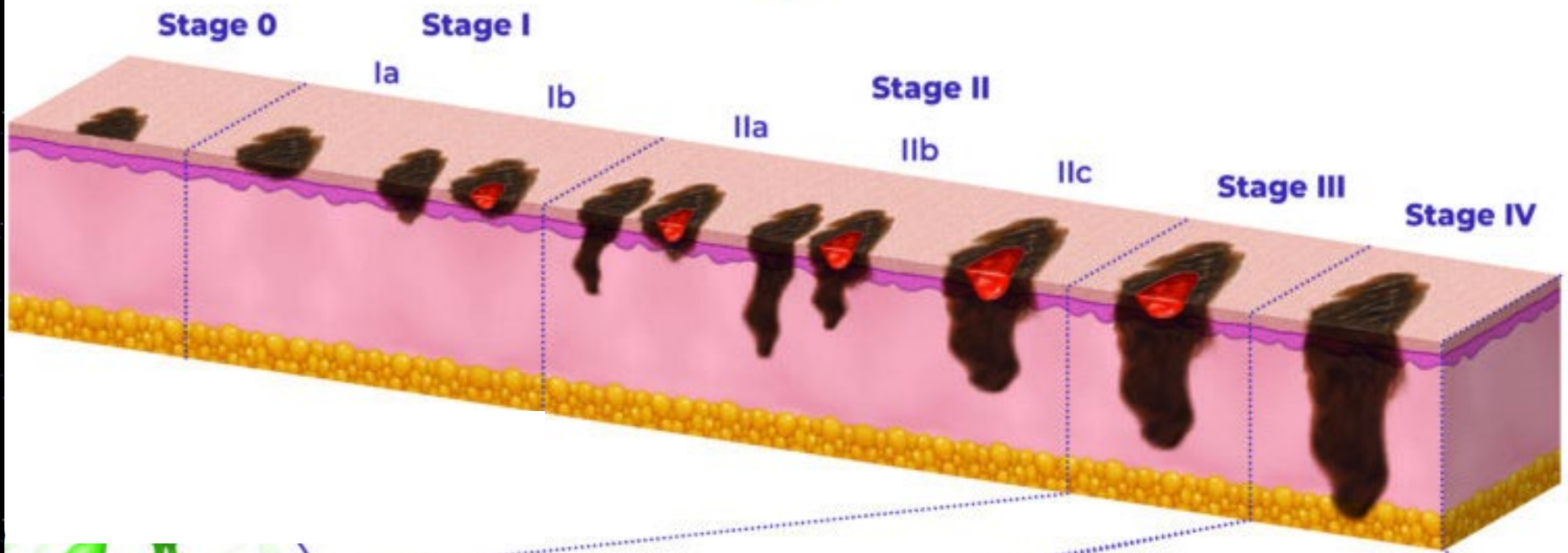
Excisional biopsy

Inaccurate
Breslow
depth

Accurate
Breslow
depth



Stages of Melanoma



Types of Melanoma

Superficial spreading - most common (70%)

Nodular – second most common and worse prognosis

Acral Lentiginous Melanoma – least common in whites, but most common in blacks.

Lentigo Maligna melanoma– usually in older patients with chronic sun exposure.

Amelanotic – rare

Desmoplastic – rare

Mucosal – rare and aggressive

Uveal (eye)

The background of the slide is a dark, starry night sky filled with numerous small, bright stars of varying colors (white, yellow, and red) and sizes. A dark blue rectangular box with a thin red border is centered horizontally and contains the text.

Now...to Dermoscopy

The Dermoscopy 'Dictionary'

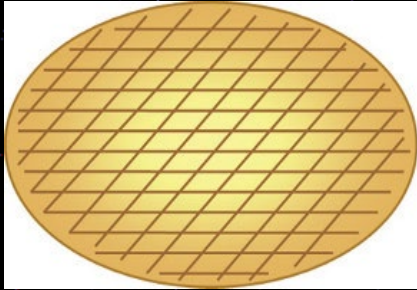


The Dermoscopy ‘Dictionary’

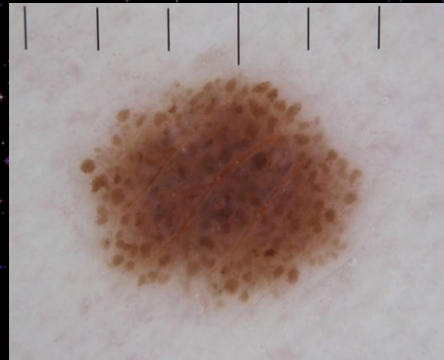
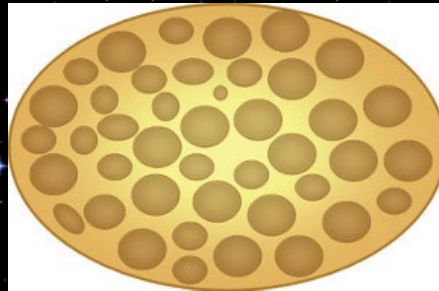
- 1. Reticular**
- 2. Globular**
- 3. Homogeneous**
- 4. Streaks/Starburst/pseudopods**
- 5. Parallel lines**
- 6. Cobblestone**
- 7. Multicomponent**
- 8. Lacunar**
- 9. Dots and Globules**
- 10. Blue White structure**
- 11. Pigment blotches**
- 12. Regression**
- 13. Vascular**

The Dermoscopic Dictionary

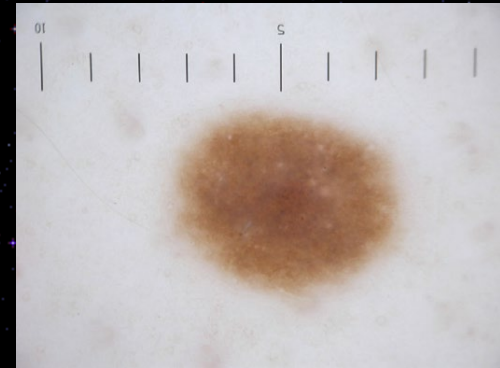
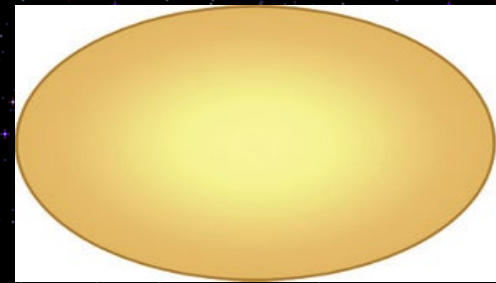
Reticular



Globular

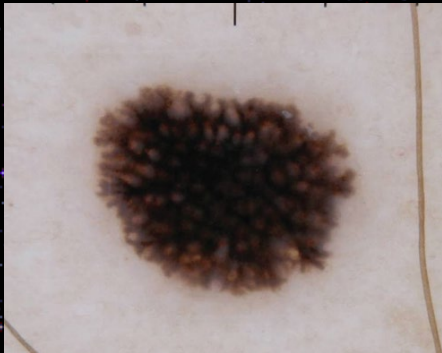
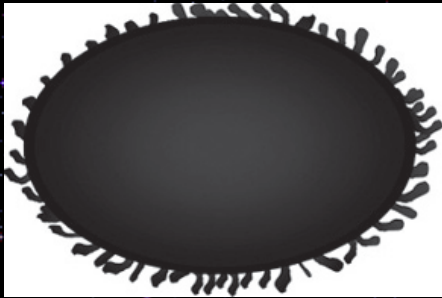


Homogeneous

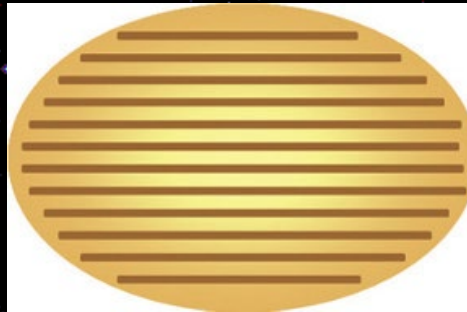


The Dermoscopic Dictionary

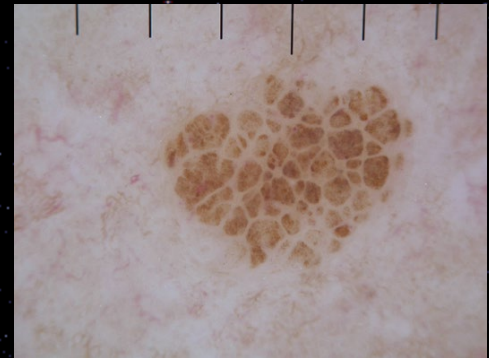
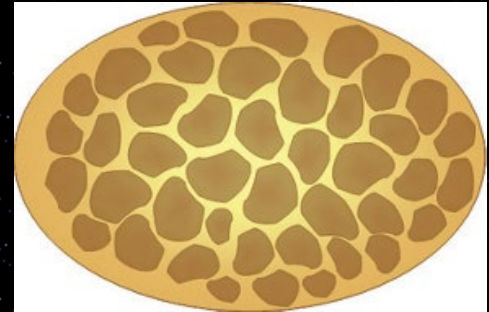
Streaks/Starburst



Parallel lines

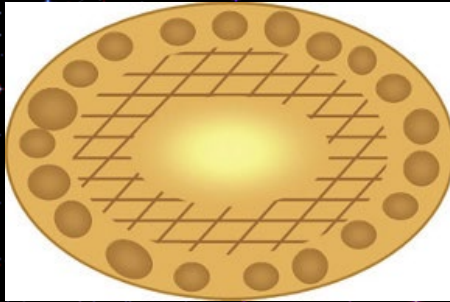


Cobblestone

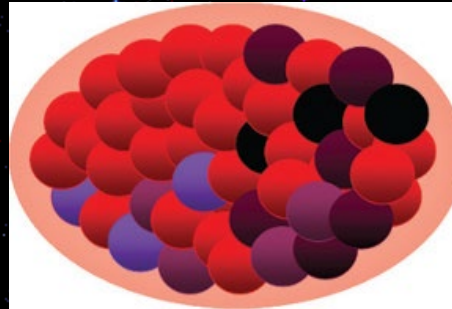


The Dermoscopic Dictionary

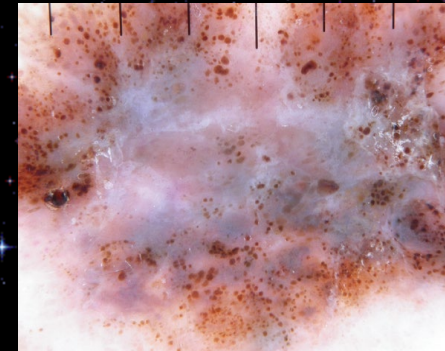
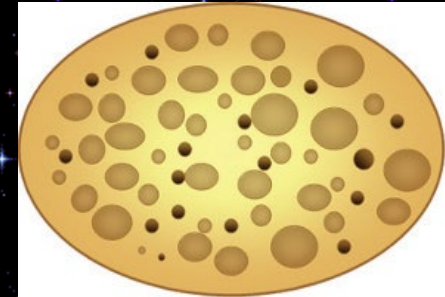
Multicomponent



Lacunar

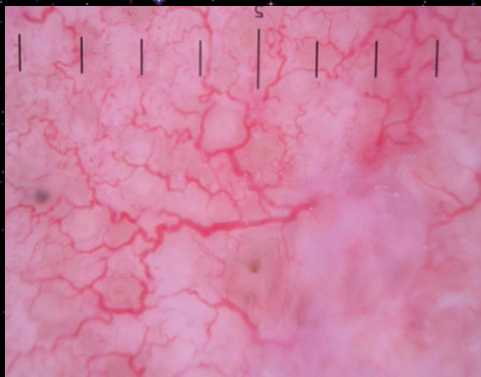
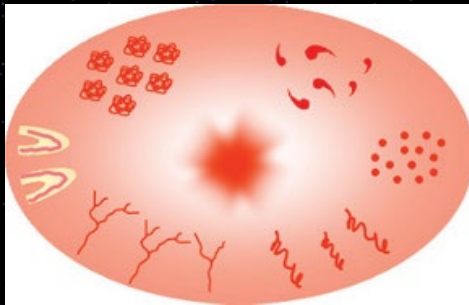


Dots and Globules

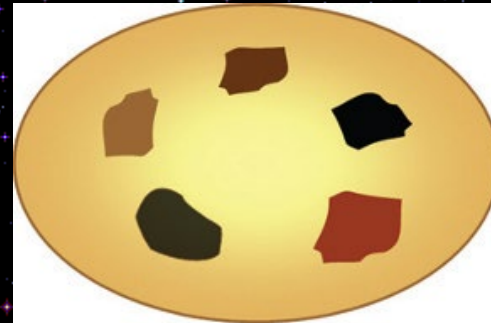


The Dermoscopic Dictionary

Vascular Structures

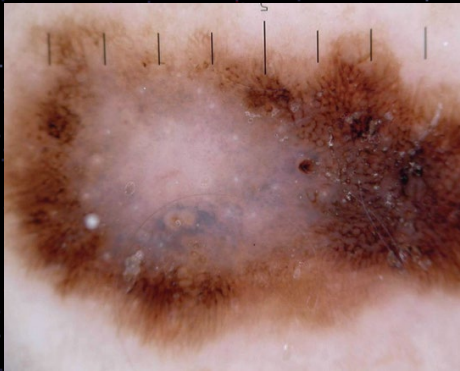
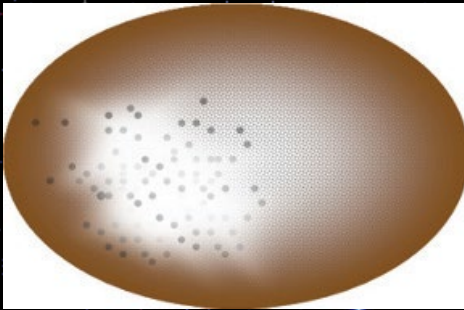


Pigment Blotches

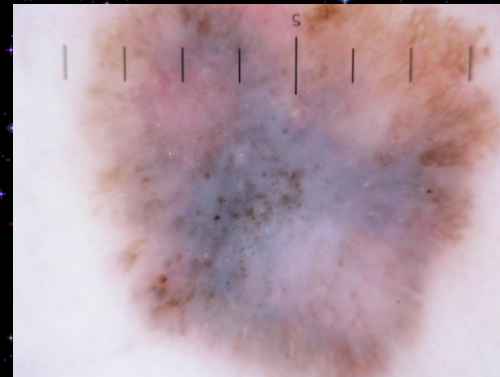
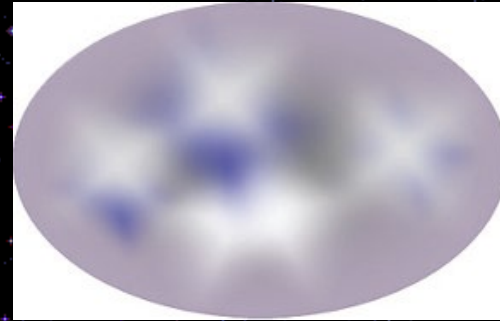


The Dermoscopic Dictionary

Regression
structures



Blue White
Veil



Regression and Blue Veil

Feature

Underlying
biology

Elevation

Dermoscopy
appearance

Regression

Immune system
attacking.

Flat

"Peppering" (tiny,
multiple blue-grey
dots) over a white,
scar-like
background.

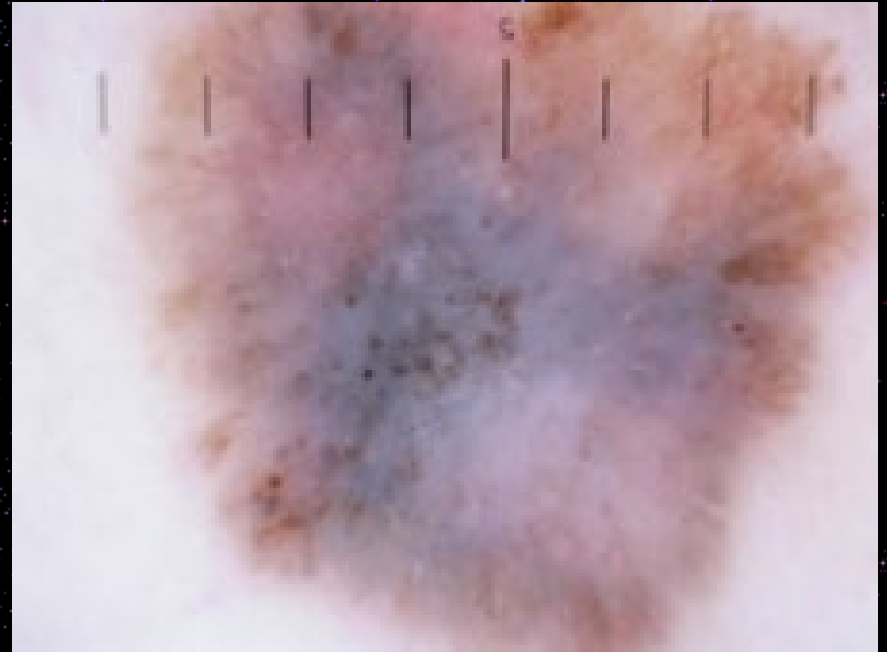
Blue-White Veil

High tumor
burden, often
thicker invasive

Raised and palpable

Confluent blue
pigmentation with
an overlying milky-
white, "ground-
glass" haze

Regression and Blue Veil



2 approaches to pigmented lesions

- 1. The 2 Step Dermoscopy Algorithm
Phone App (free):
“Dermoscopy Two Step Algorithm”**
- 2. The Australian ‘Chaos and Clues’**

Free App for your phone



Two step dermoscopic algorithm

Pigmented skin lesions



First Step.
Is it melanocytic or not?

**Are there cells containing
melanin?**

If not melanocytic then:

Two step dermoscopic algorithm

Pigmented skin lesions

Pigment network
Blotches; Dots/globules
Streaks/pseudopods
Homogenous blue pigmentation

Yes

No

Non-melanocytic

Milia-like cysts
Comedo-like openings
Fissures and ridges

**Seborrheic
keratosis**

Leaf-like areas
Blue-gray ovoid nests/globules
Spoke-wheel areas
Arborizing vessels

**Basal cell
carcinoma**

Red blue-black lacunae
Red-bluish to red black
homogeneous areas

**Angioma /
angiokeratoma**

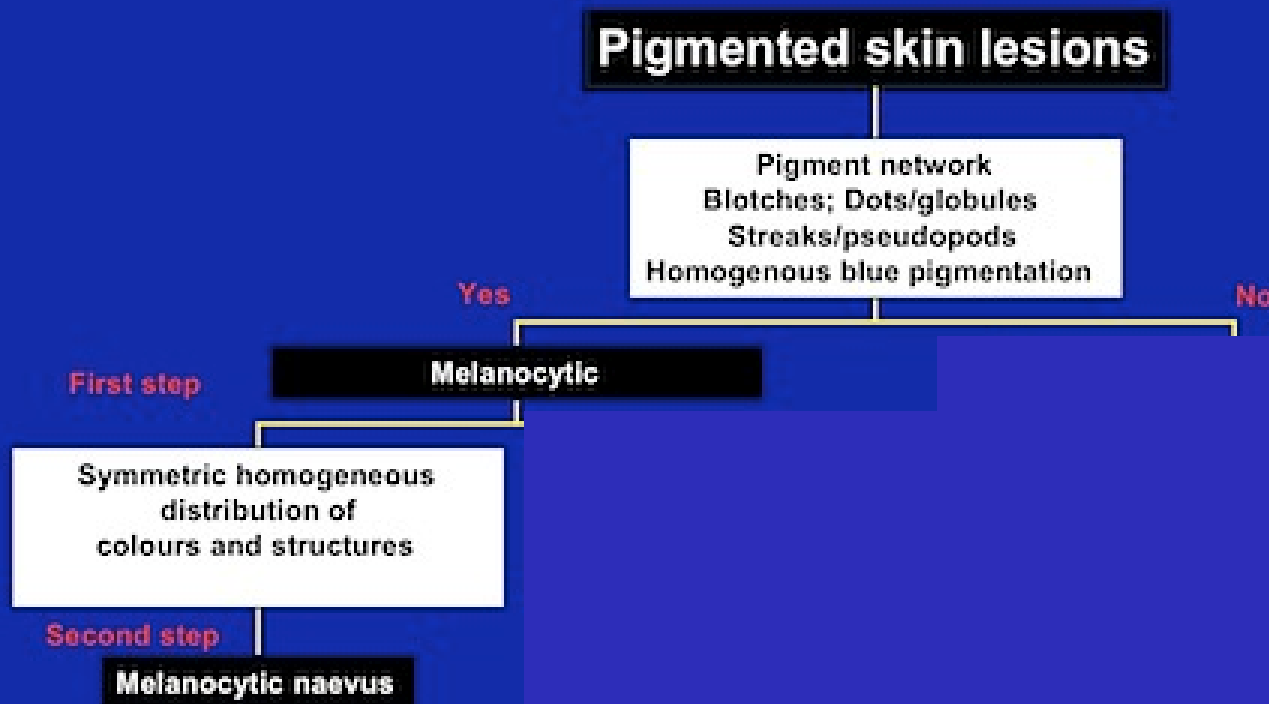
Central scar (white or pink)
Peripheral fine brown reticulation

Dermatofibroma

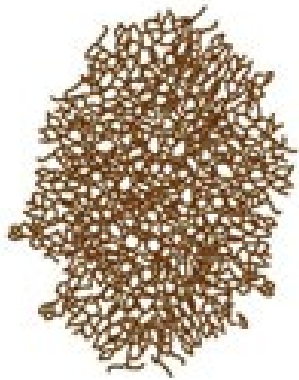
Second Step.

**If the pattern fits one of the
'melanocytic' criteria, does it
have a benign appearance or
not?**

Two step dermoscopic algorithm



The 10 benign nevi patterns



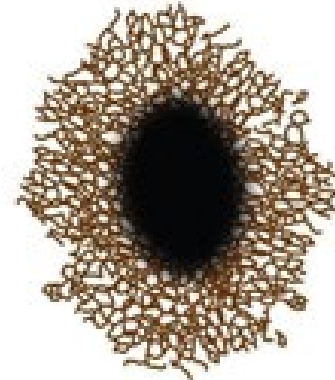
Diffuse reticular



Patchy reticular



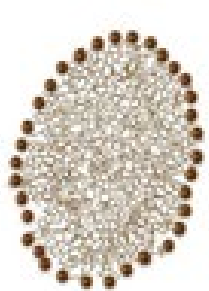
Peripheral reticular with central hypopigmentation



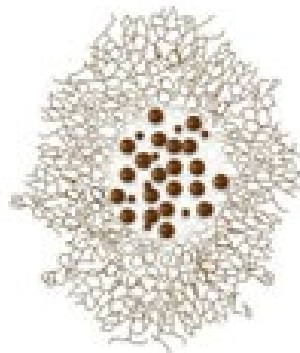
Peripheral reticular with central hyperpigmentation



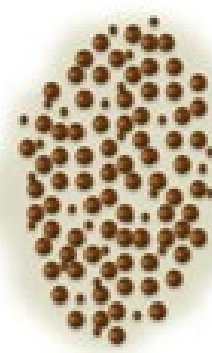
Homogeneous



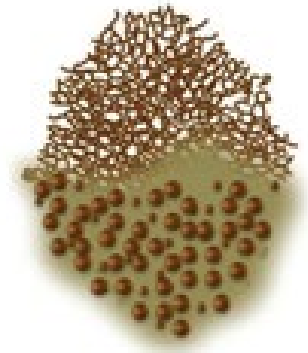
Peripheral globules/starburst



Peripheral reticular with central globules



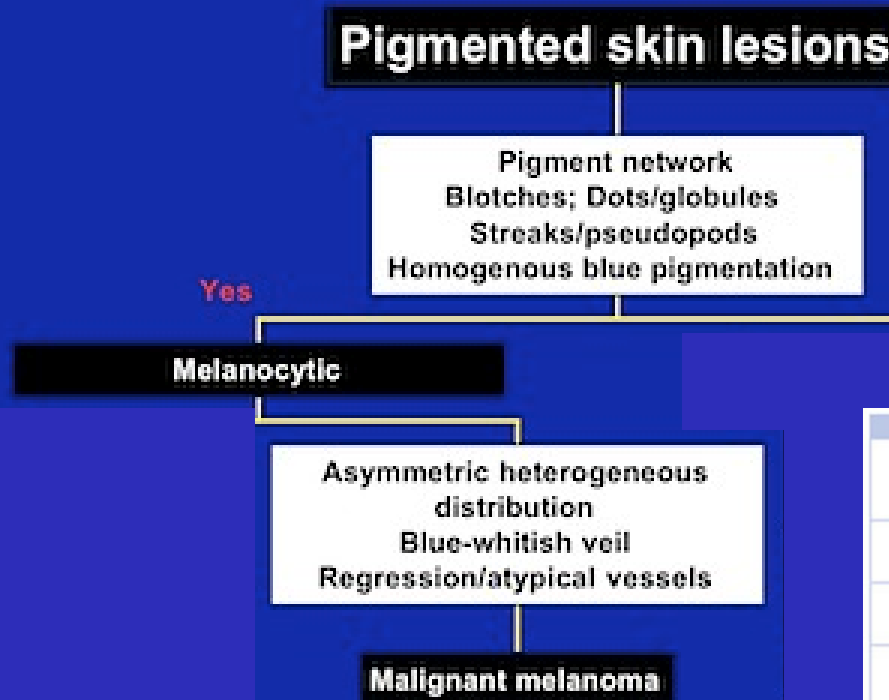
Globular



Two components

Step Three:
If melanocytic, does it have
one of the ‘melanoma’ pattern
criteria?

Two step dermoscopic algorithm

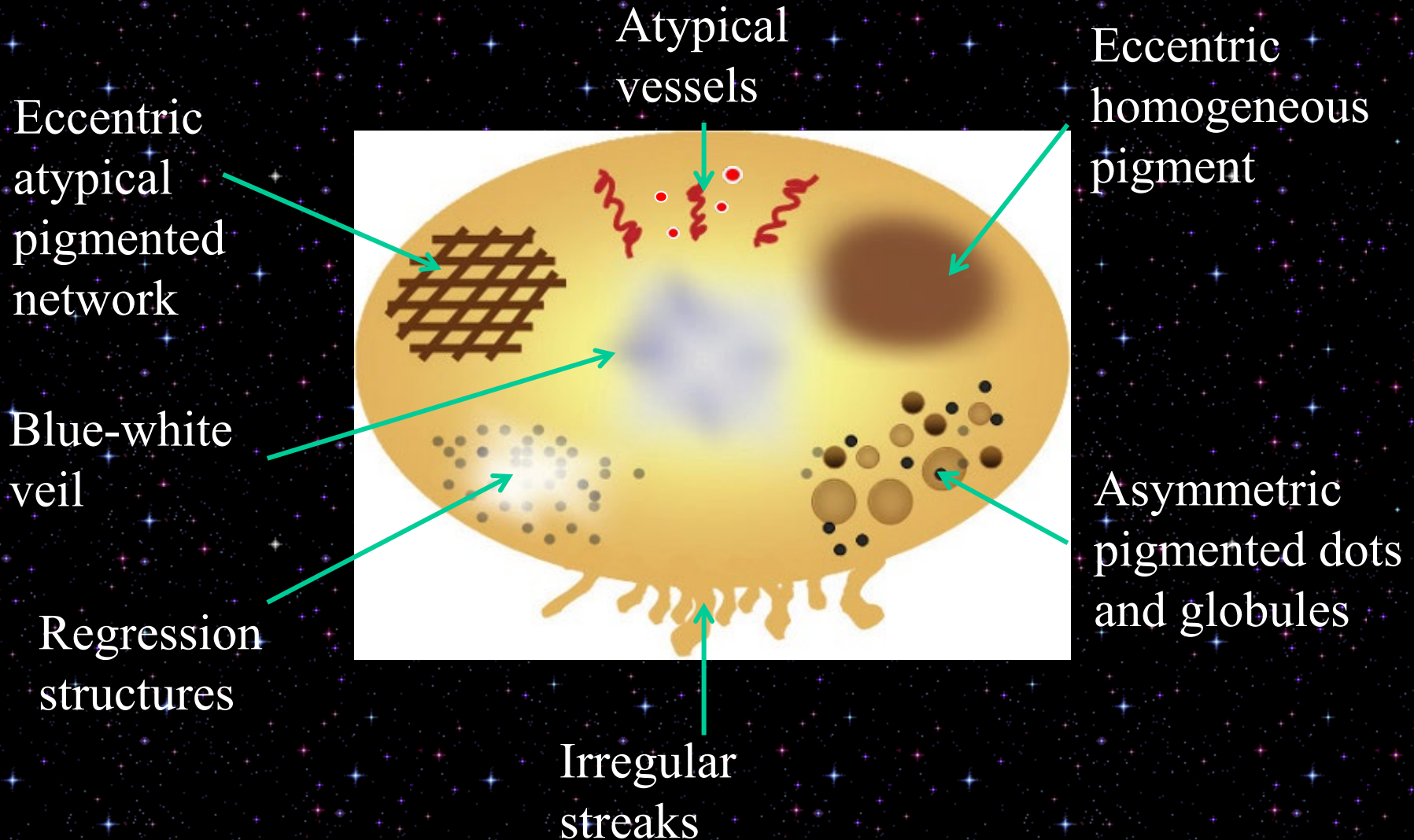


- Pigment or 'Negative' Network
- Dots/Globules
- Peripheral rim of globules
- Streaks (pseudopods)
- Blotches
- Homogeneous Blue Pigmentation
- Blue Whitish Veil
- Regression Structures (blue grey peppering)
- Parallel lines (acral)

Dermoscopic structure	Definition	Schematic illustration
Atypical vascular structures	Serpentine vessels, dotted vessels, polymorphous vessels (2 or more vessel morphologies), vascular blush and/or red globules	
Granularity, also known as peppering	Tiny, blue-gray granules	
Blue-white veil	Confluent blue pigmentation with an overlying white "ground glass" haze	
Atypical globules	Multiple dots and/or globules of different size, shape and color, asymmetrically and/or focally distributed within the lesion	
Crystalline structures, also known as shiny white lines or streaks	Shiny, white linear streaks that are often oriented parallel or orthogonal to each other. This structure is more conspicuous with polarized light dermoscopy.	
Atypical network	Increased variability in the width of the network lines, their color and distribution. The hole sizes also have increased variability. The network lines may end abruptly at the periphery.	
Annular granular pattern	Blue-gray or black granules and dots situated around follicular openings. The pigment around the adnexal openings often appears to be asymmetrically distributed, creating asymmetric follicular openings.	
Polygonal lines	Dark brown to blue-gray interfollicular pigment that manifests as lines oriented in a zig-zag pattern. These lines eventually form rhomboidal structures, which are commonly seen in UMM.	
Featureless	No structures or vessels are observed.	

Table 2. Dermoscopic Structures Seen in Desmoplastic Melanomas

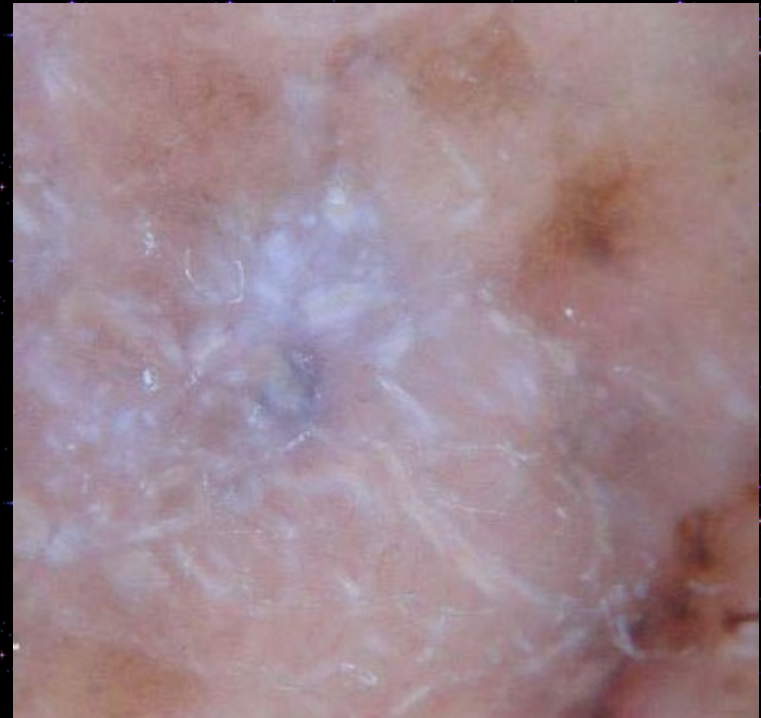
7 Features of Melanoma



An 8th Feature of Melanoma

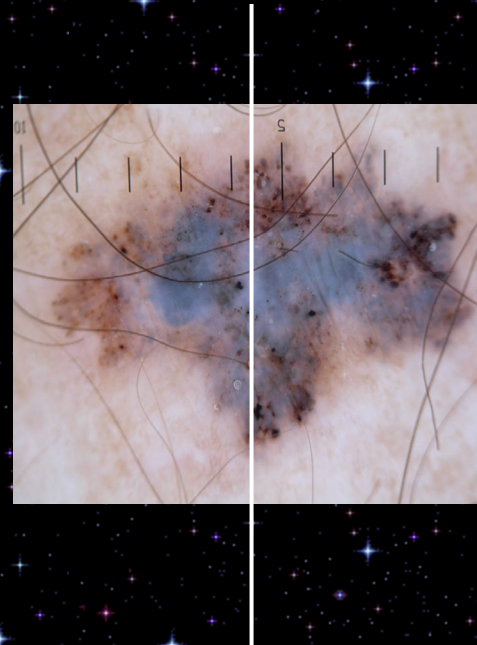
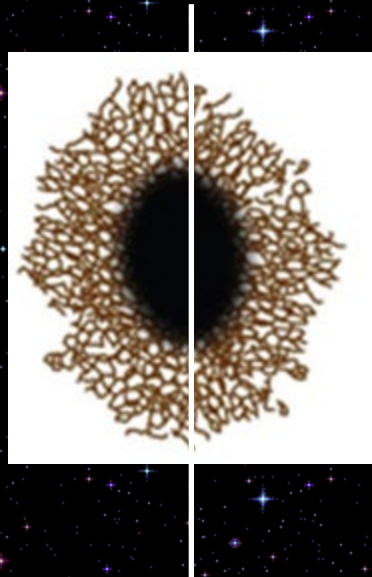
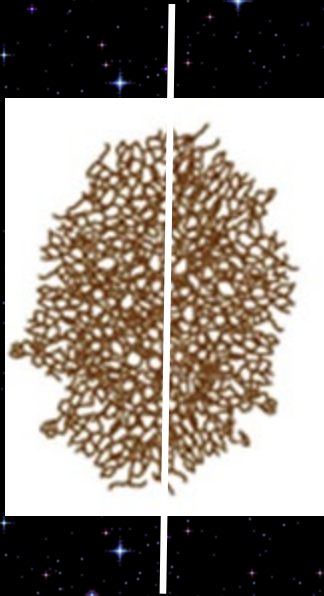
Parallel or Perpendicular white lines seen under polarized light.

Can be a feature of BCC or melanoma.



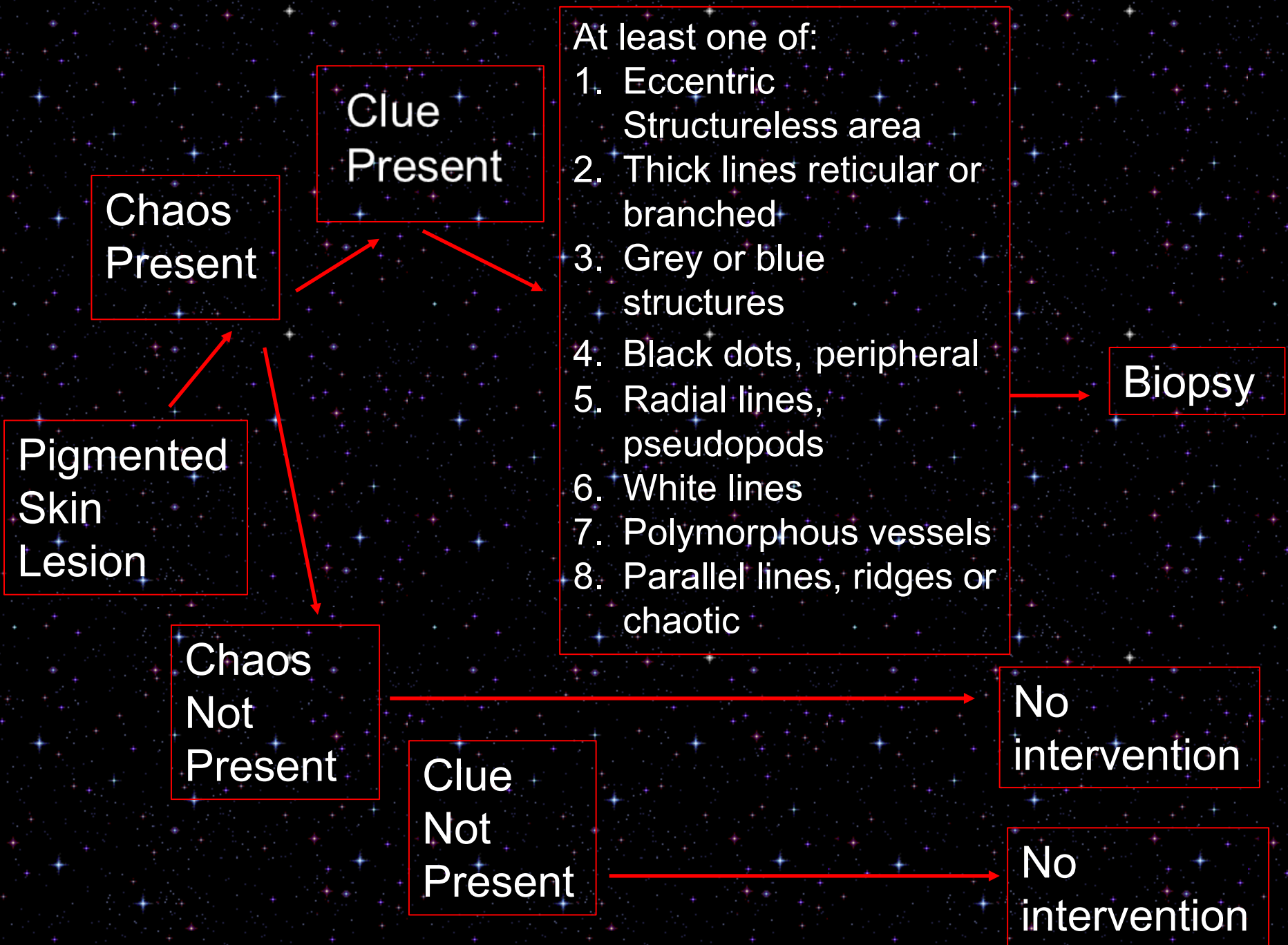
‘Rorschach Test’

Can you divide the lesion in the middle and does each side look the same?





The Australian ‘Chaos and Clues’ Algorithm



Pigmented
Skin
Lesion

Chaos
Present

Clue
Present

- At least one of:
1. Eccentric Structureless area
 2. Thick lines reticular or branched
 3. Grey or blue structures
 4. Black dots, peripheral
 5. Radial lines, pseudopods
 6. White lines
 7. Polymorphous vessels
 8. Parallel lines, ridges or chaotic

Biopsy

Chaos
Not
Present

Clue
Not
Present

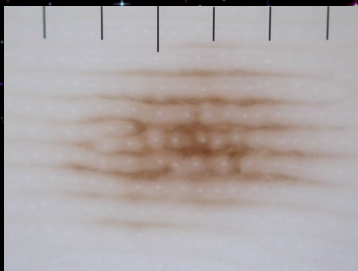
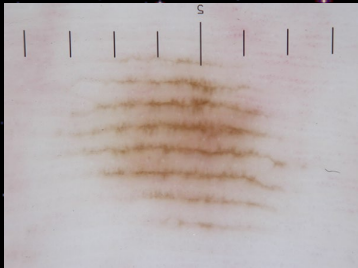
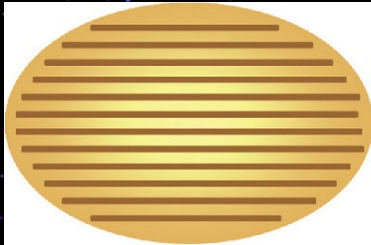
No
intervention

No
intervention

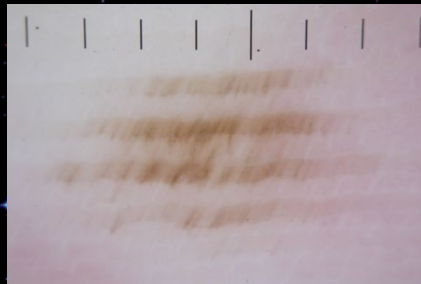
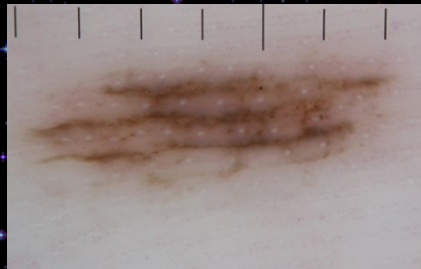
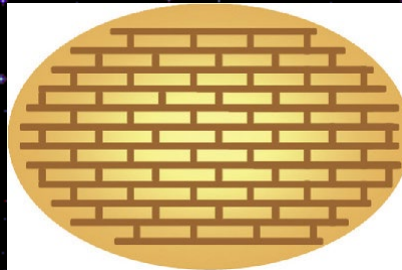
Acral Naevi

‘Furrows’ = benign

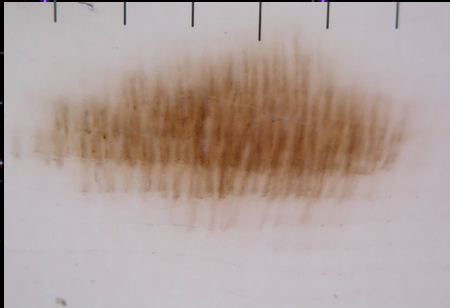
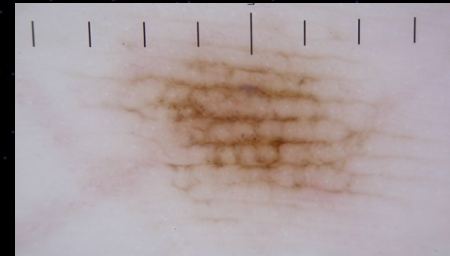
Furrow pattern
(benign)



Lattice

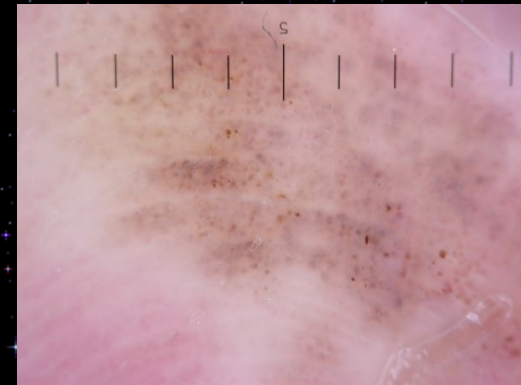
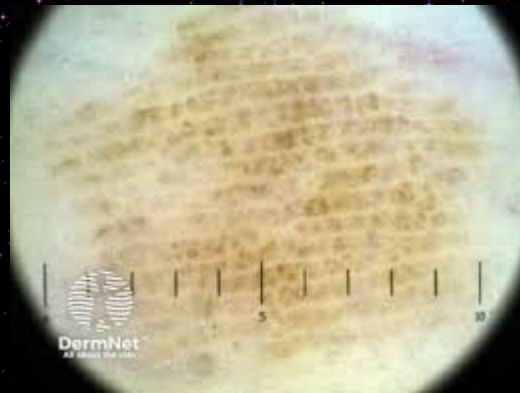
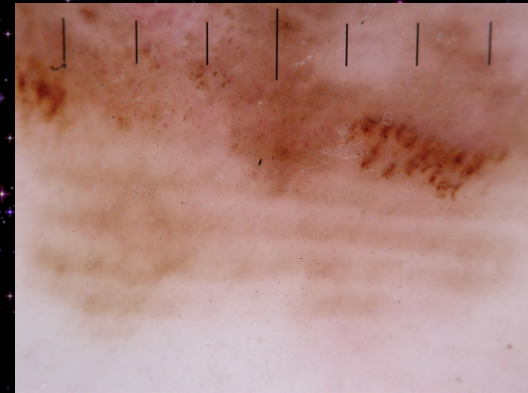
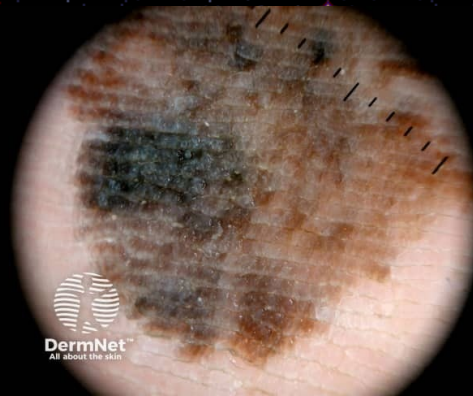
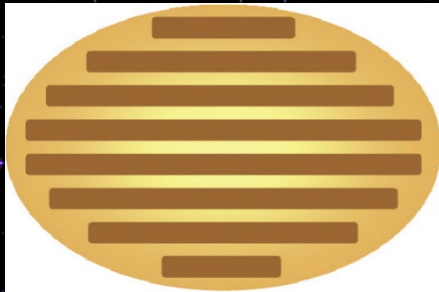


Fibrillar



Acral Melanoma

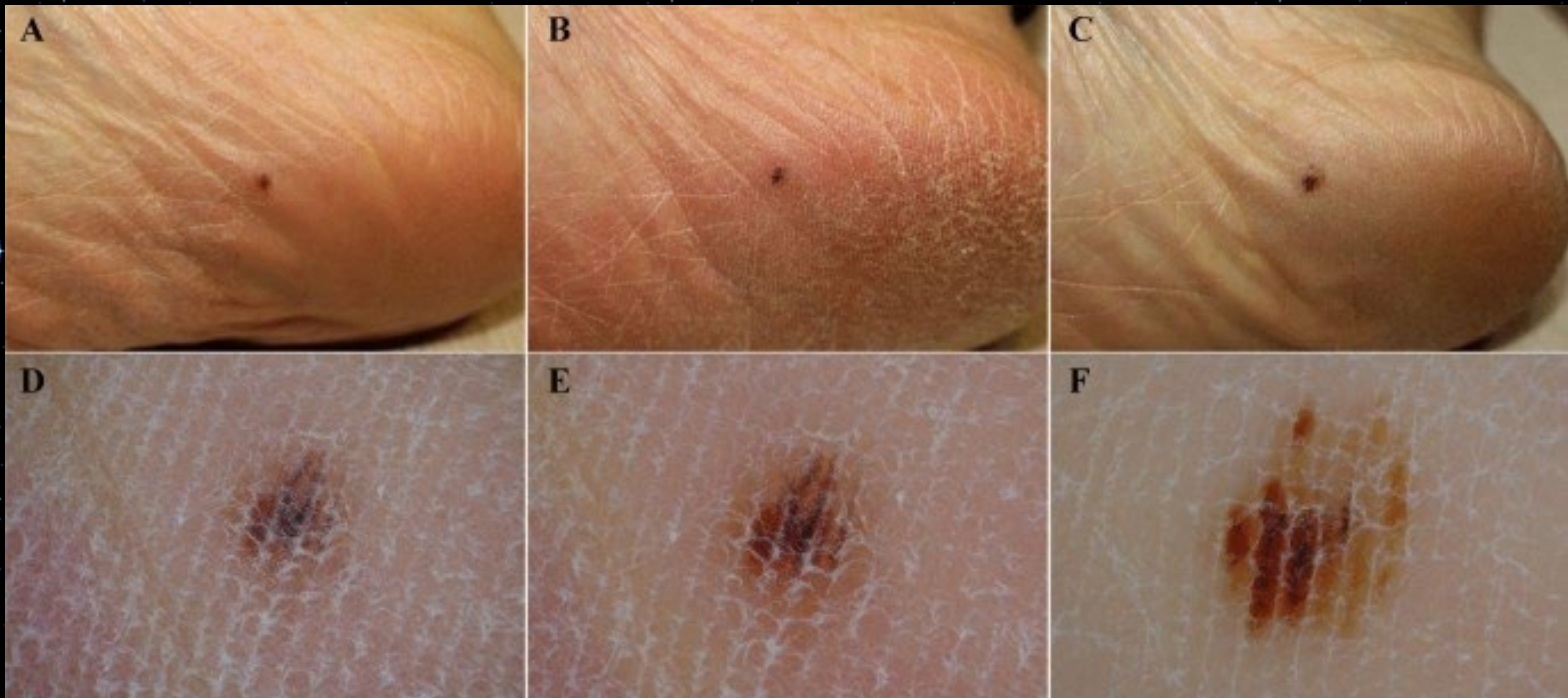
‘Ridges’ = melanoma



Pigment is on the ridges, not in the furrows.
99% specific for melanoma.

Acral Melanoma

‘Ridges’ = melanoma



Subungual Hematoma vs Melanoma

Nail Melanoma vs. Benign Conditions



**SUBUNGUAL
HEMATOMA**

Reddish-black

Irregular pattern



**MELANOCYTIC
NEVUS**

Regular brown

Parallel lines



**NAIL
MELANOMA**

Irregular dark
band

Hutchinson's sign



**FUNGAL
INFECTION**

Yellowish
discoloration

Thickening

Subungual Hematoma vs Melanoma



Hutchinson's Sign

extension of brown-to-black pigmentation from the nail bed or matrix onto the surrounding skin

Hematoma vs Melanoma vs ?



Acral Melanoma

My Memory Aid?

**“Furrows are Fine,
Ridges need Stitches”**

**But have a low index of suspicion
for biopsy!**

“Money can’t buy life”



Bob Marley – died from metastatic lentiginous melanoma from his big toe.

Melanoma in Dark/Black Skin

- **Melanoma risk in white people is 1 in 33 whereas in black people it is 1 in 1000.**
- **5 yr survival whites – 94%**
- **5 yr survival blacks – 70%**

Acral Melanoma - Prognosis

Typically, worse in black people but because historically they are diagnosed much later.

Lentiginous melanoma has 2-8% prevalence in whites and 35-60% in blacks.

Clinical Cases

Ok.....

So you may be feeling lost?!

Clinical Cases

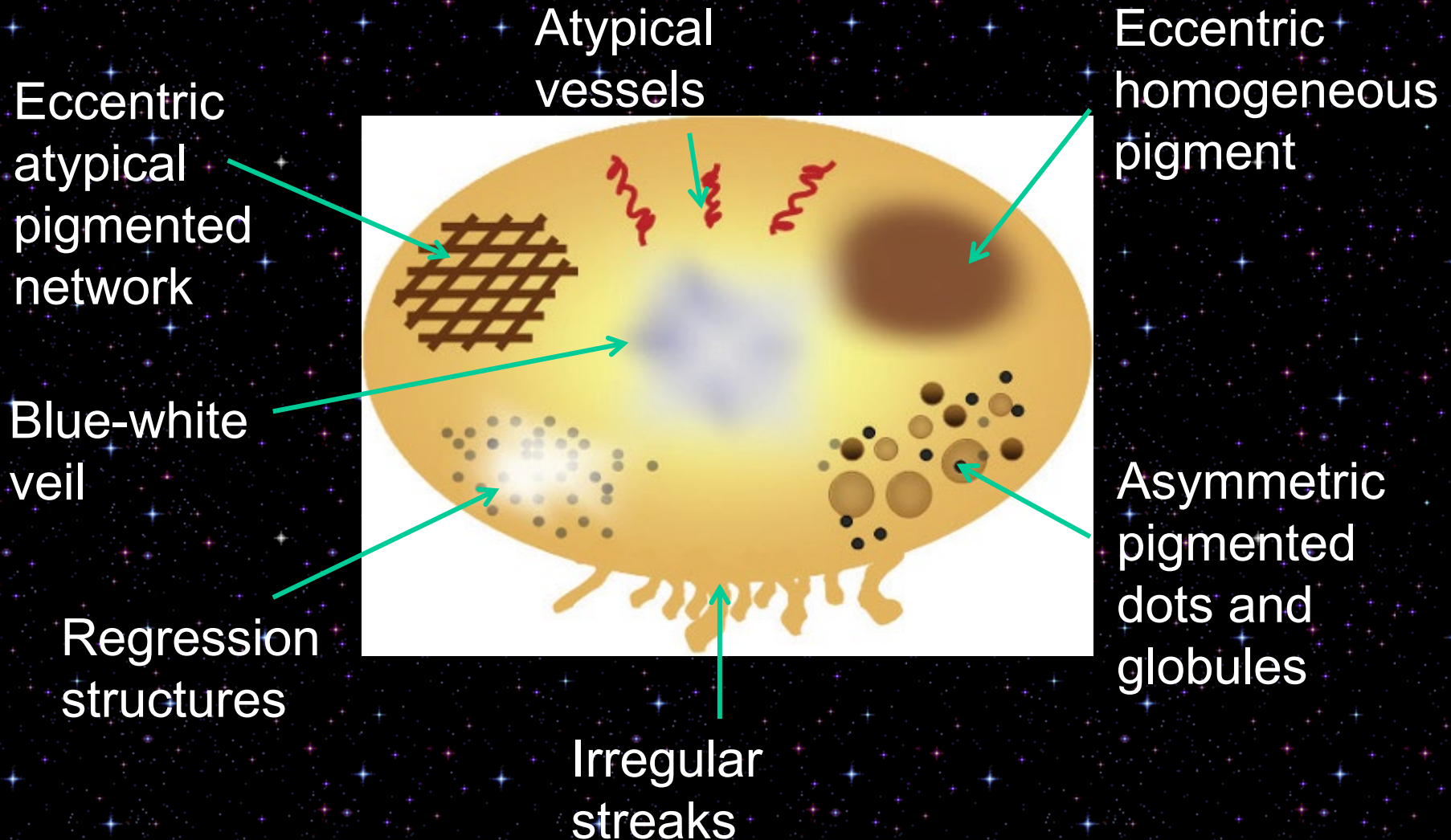
Simple Question:

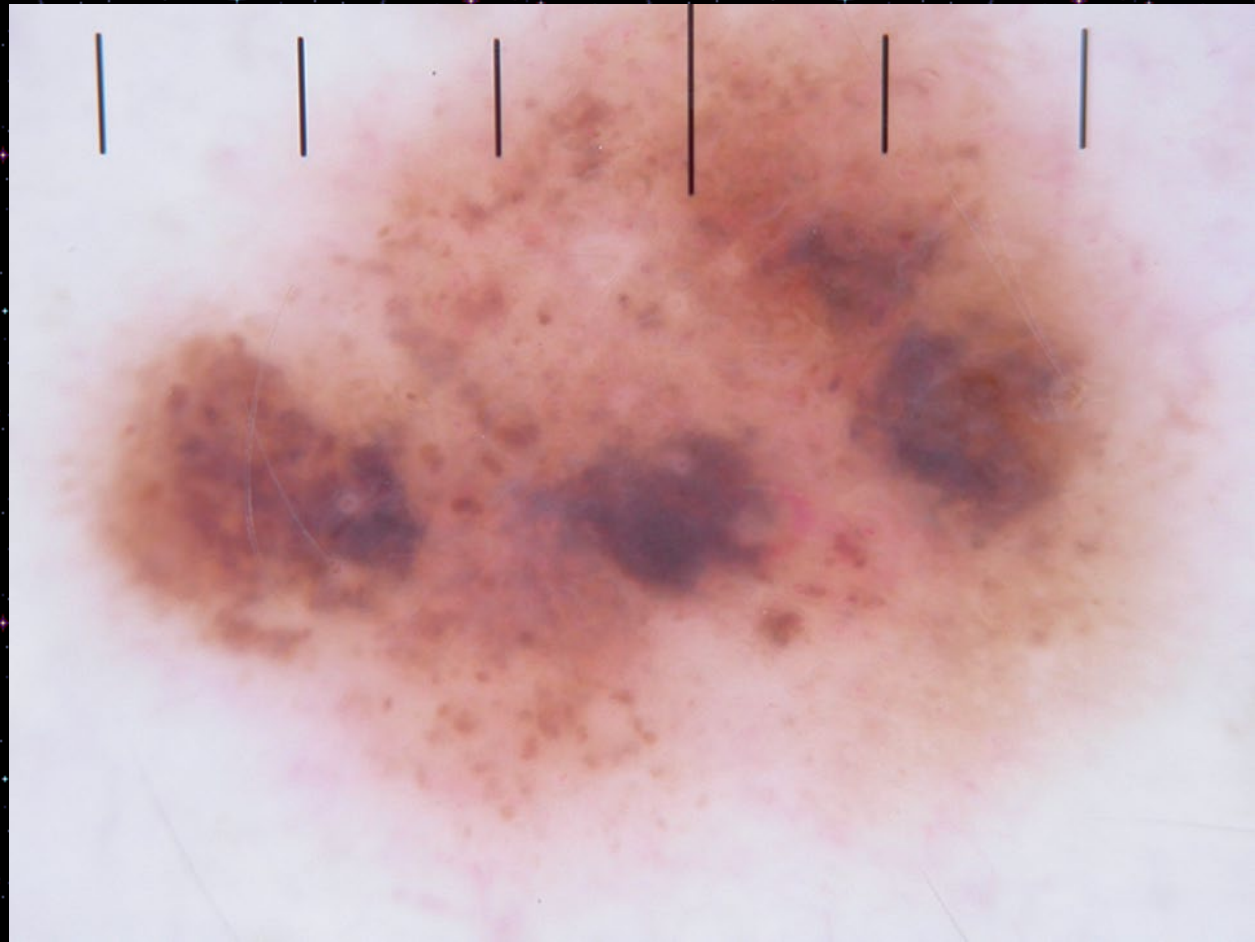
**With the following pictures...
Benign versus Melanoma?**

or

Biopsy or not?

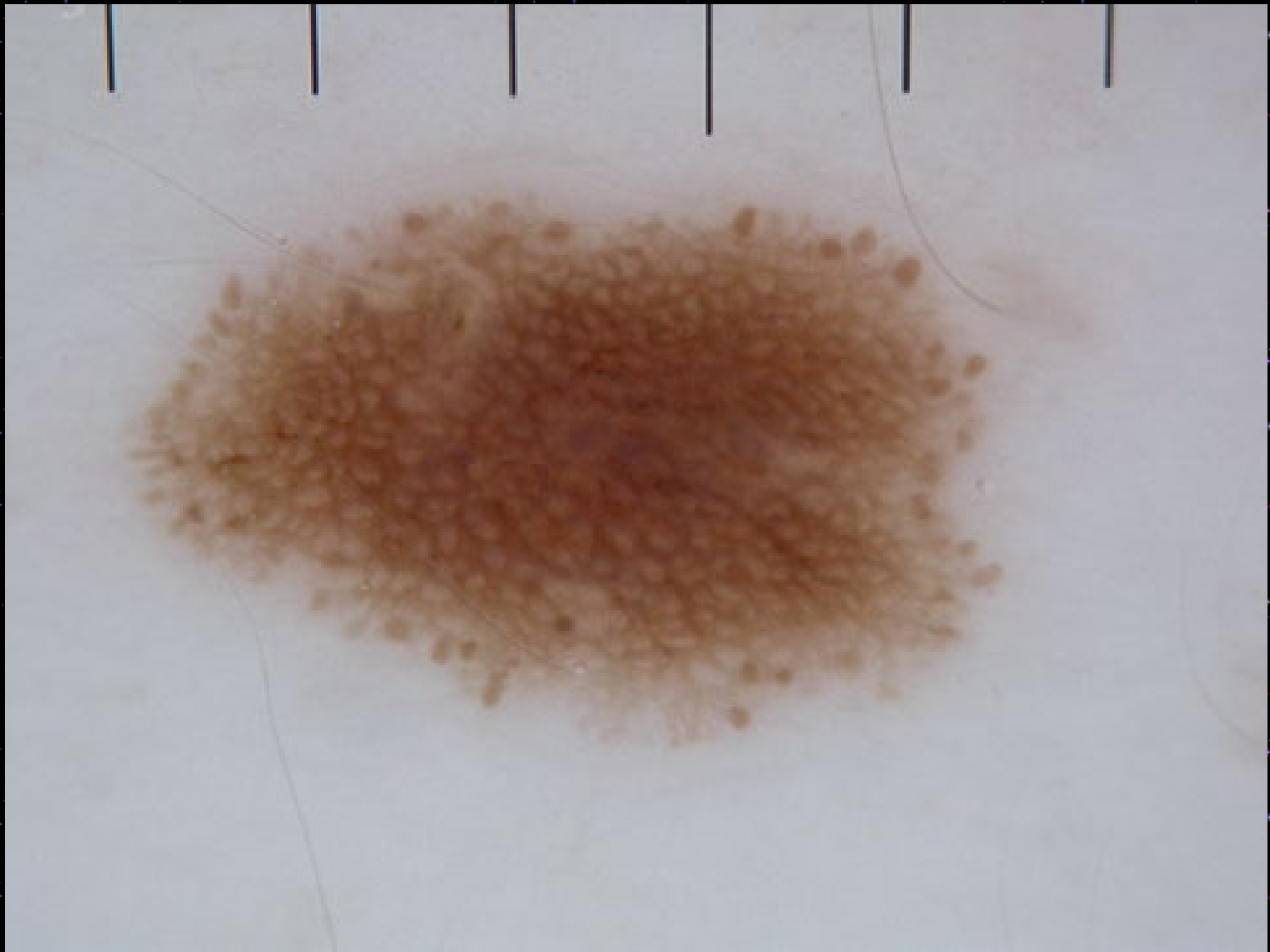
Review - 7 Features of Melanoma





Melanoma –

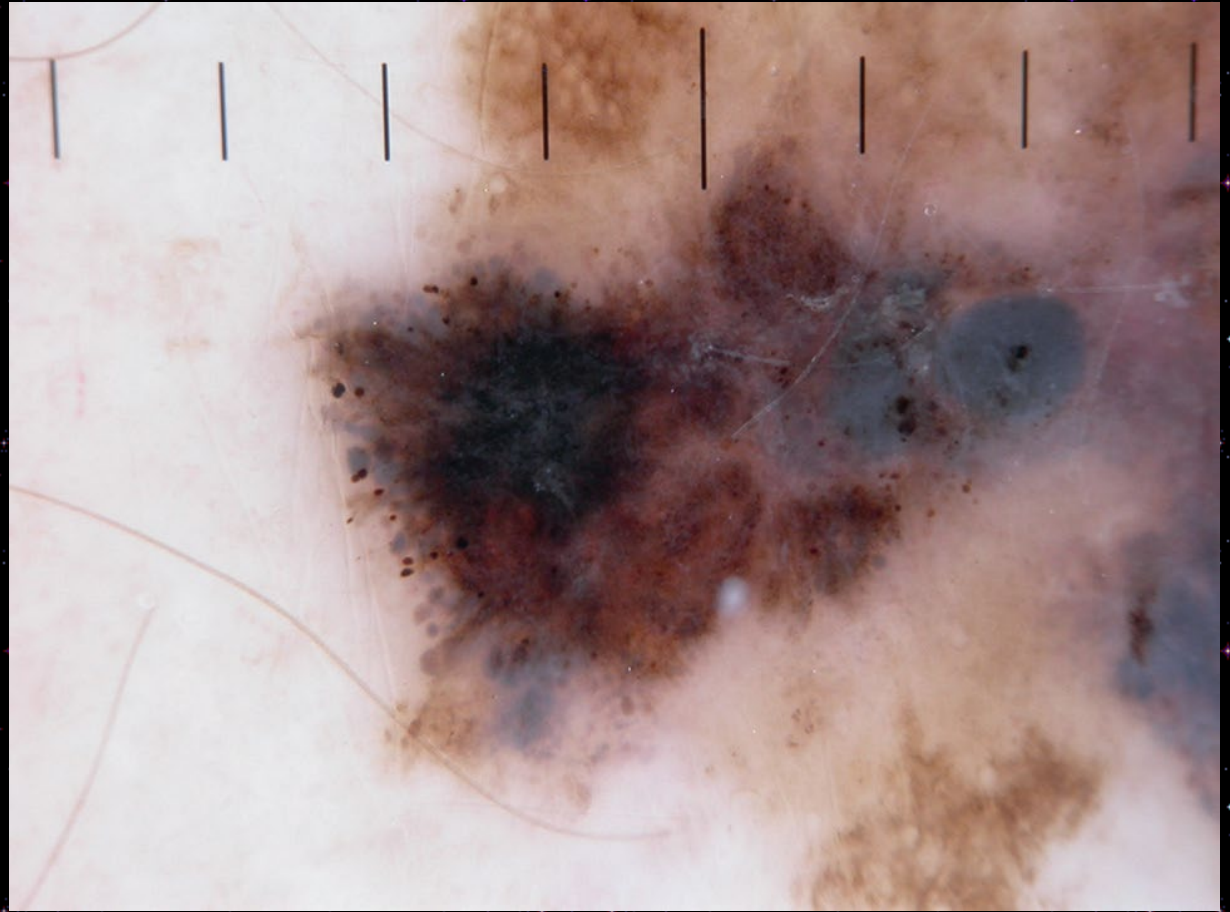
Pigmented macule with irregular pigmented blotches and globules



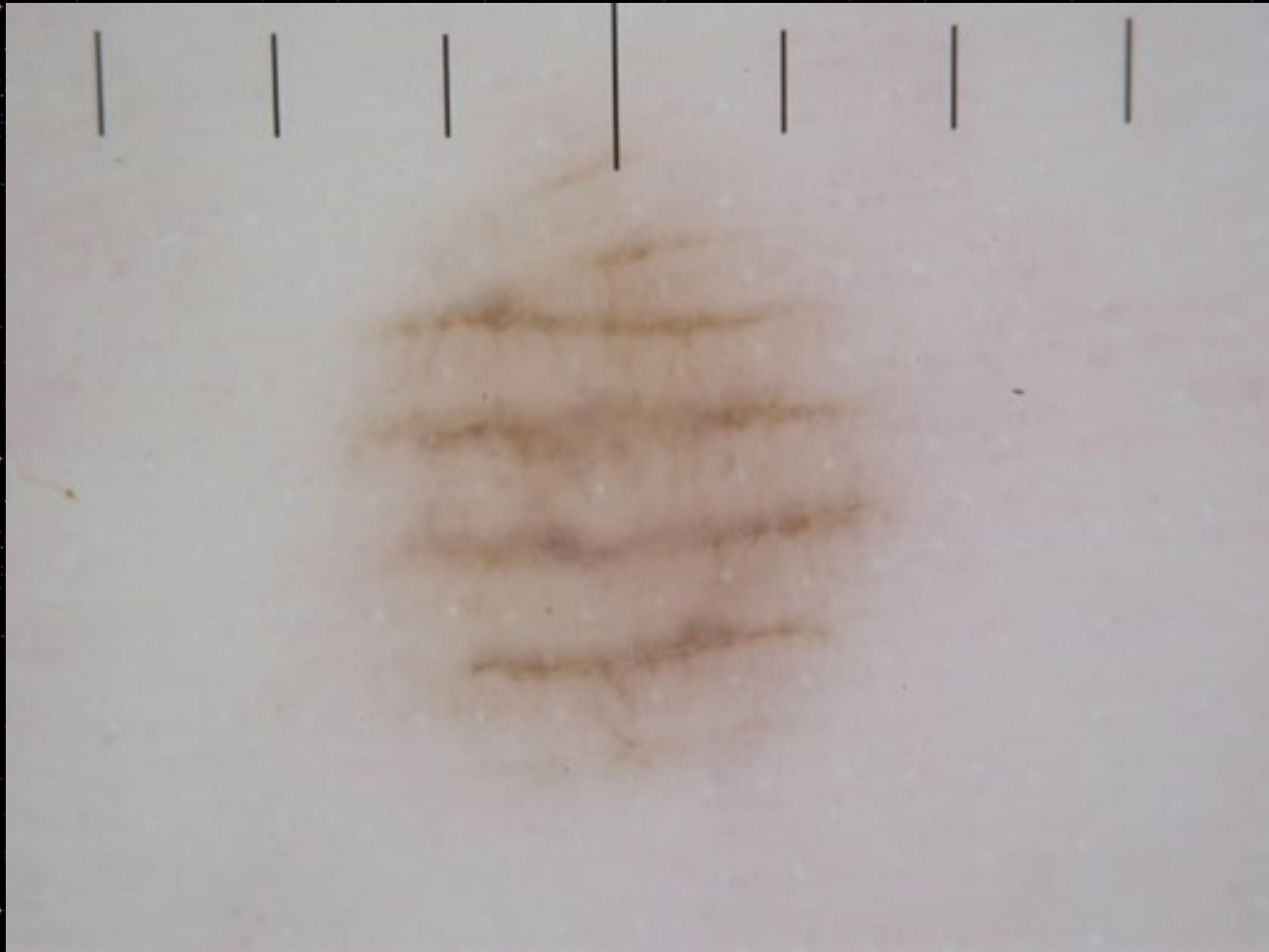
Benign naevi— diffuse reticular pattern with peripheral globules



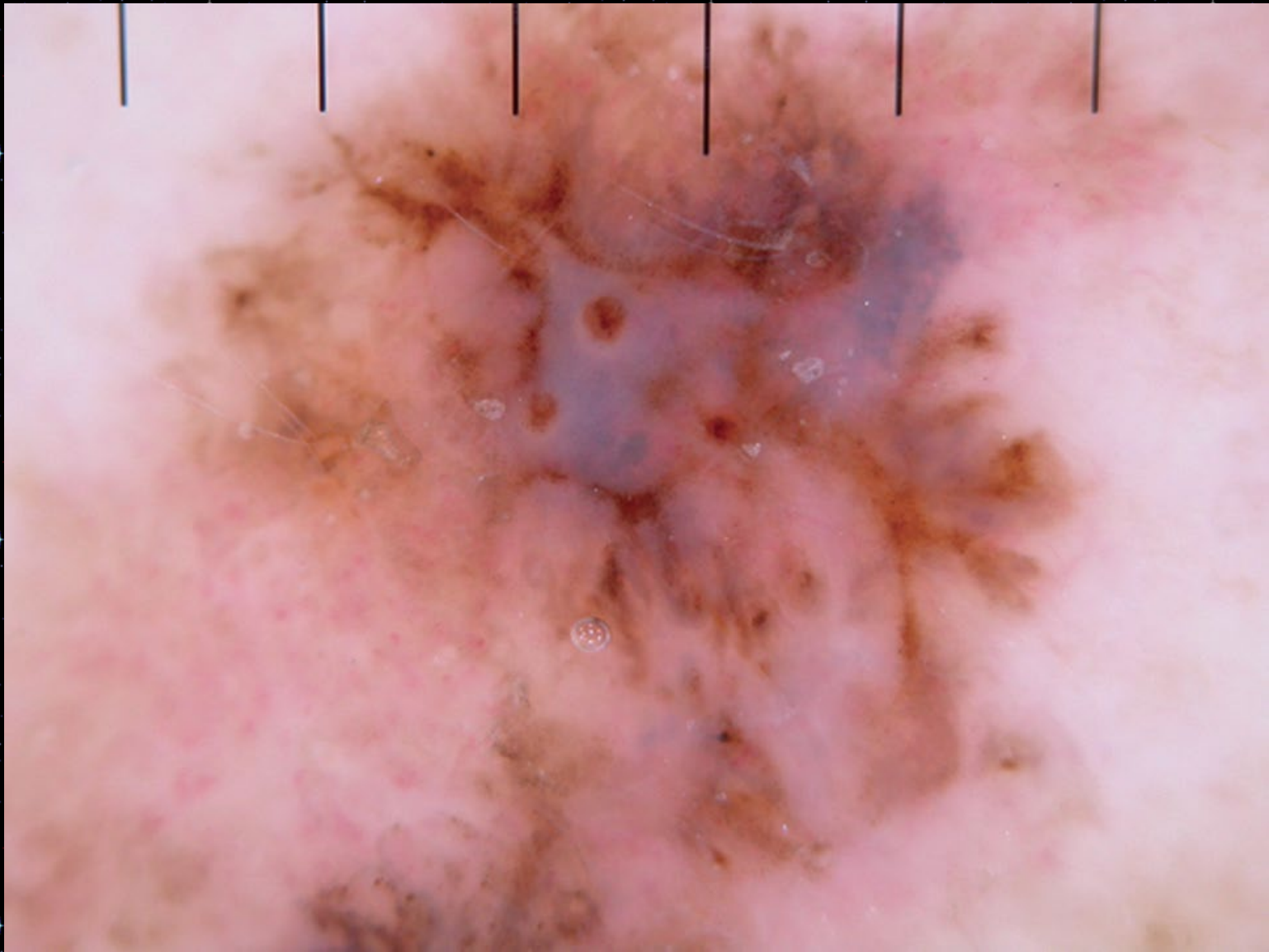
Benign: melanocytic naevus with brown reticular pigmentation



Melanoma –
eccentric reticular pattern, blue veil, asymmetric dots and globules



Benign Acral naevi – pigment in *furrows*.



Melanoma –
asymmetric globules, blue veil, whitish regression structure



Mucosal
melanomas



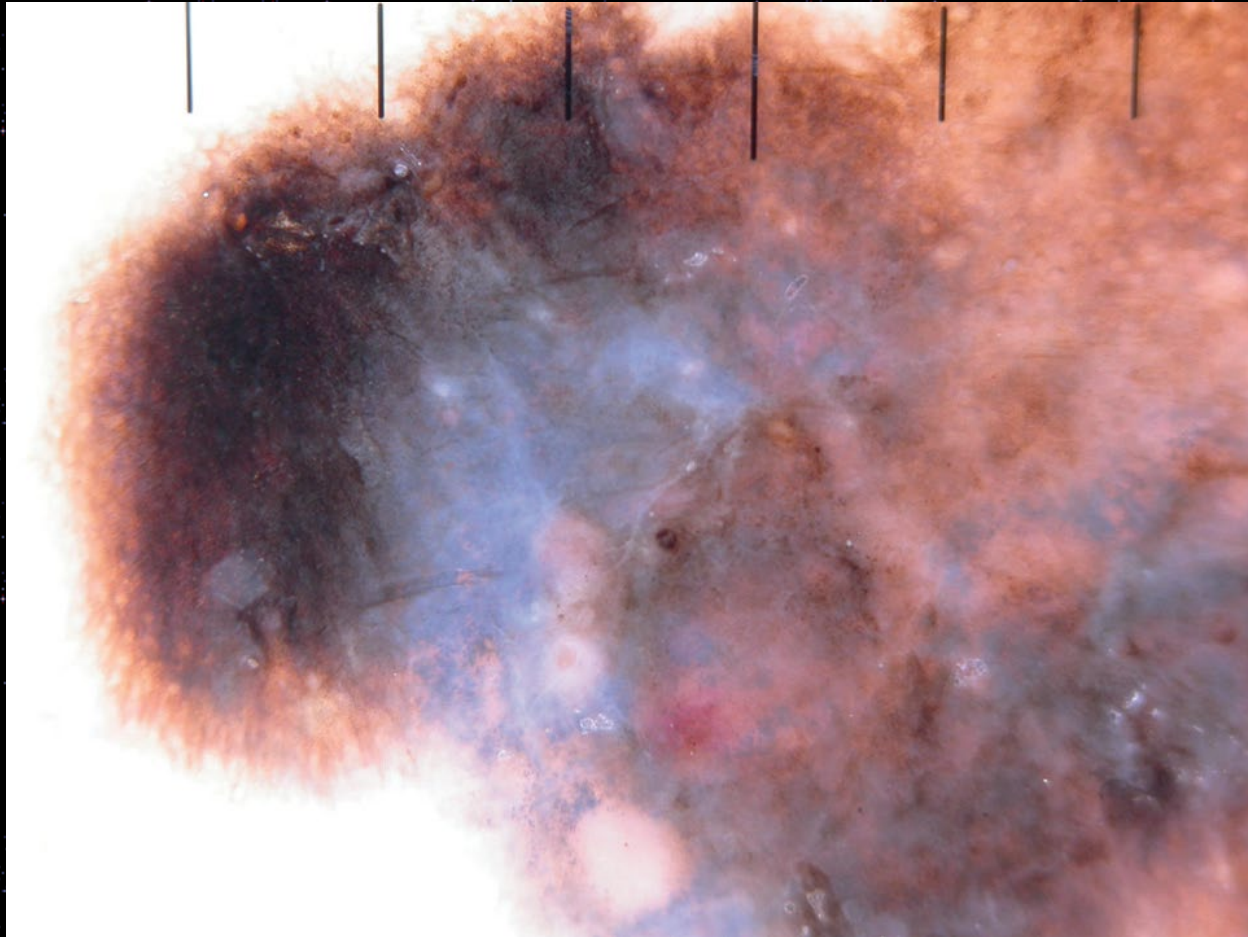


Benign Homogeneous naevi

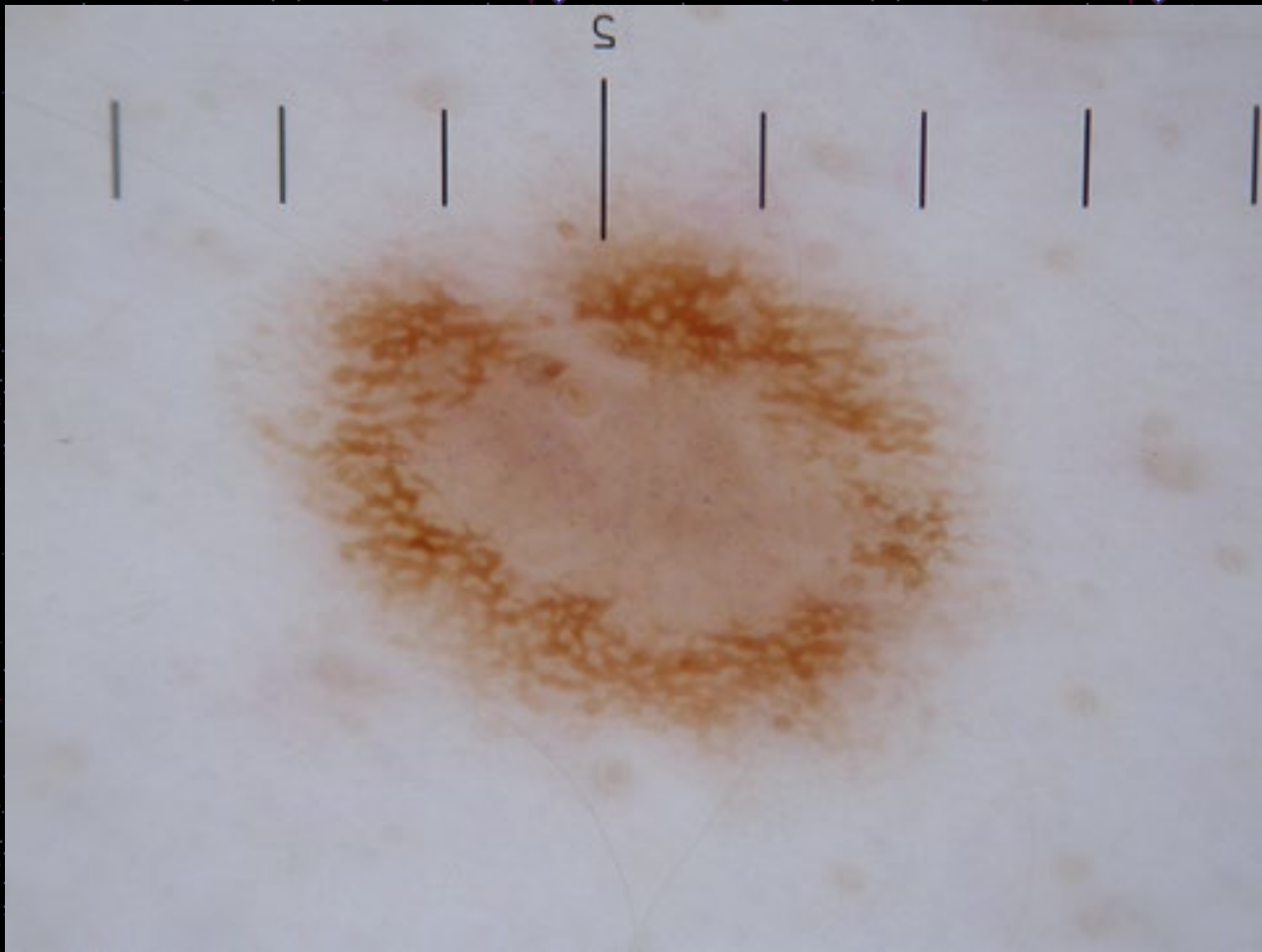
**Hairs growing out of a mole.
Benign or malignant?**



Benign congenital melanocytic naevus



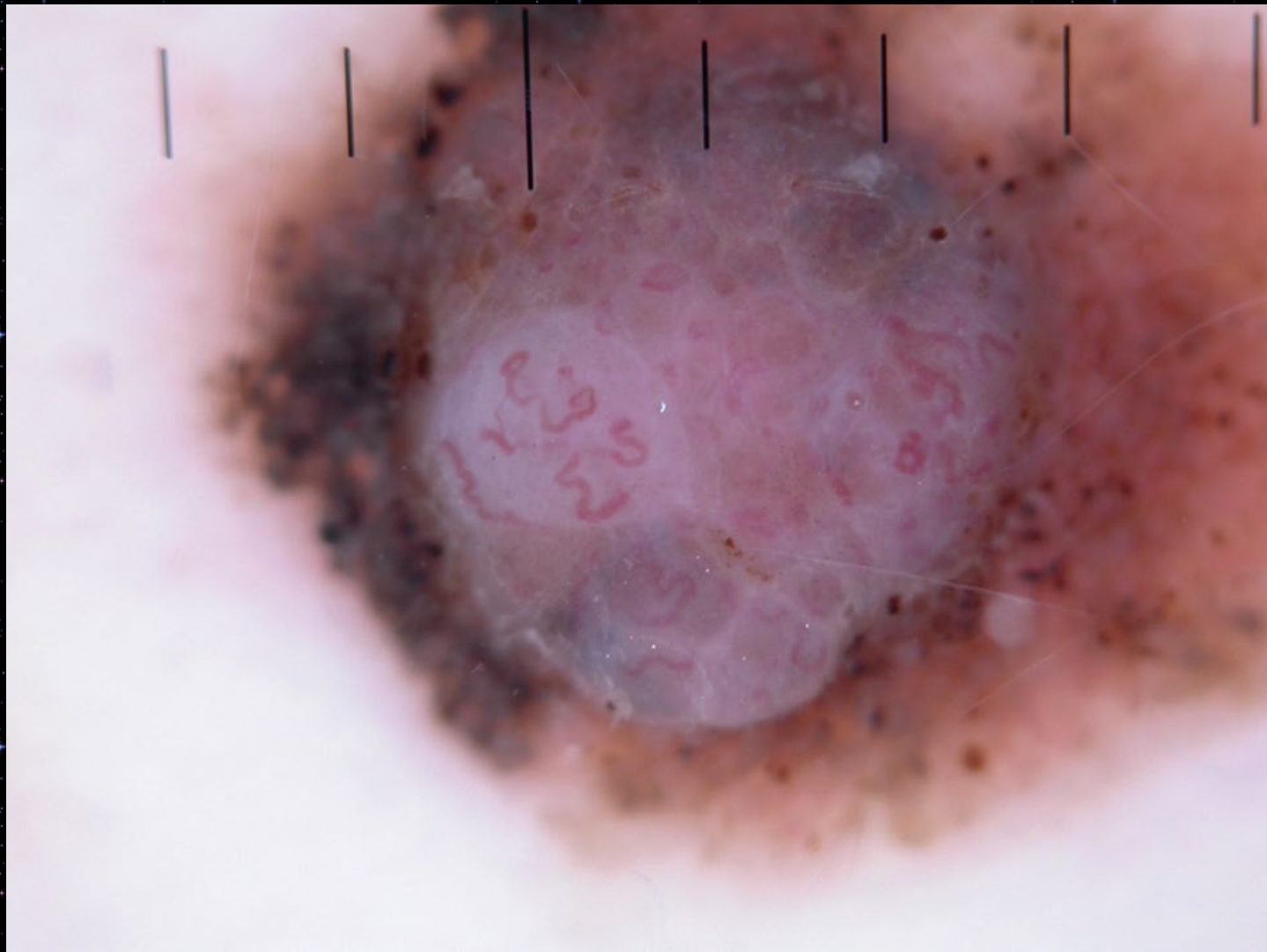
**Melanoma –
regression structure, blue veil, asymmetric network**



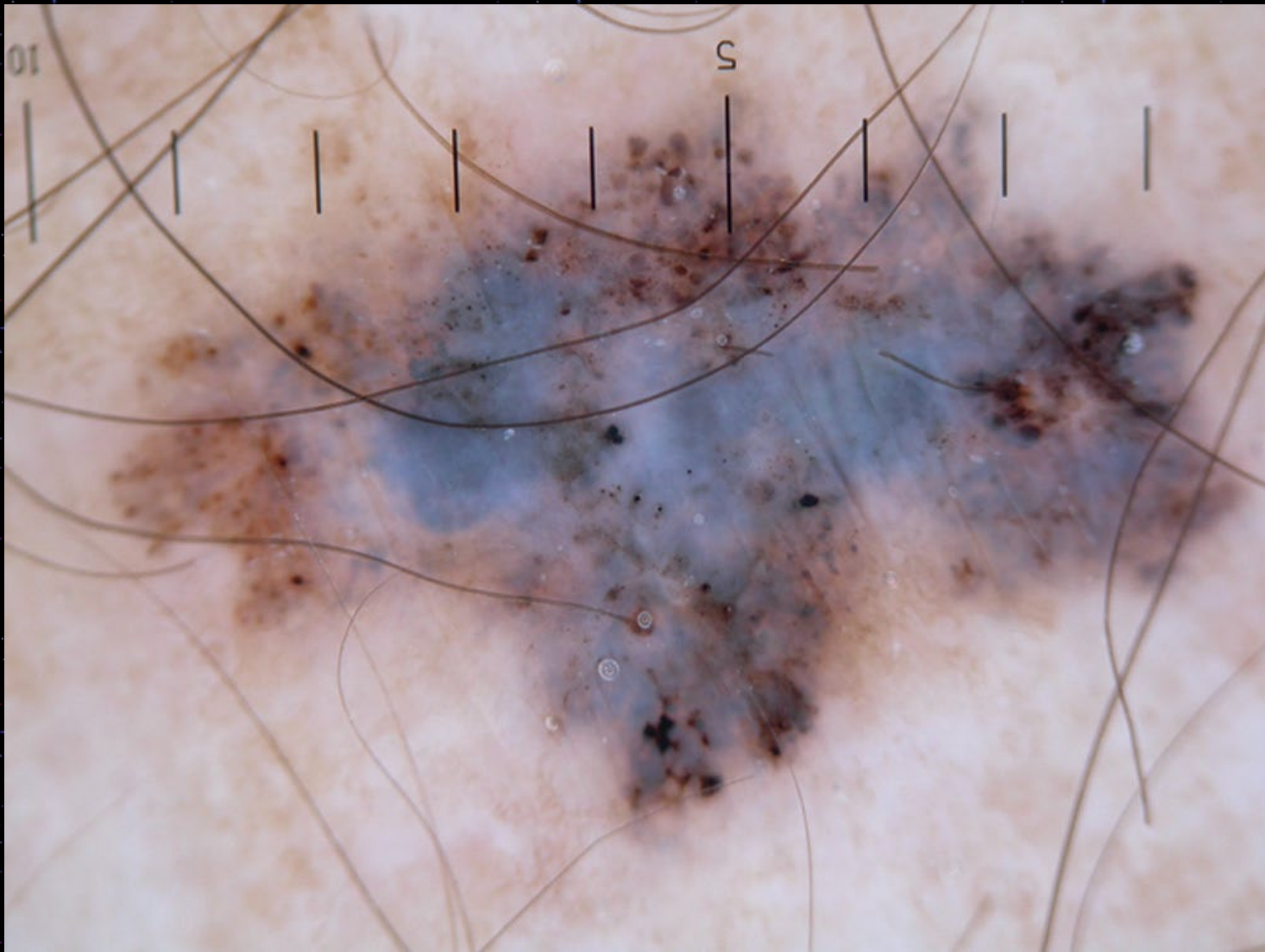
Benign – Peripheral Reticular with central hypopigmentation



Melanoma
Atypical pigment network



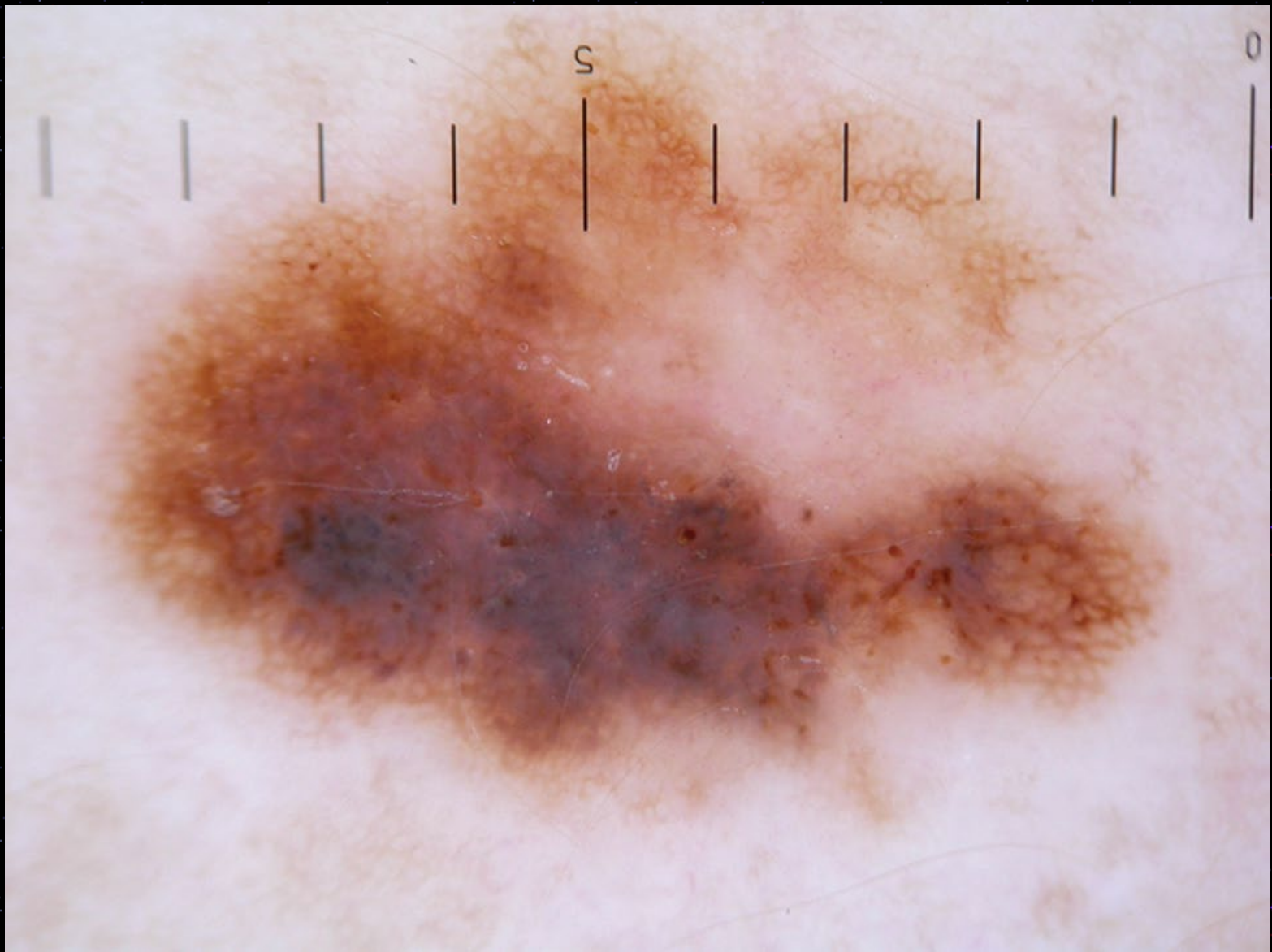
**Melanoma —
asymmetric globules, atypical vessels, blue/white veil**



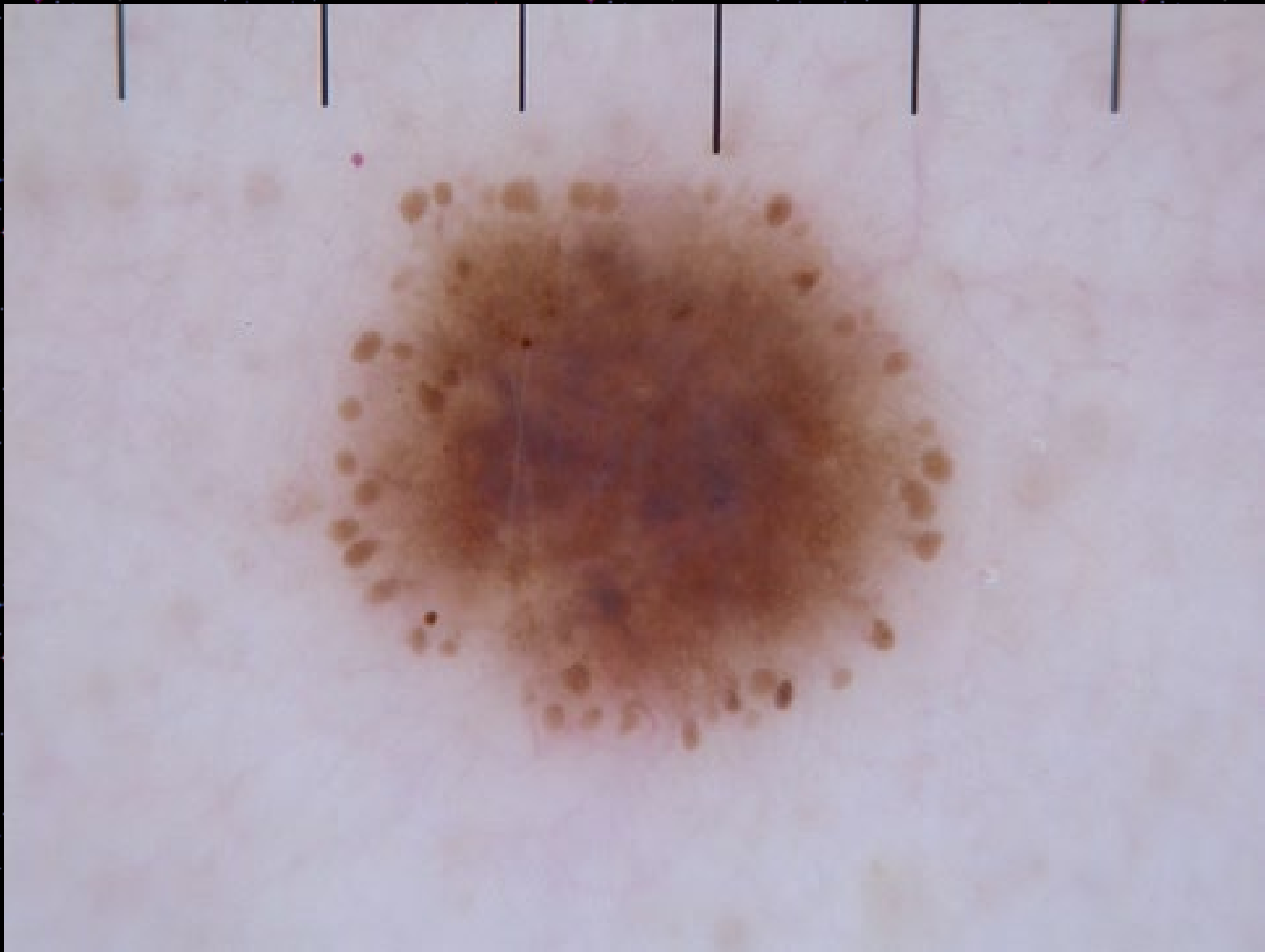
**Melanoma –
asymmetric globules, regression structure, blue veil**



Benign melanocytic naevus



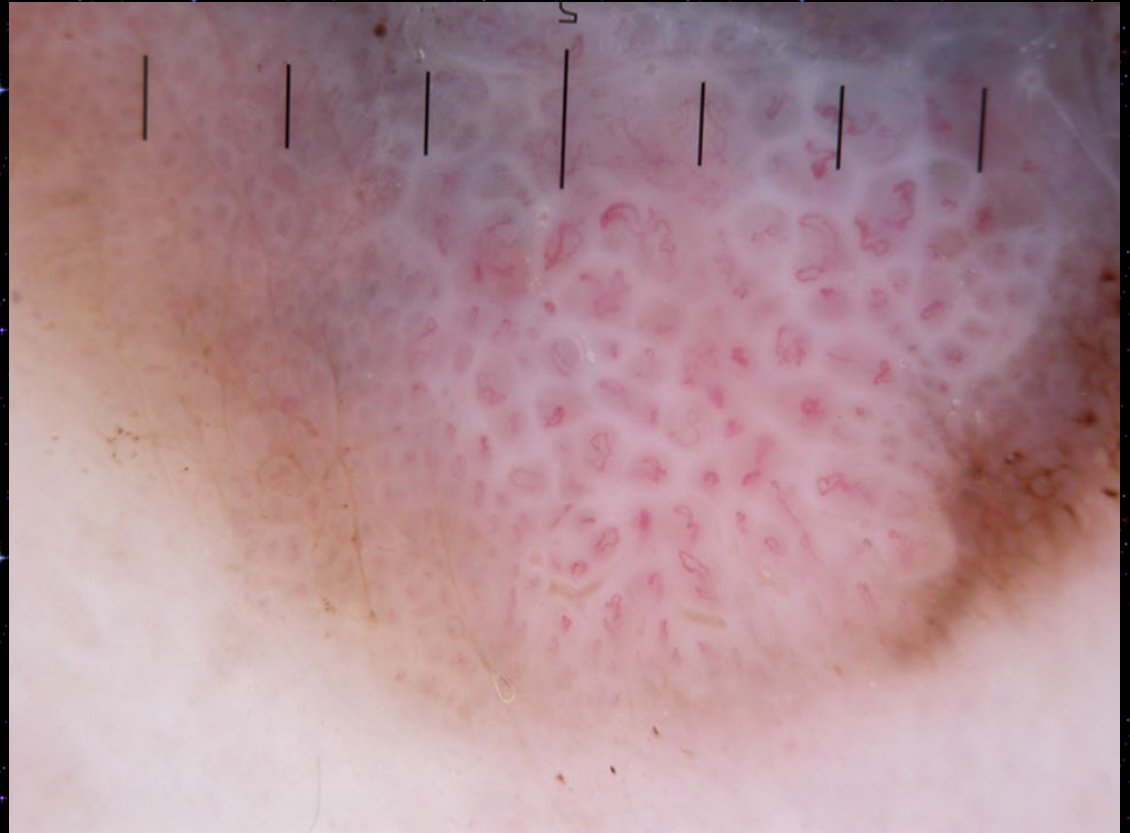
**Melanoma –
regression structure/white, blue/white veil,
atypical eccentric network.**



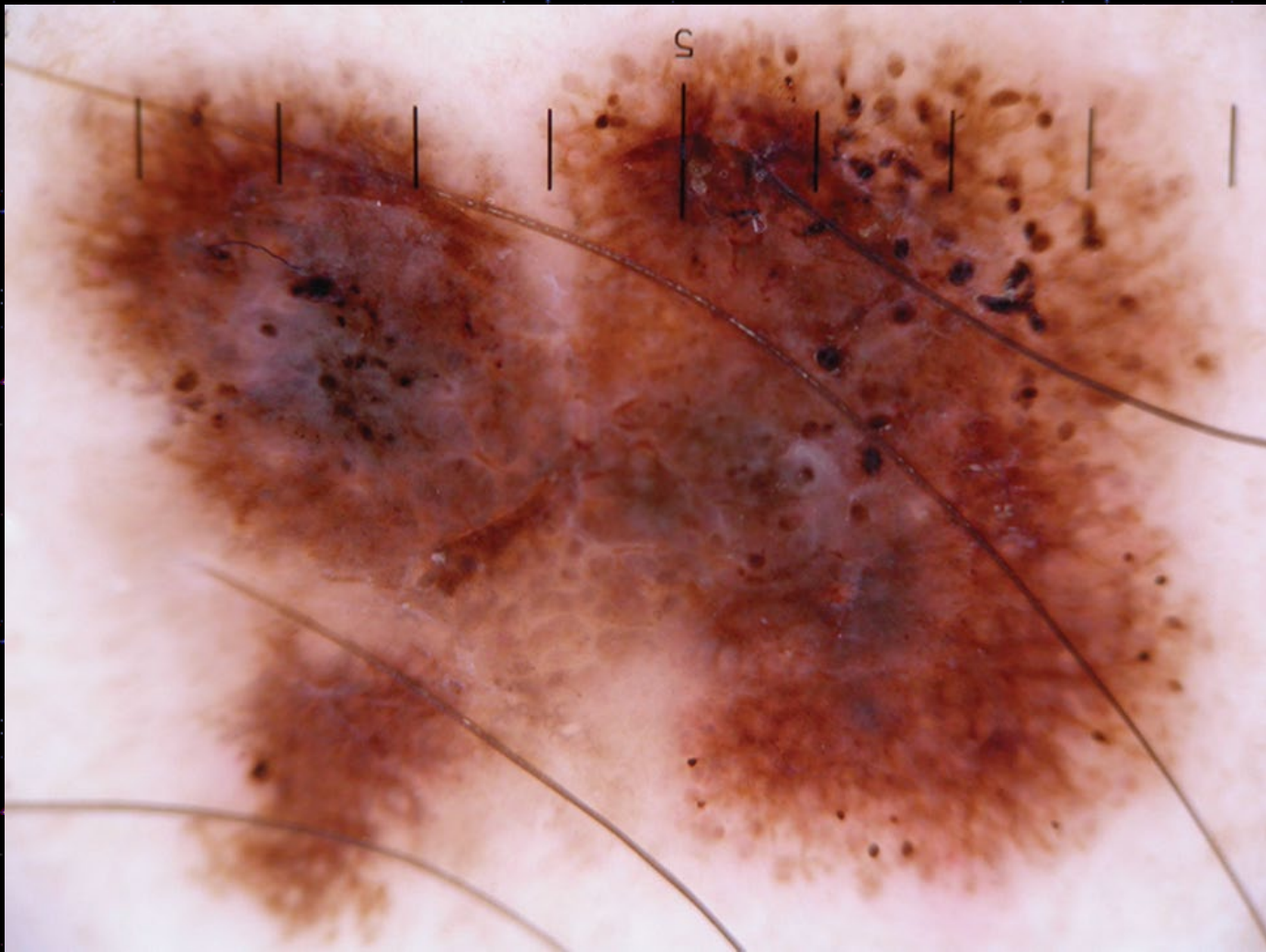
Benign – globular homogeneous pattern



Benign – Seborrheic keratosis



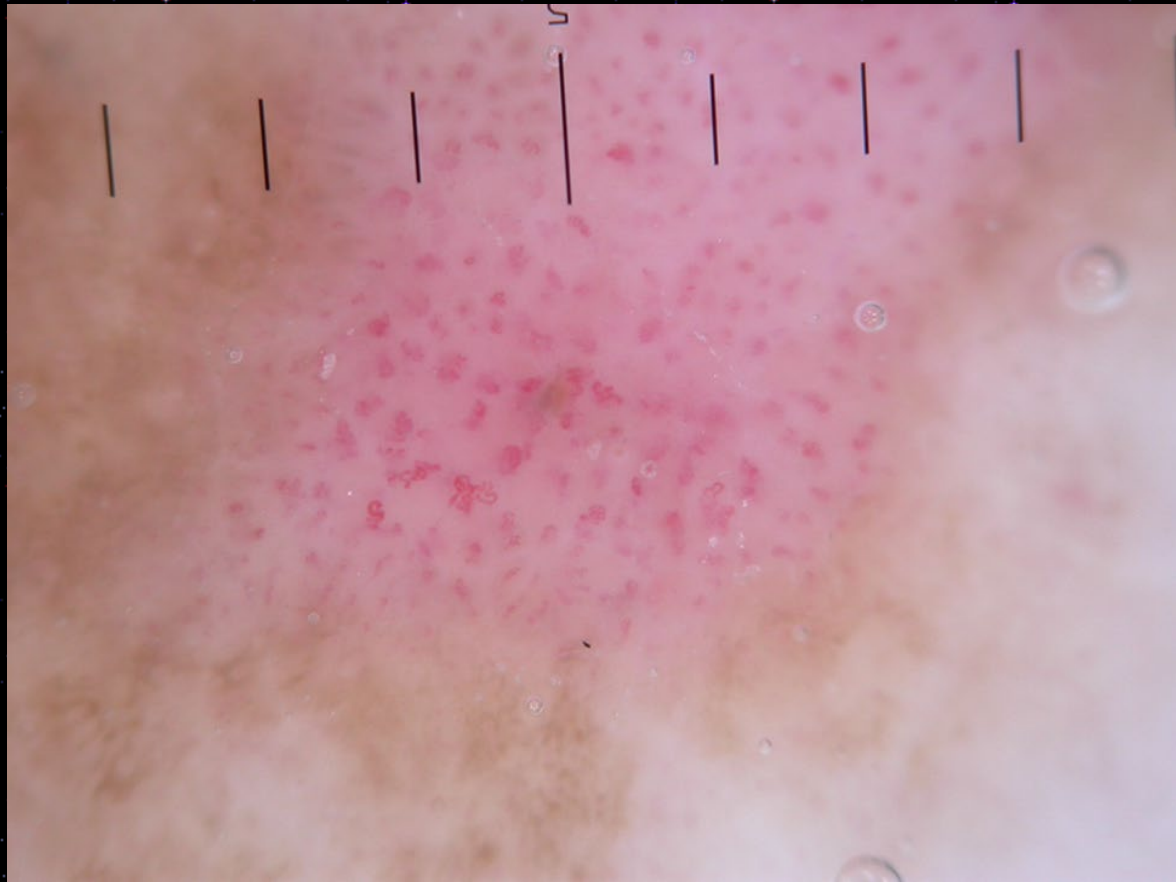
**Melanoma –
regression structure, atypical vessels**



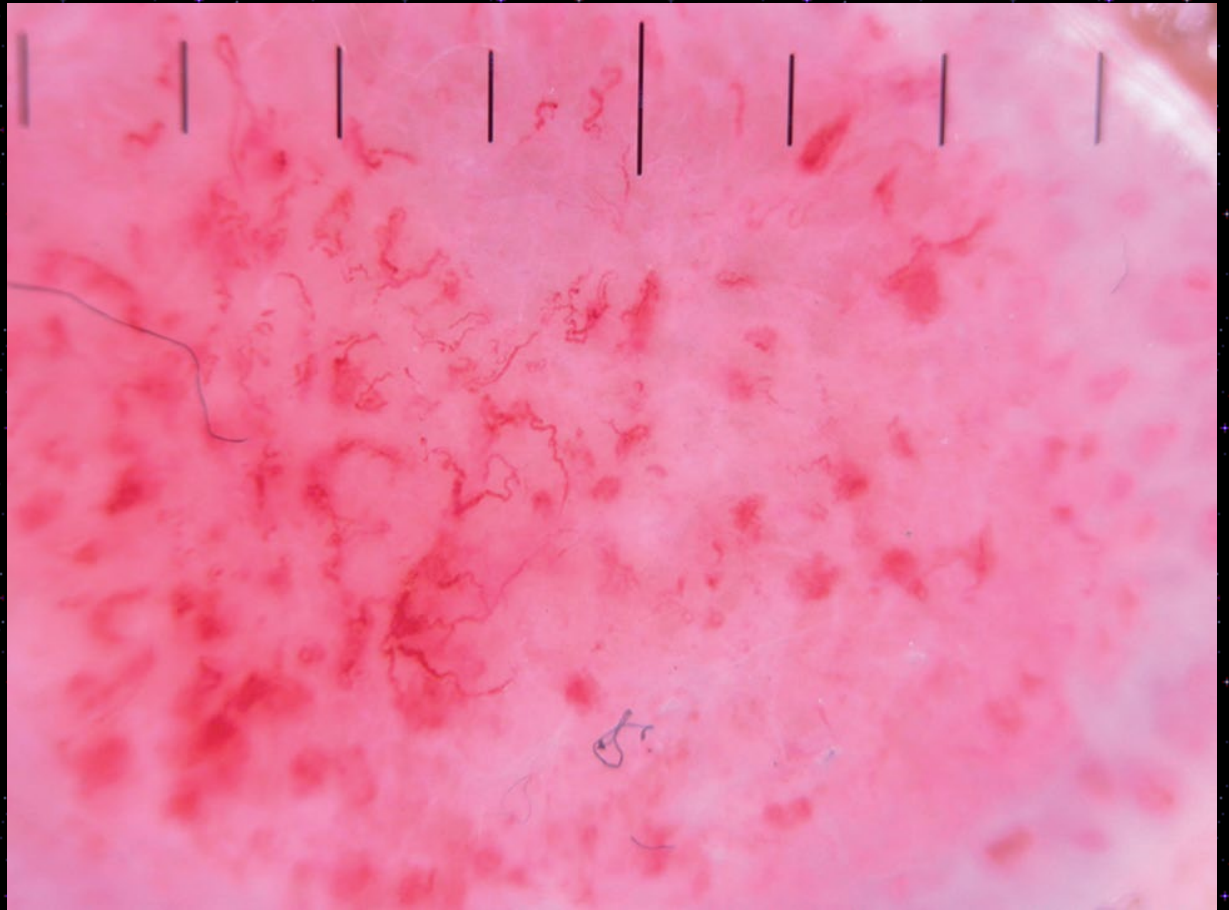
**Melanoma –
irregular dots and globules, asymmetric, blue veil**



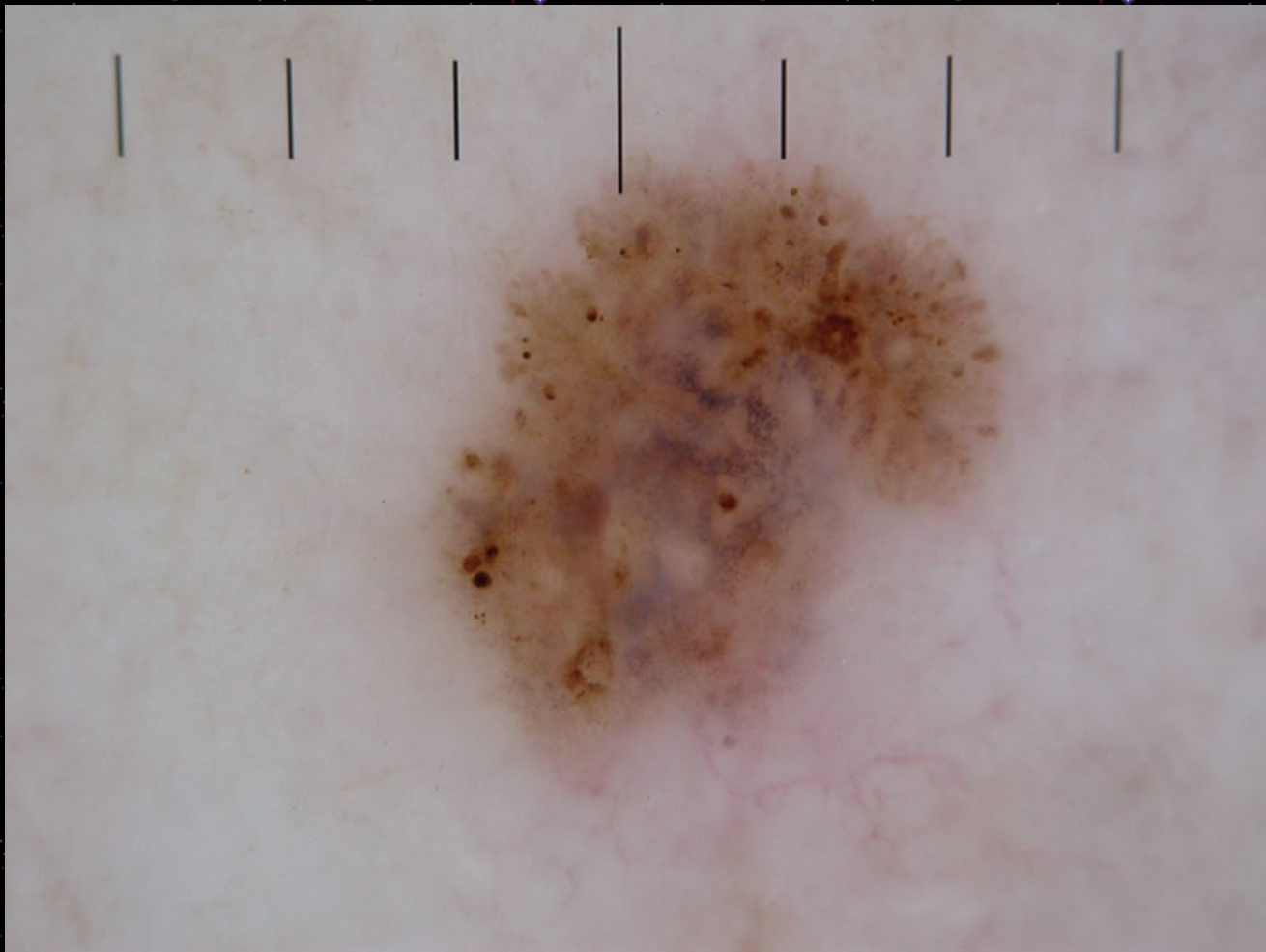
Benign Naevus



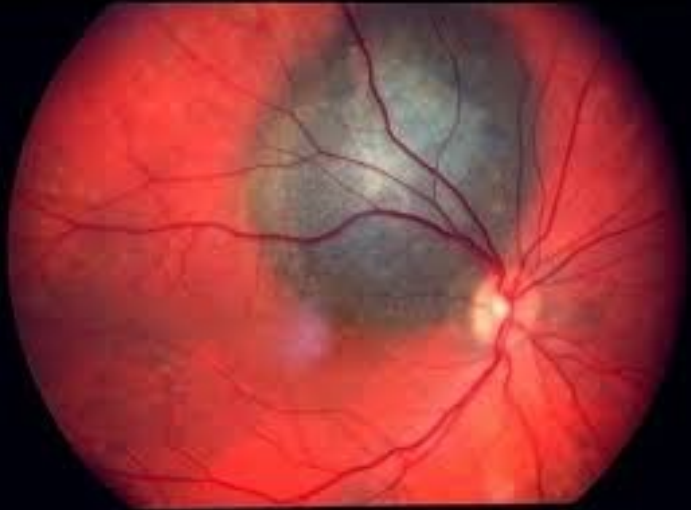
**Melanoma –
atypical eccentric located vessels**



Amelanotic nodular Melanoma



**Melanoma –
irregular dots and globules and regression**



Retinal melanomas



**Pigmented
Basal Cell
Carcinoma**

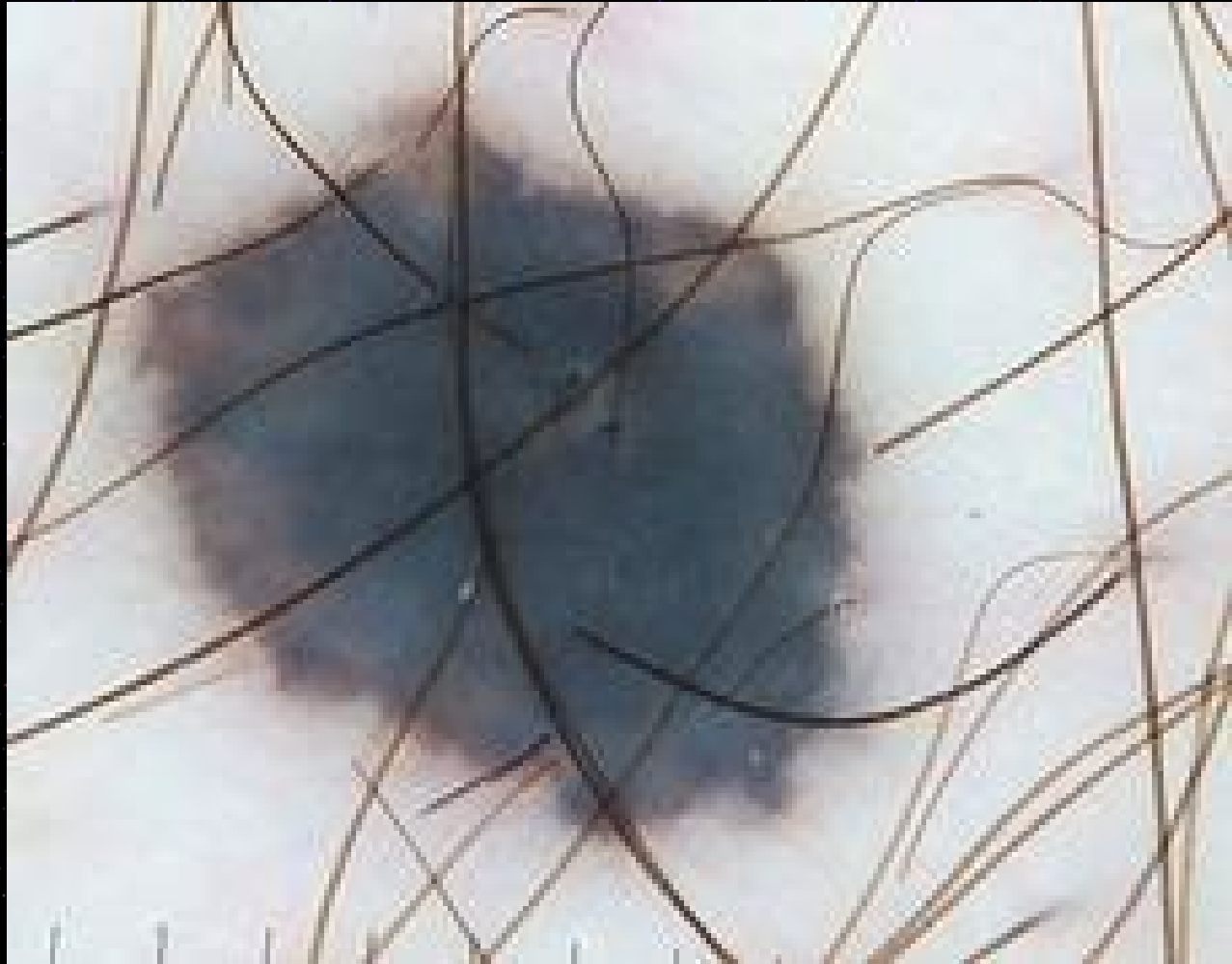




Benign – Lentigo (Café-au-lait)



Melanoma – invasive.
Asymmetric dots, mild central regression.



**Benign –
Homogenous blue-white veil of a blue naevus**



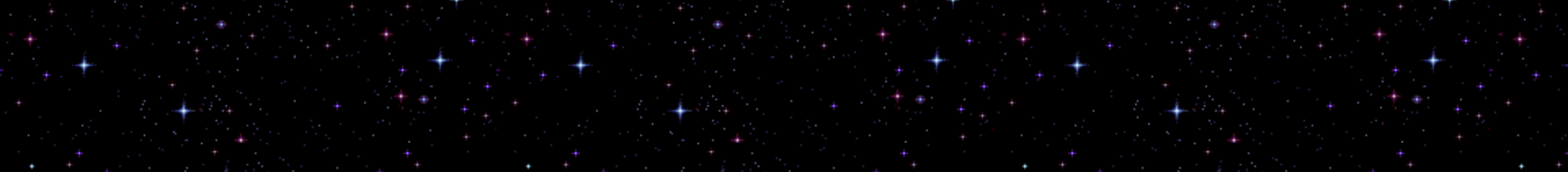
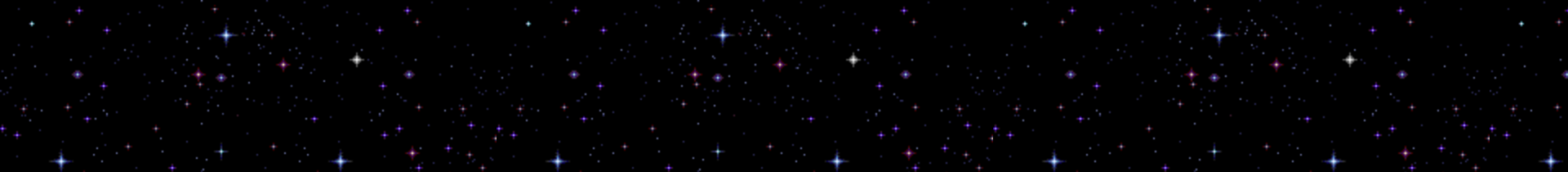
Acral melanoma – pigment is on the ridges.



Melanoma – atypical pigment, radial streaming, pseudopods, +/- asymmetric blotches and hint of blue veil at 2 o'clock



**Melanoma –
asymmetric pigment, early central regression.**



**Just when you figure
you have it cased!**

Atypical Melanomas



Spindle Cell Melanoma.



Amelanotic Melanoma

Amelanotic Melanoma

Pink lesion beside pale brown melanin

Look for 'dot' vessels and polymorphic

Often raised.



Summary

1. Remember the 7 signs of melanoma (I had a printed copy on the wall of my exam room!)
2. Use the App.
3. When in doubt confer with colleagues!
4. Biopsy?

The END...
of Melanoma Slides

Questions?

The Models

Dermoscopy

Part 2

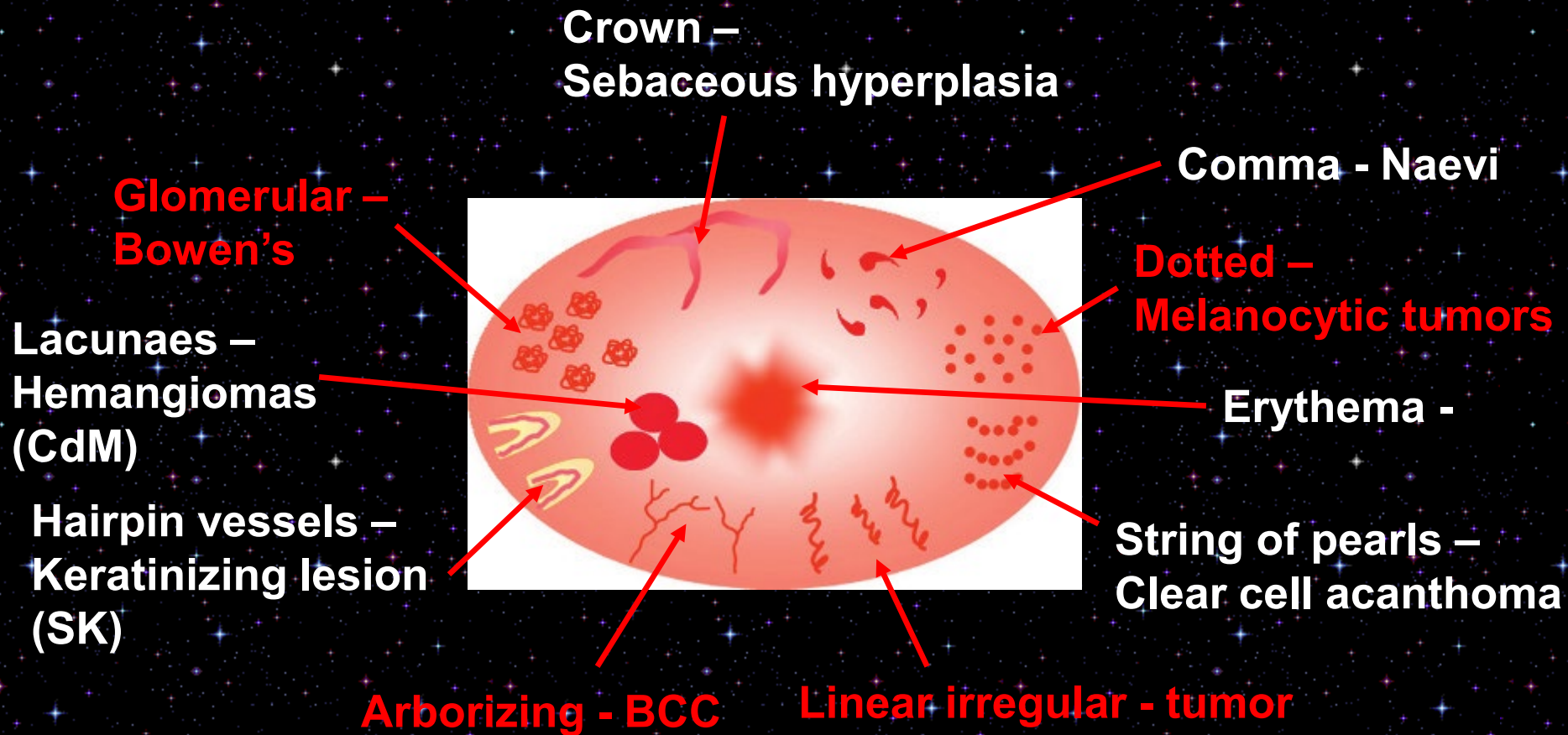
BCC, SCC and other lesions

Disclaimer

**This will NOT cover all
dermatoscopic skin lesions.**

**When in any doubt,
confer, refer or biopsy.**

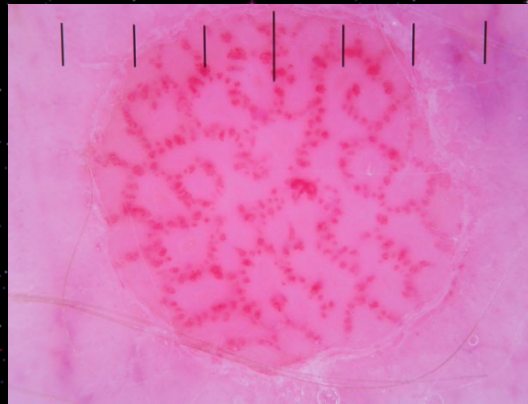
Vessels in Skin Tumors



Vessels in Skin Tumors - benign



Comma (naevi)



**String of pearls
(clear cell acanthoma)**



**Crown
(sebaceous hyperplasia)**

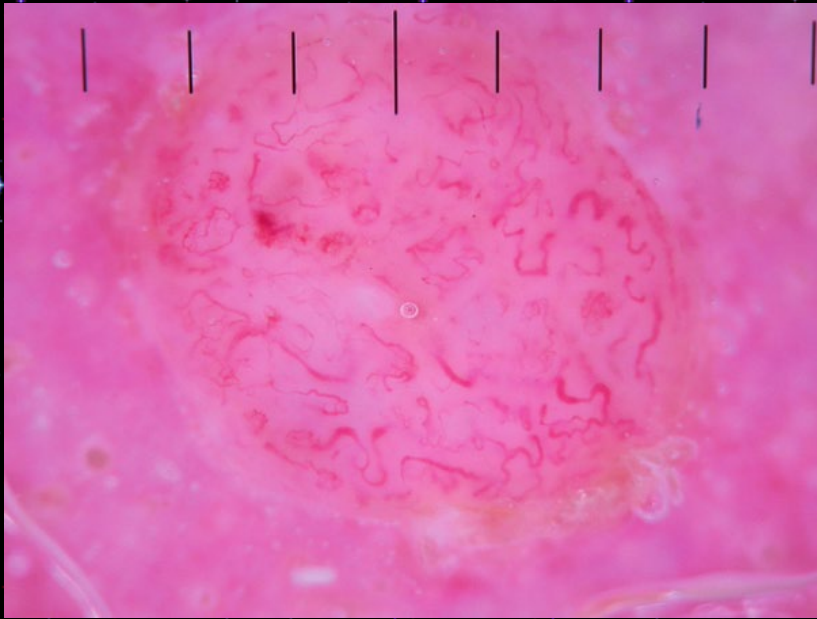


**Lacunae
(hemangiomas)**

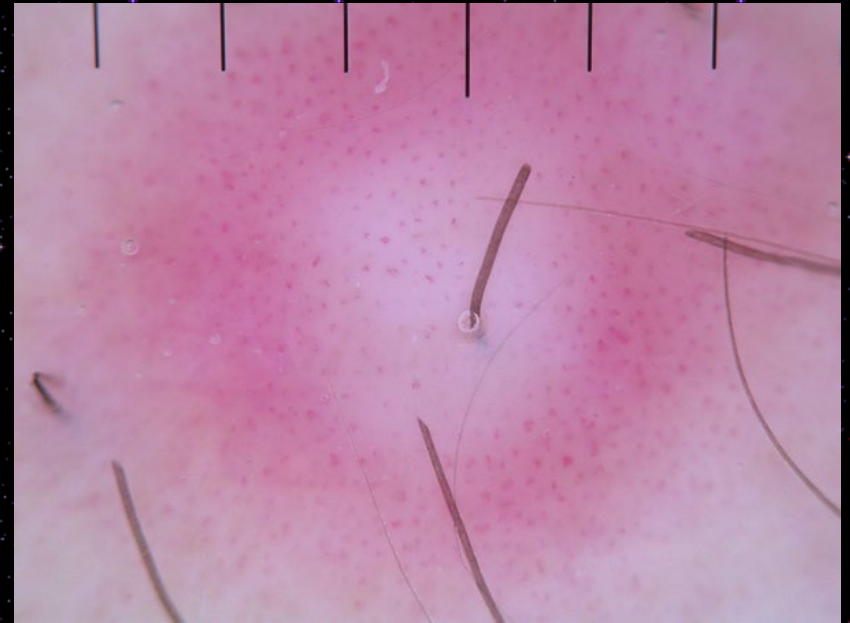
**Hairpin
(keratinising lesion)**



Vessels in Skin Tumors – ‘BAD’



Linear irregular (tumors)



Dotted (Melanocytic tumors)

Vessels in Skin Tumors – 'BAD'

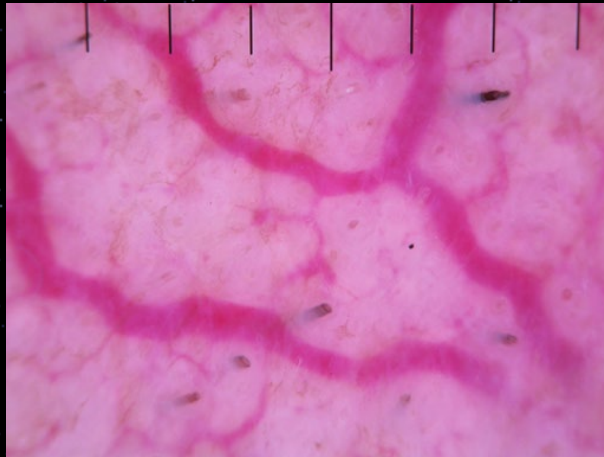


Glomerular
(Bowen's = SCC in situ)

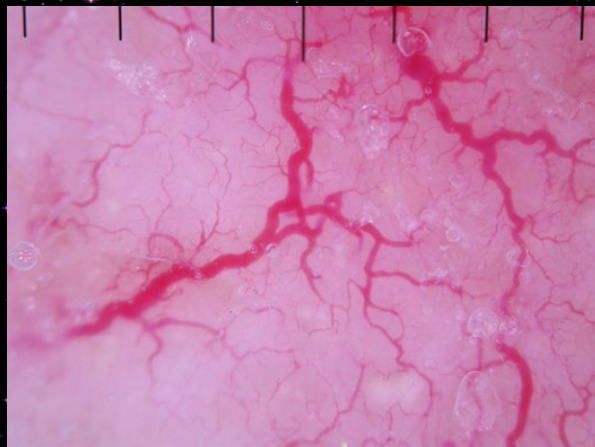


Arborizing (BCCs)

Basal Cell Carcinoma



Chronic
photodamaged skin
with telangiectasia.
Broad arborizing
vessels



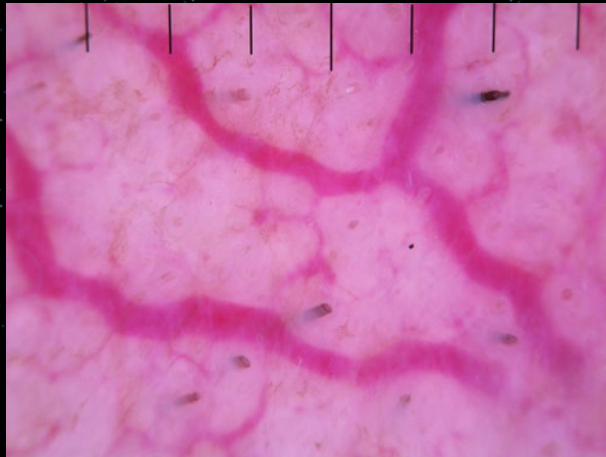
Telangiectasia of BCC
with vessels that are
sharply focused and
branch to fine terminal
vessels – “lightning”

Spider Nevi and Telangiectasia

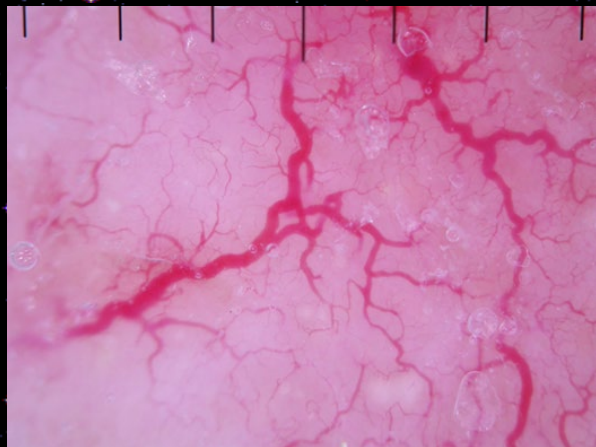


Both blanch with pressure – BCC don't fully blanch

Basal Cell Carcinoma

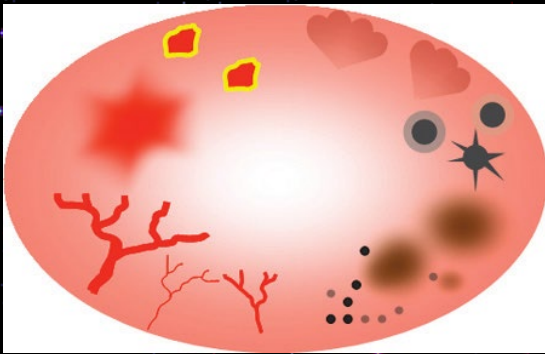


Chronic
photodamaged skin
with telangiectasia.
Broad arborizing
vessels

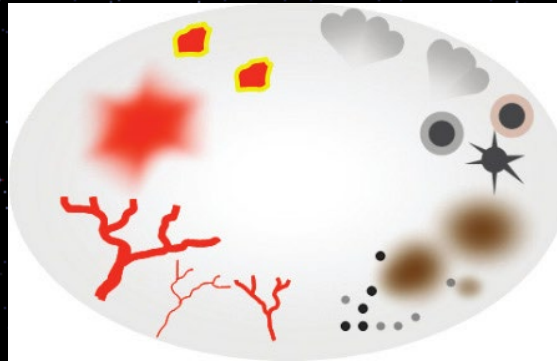


Telangiectasia of BCC
with blood vessels that
are sharply focused
and branch to fine
terminal vessels

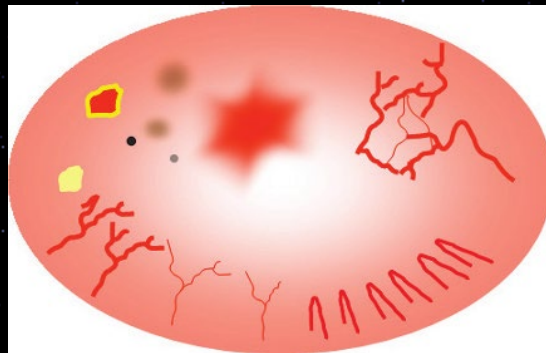
Basal Cell Carcinoma



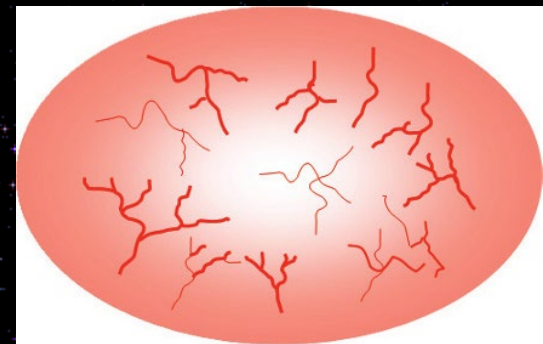
Nodular



Pigmented

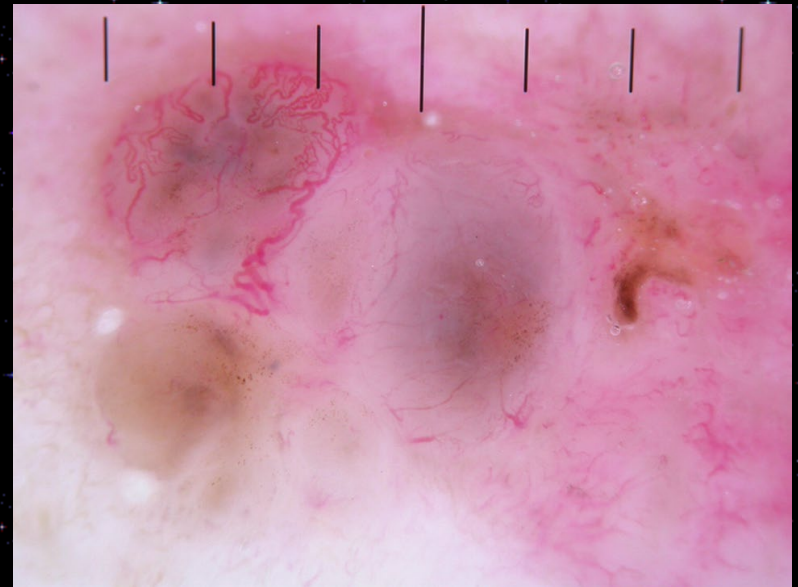
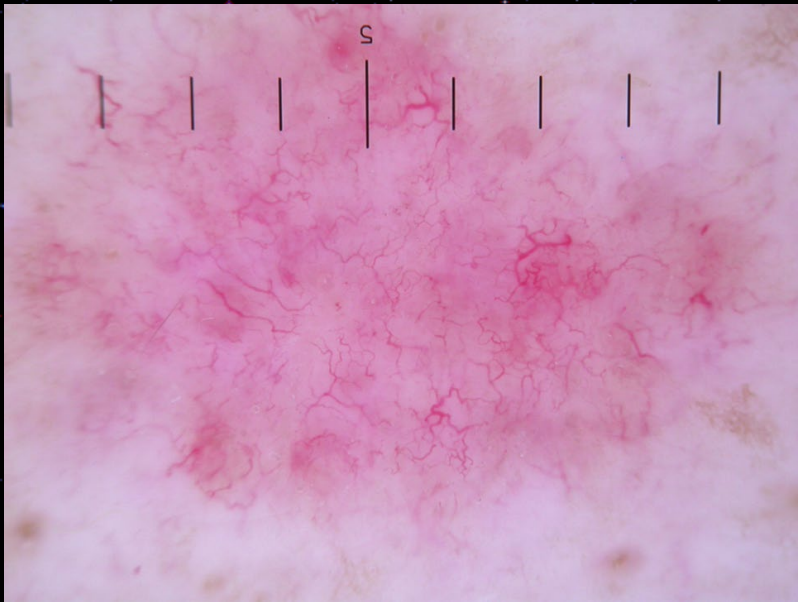


Superficial

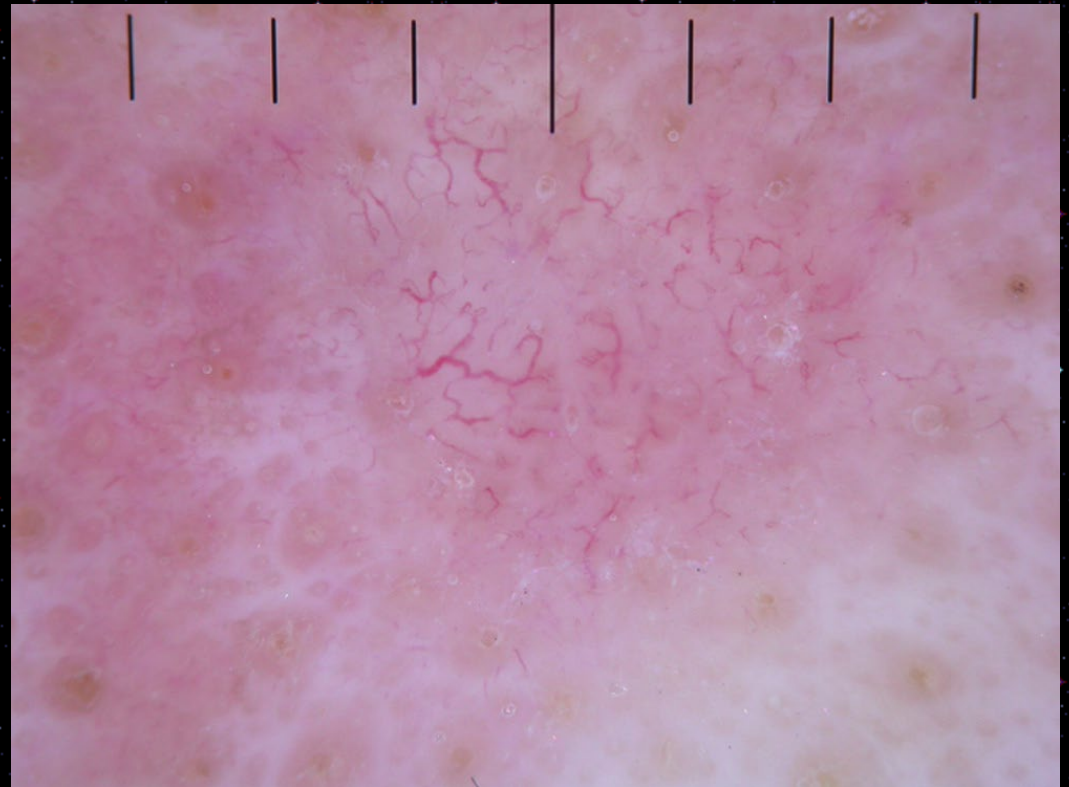


Morphoeic

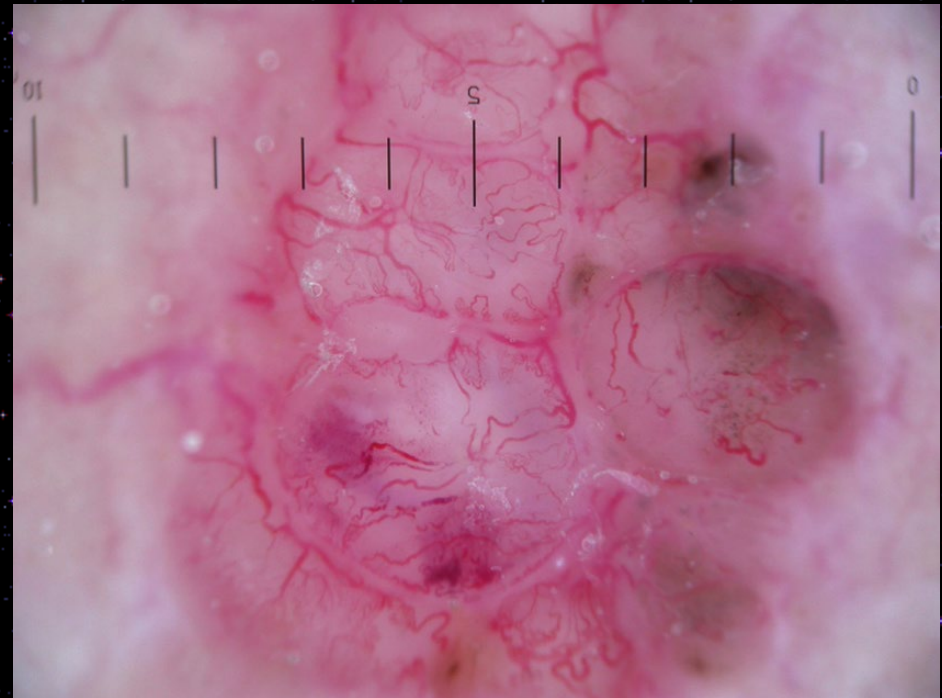
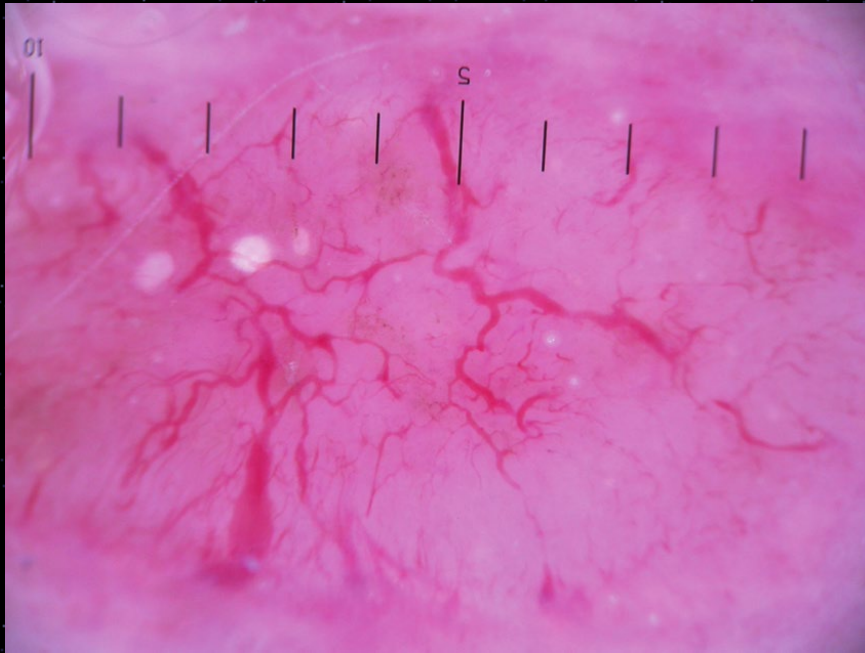
Basal Cell Carcinoma – Superficial



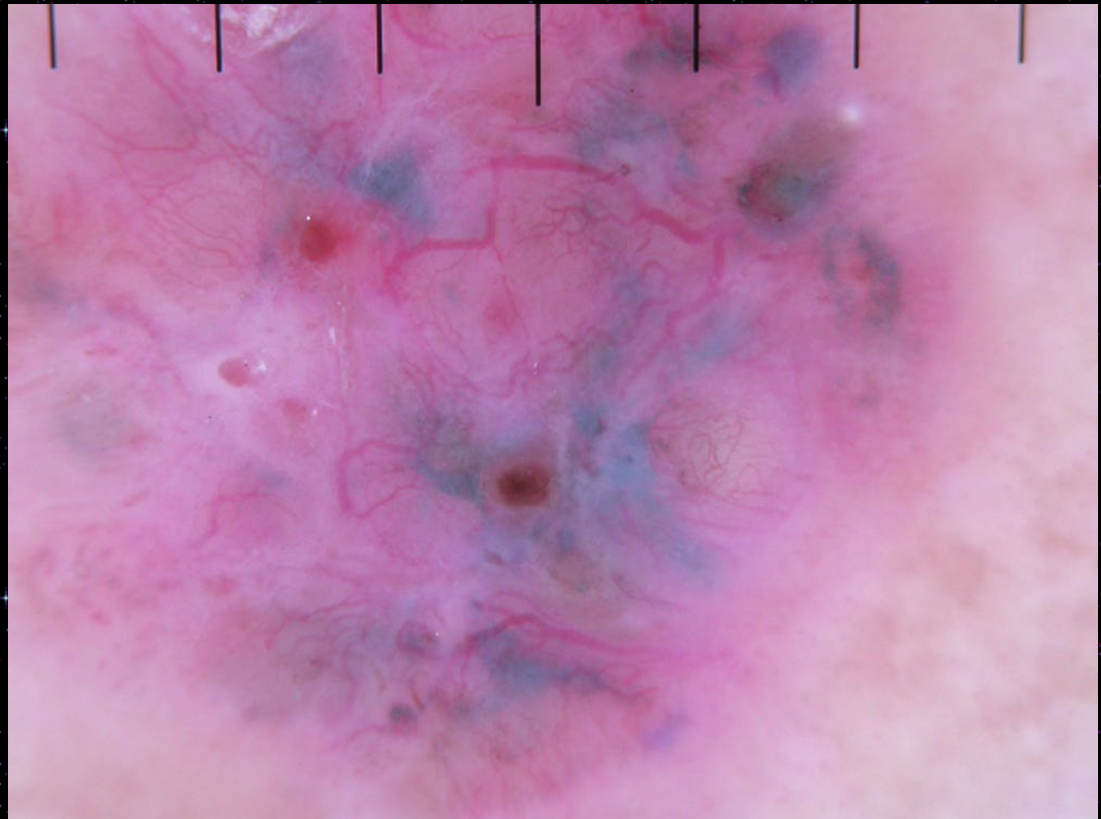
Basal Cell Carcinoma- Morphoeic



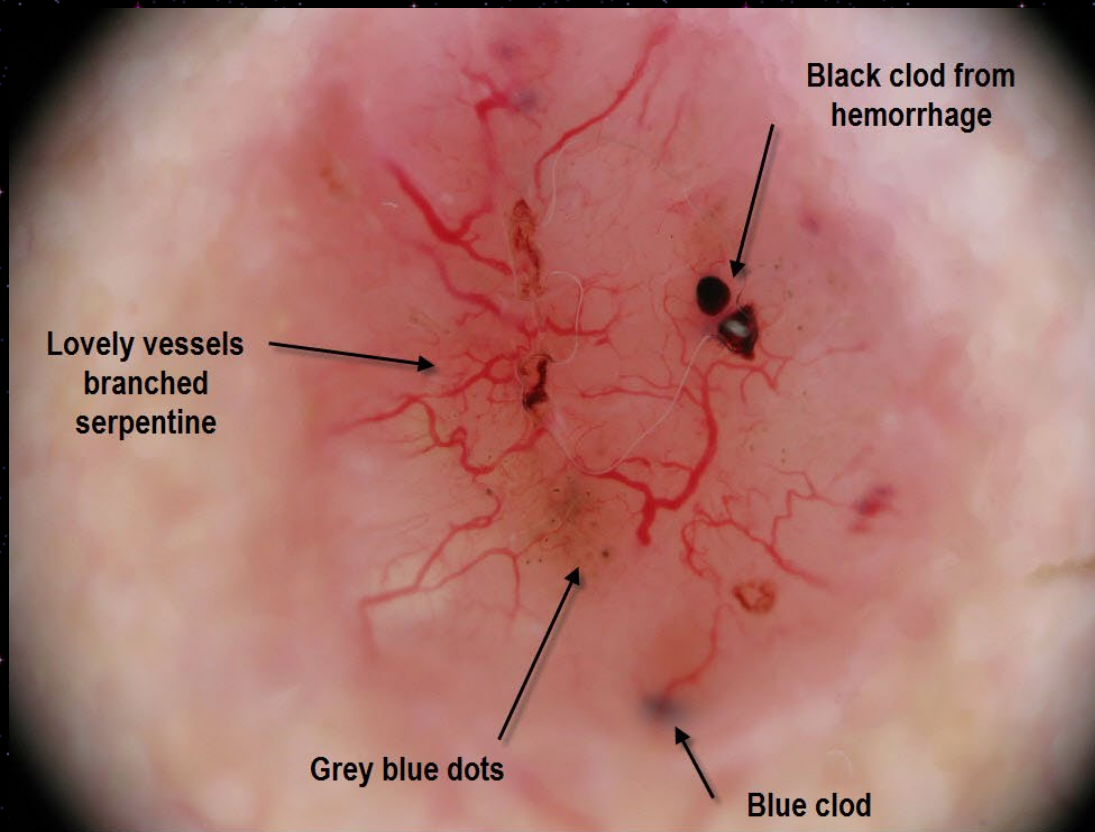
Basal Cell Carcinoma - Nodular



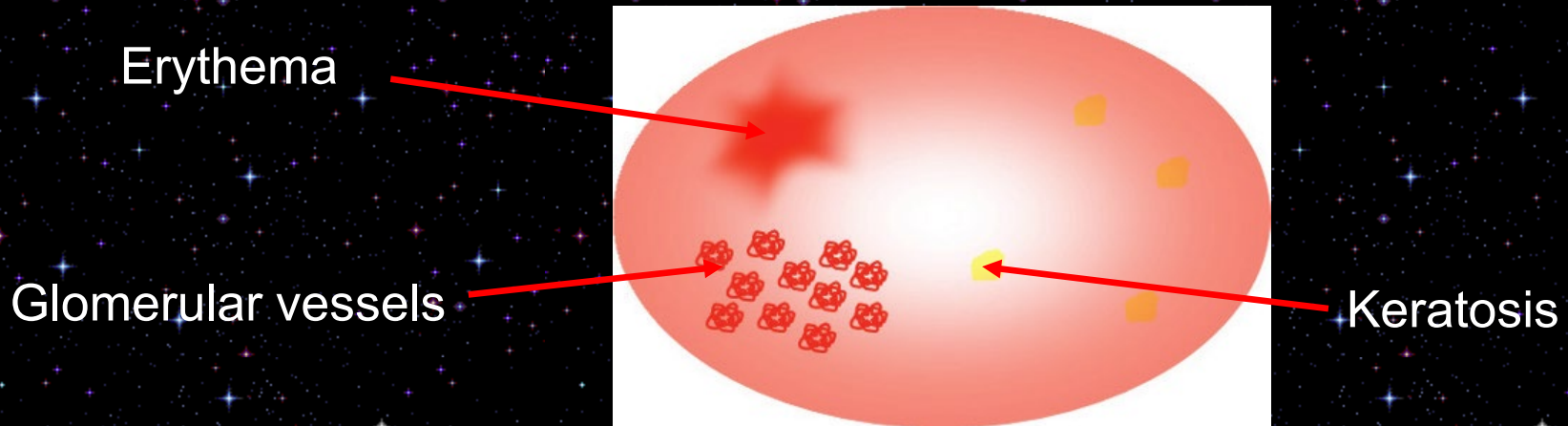
Basal Cell Carcinoma - Pigmented



Basal Cell Carcinoma



Bowen's Disease



**Often have glomerular vessels.
Scale and keratosis is also a feature.
This is Squamous cell carcinoma in situ.**

Bowen's Disease



Bowen's Disease



Glomerular vessels

Bowen's Disease



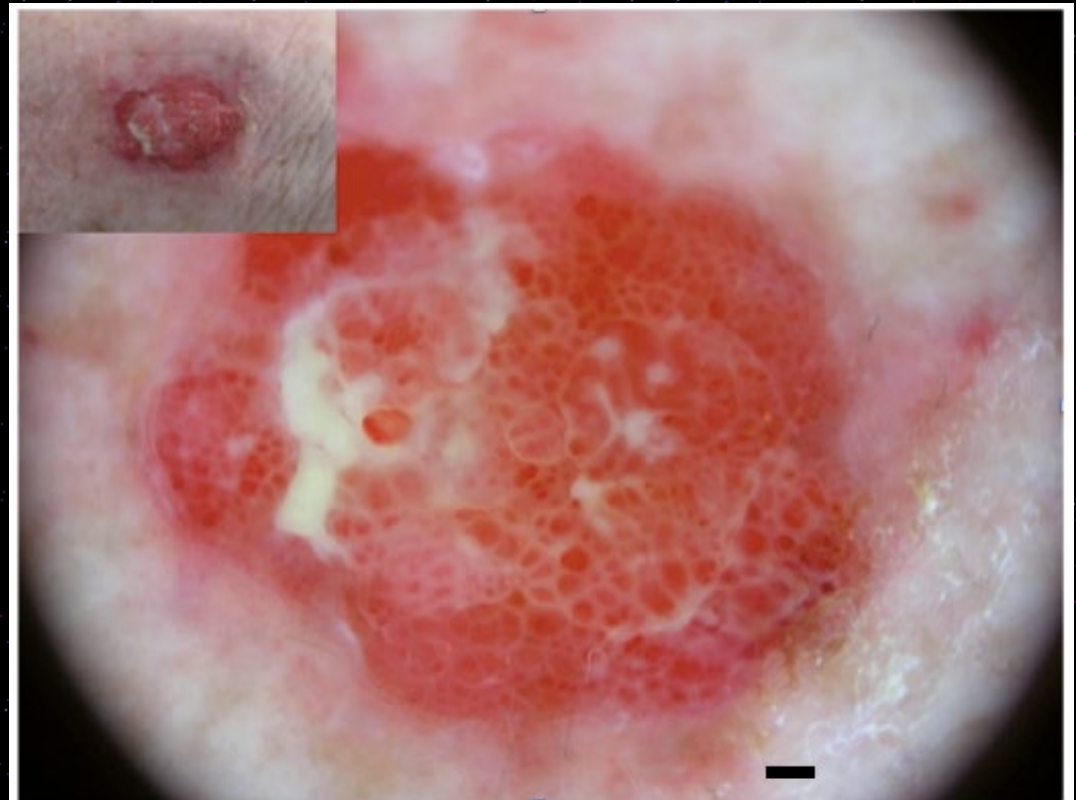
Squamous Cell Carcinoma

**SCC can be difficult to diagnose
with dermoscopy**

Common features:

- Ulceration**
- Keratinization**
- Variable blood vessels**

Squamous Cell Carcinoma

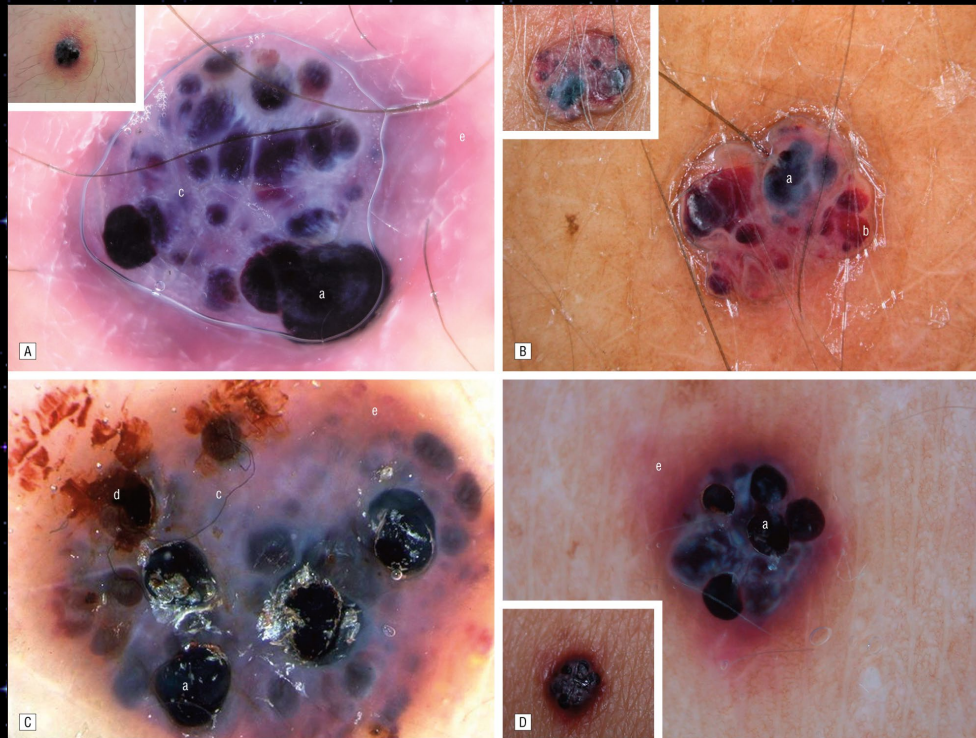


Squamous Cell Carcinoma



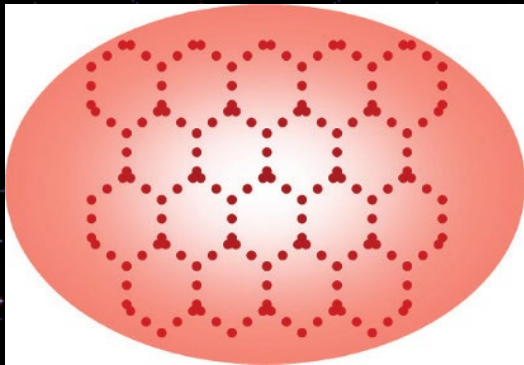
Some Benign Lesions

Angiokeratomas



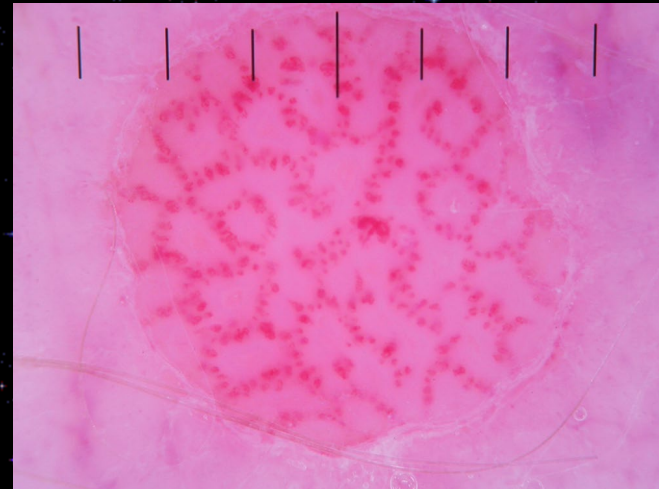
Treatment: Cryotherapy, Electrocautery, Surgery, Laser.

Clear Cell Acanthoma

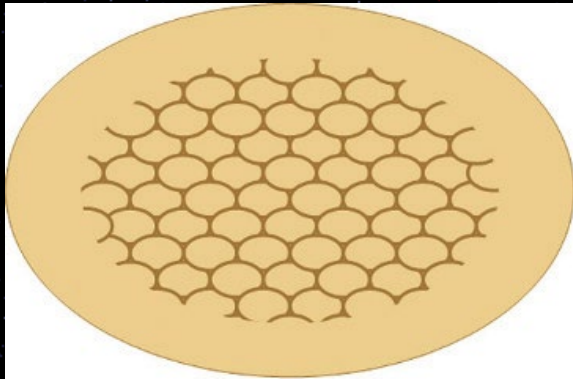


String of pearls vessels

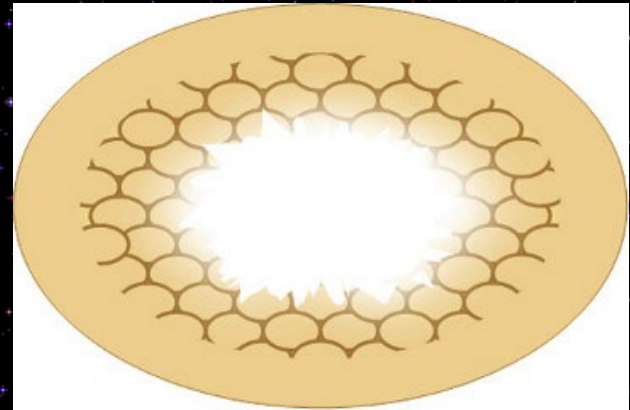
Variant of a seborrheic keratosis with a distinct vascular pattern.
'String of pearls' pattern.



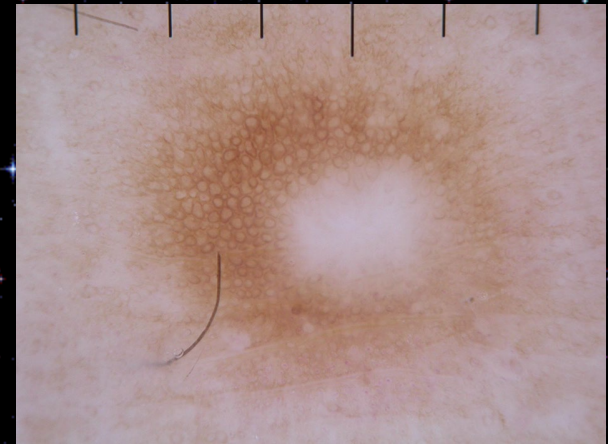
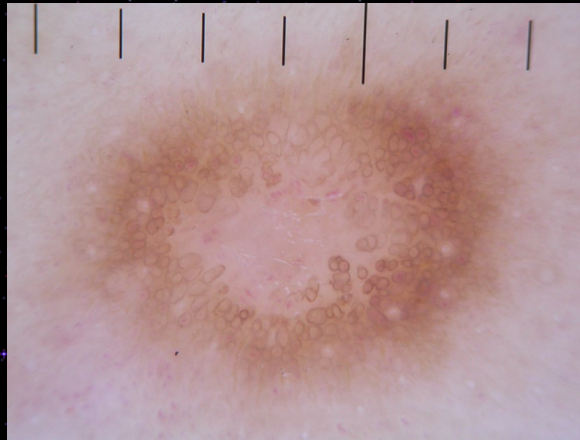
Dermatofibroma



Pseudo-network

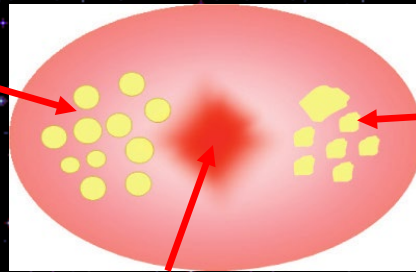


Peripheral pseudo-network + Central scar-like area



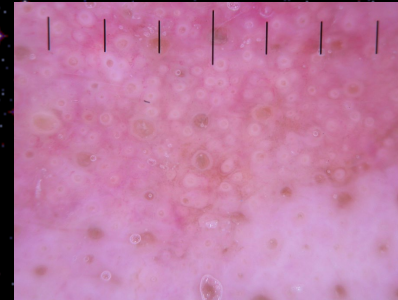
Actinic Keratosis

Keratin plugs



Scale

Erythema



An erythematous macule with surface scale: dermoscopy shows erythema and increased prominence of follicular units

Treatment: Cryotherapy, 5-FU, Imiquimod

Sebaceous Hyperplasia

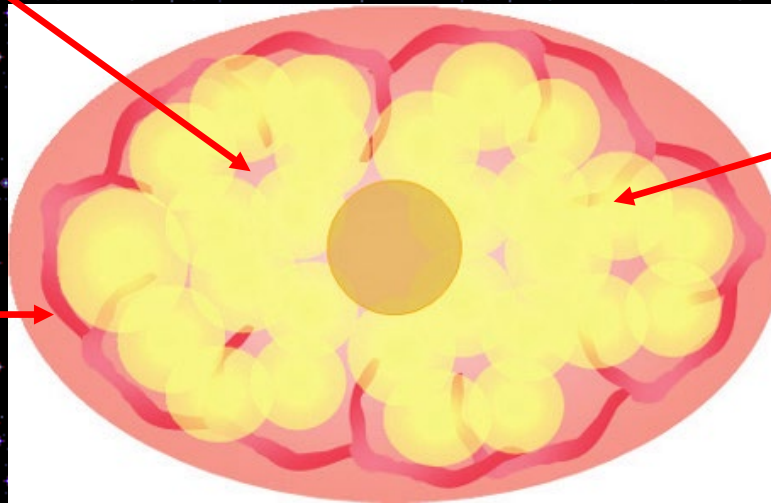
Sebaceous gland hyperplasia may present as a solitary or multiple flesh-colored facial papules.

They are more common with increasing age and if large may mimic BCC.

Sebaceous Hyperplasia

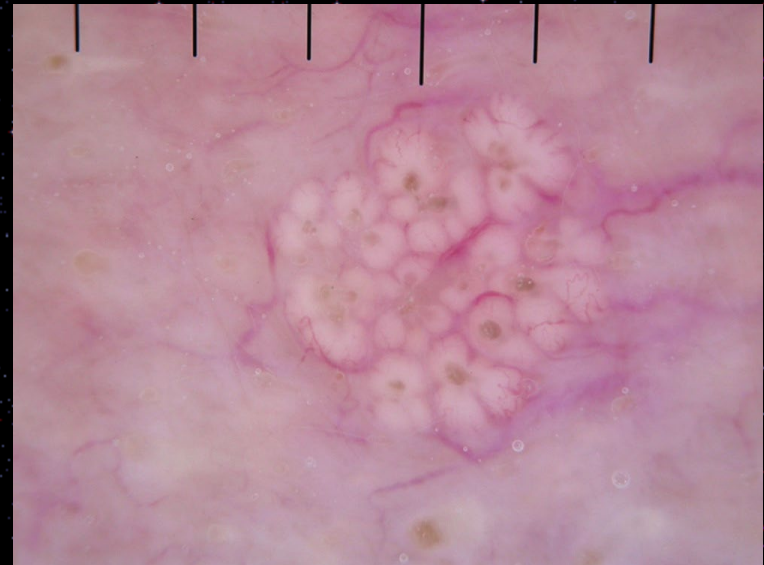
Comedo-like openings

Crown vessels



Yellow sebaceous
gland aggregates

Sebaceous Hyperplasia

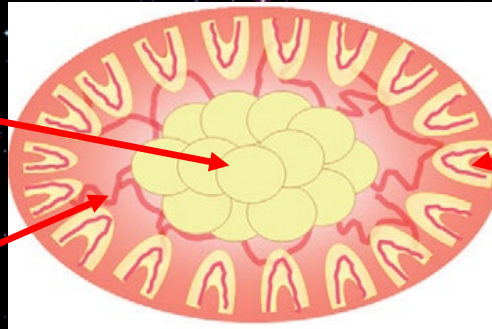


Treatment: Hyfrecaction, Cryotherapy

Keratoacanthoma/SCC

Central yellow
keratinous plugs

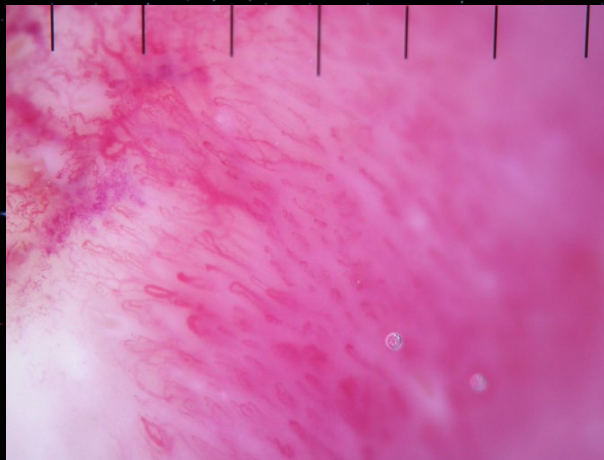
Arborizing vessels
centrally



Hairpin vessel in milky
halo peripherally

Squamous cell carcinomas (SCCs) and keratoacanthomas share clinical and dermoscopic features: always confirm on histology.

Keratoacanthoma/SCC



**A central crust:
Hairpin vessels at the
margin of the tumour
typical for a keratinizing
tumor, with arborizing
vessels centrally;
histology confirmed a
keratoacanthoma**



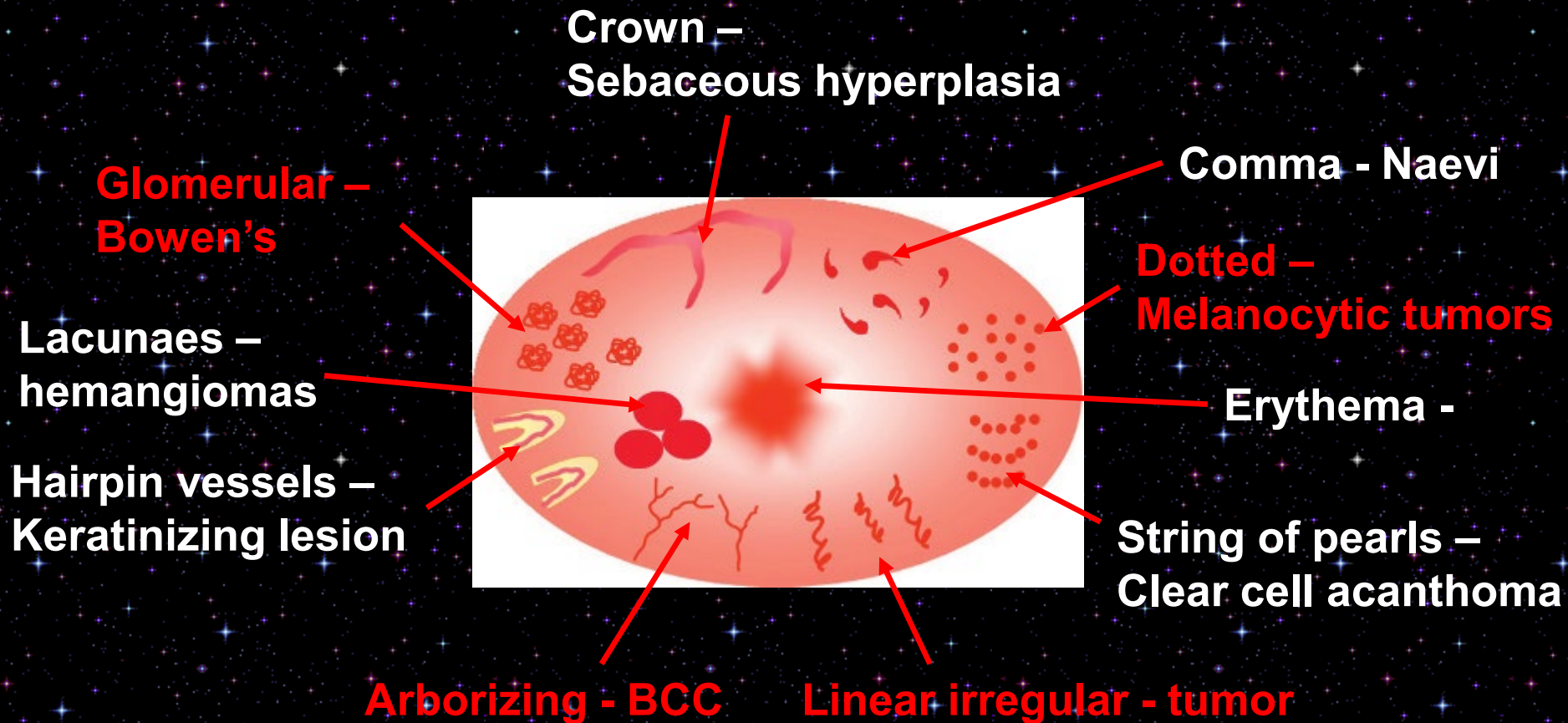
**A nodule with a central
keratotic plug:
Hairpin vessels at the
periphery and larger
arborizing vessels centrally:
histology- SCC**



Seborrheic Keratosis - Hairpin vessels

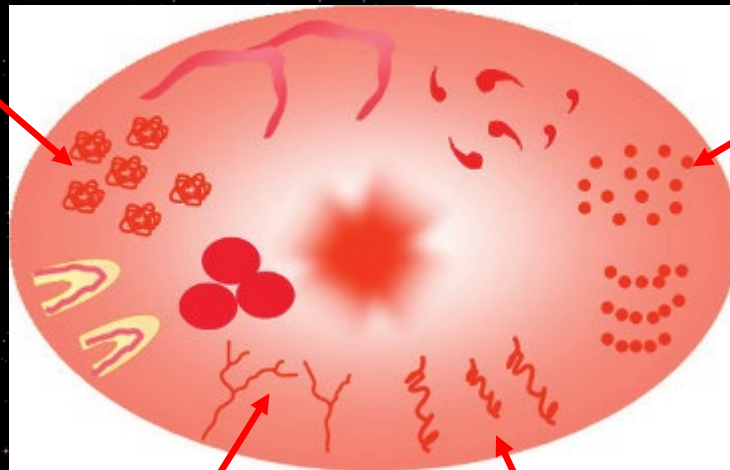
Treatment: Cryotherapy, Electrodessication, Curettage

Vessels in Skin Tumors - Review



Vessels in Skin Tumors - Review

**Glomerular –
Bowen's**



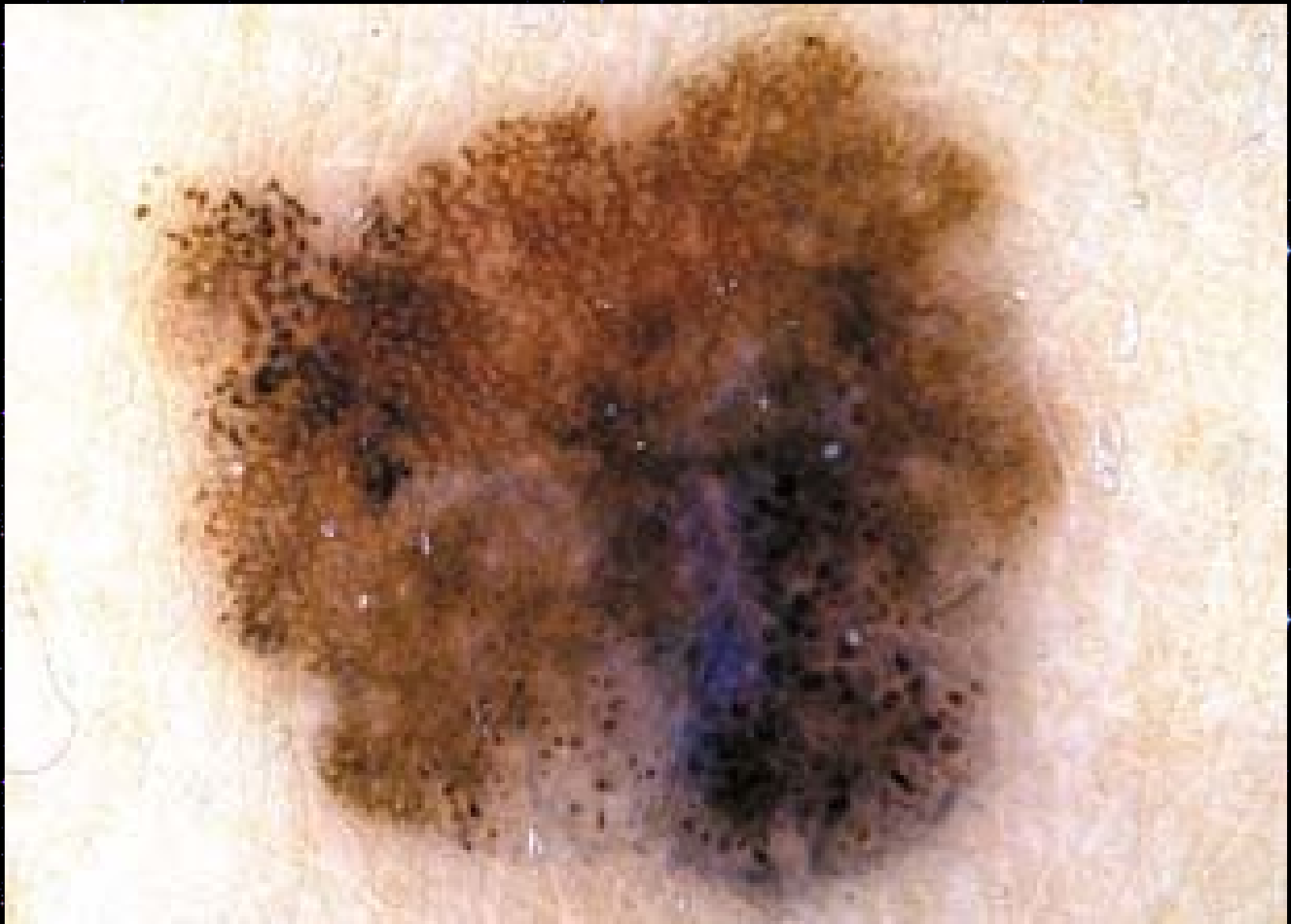
**Dotted –
Melanocytic tumors**

Arborizing - BCC

Linear irregular - tumor

Clinical Cases !

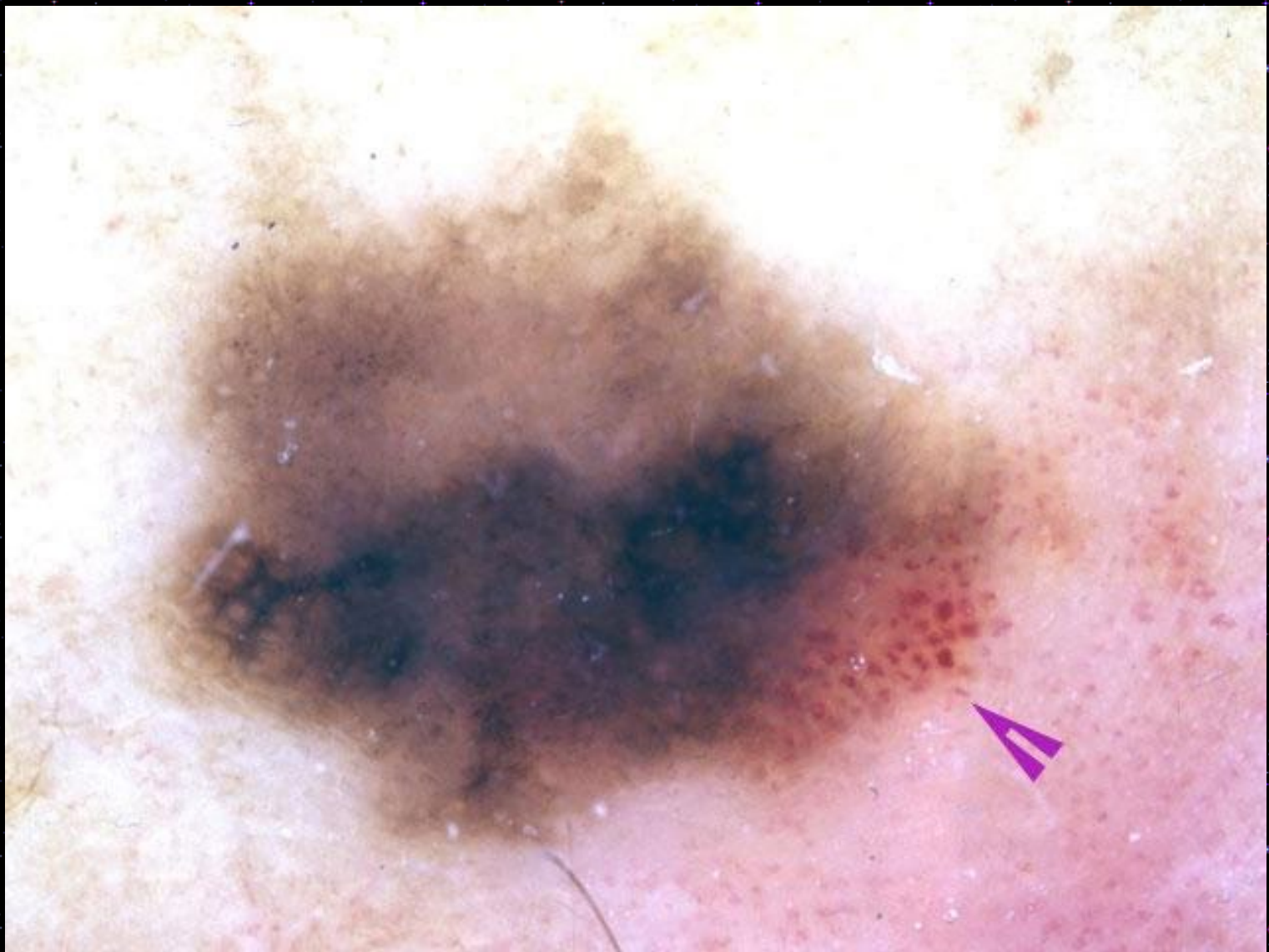
Biopsy or Not?



**Melanoma –
Blue grey veil, irregular/asymmetric globules**



**Basal Cell Carcinoma –
Arborizing vessels**



Bowen's disease – early SCC
Note Glomerular vessels



SCC



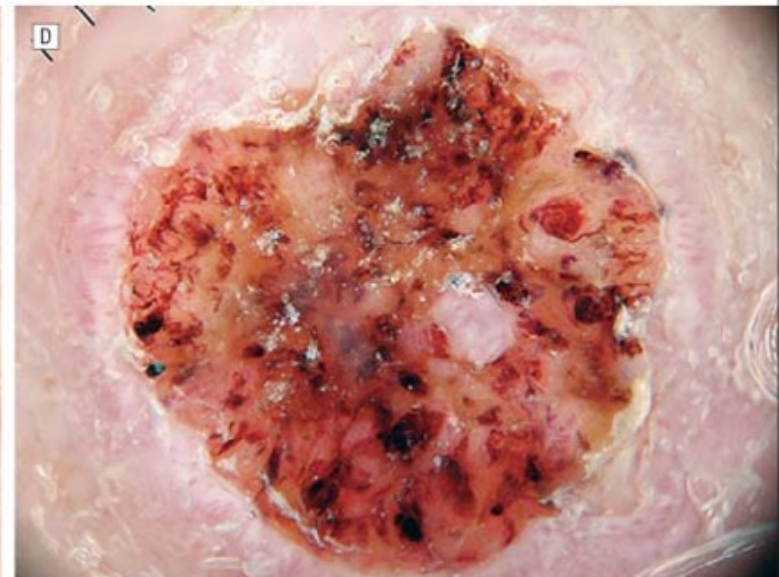
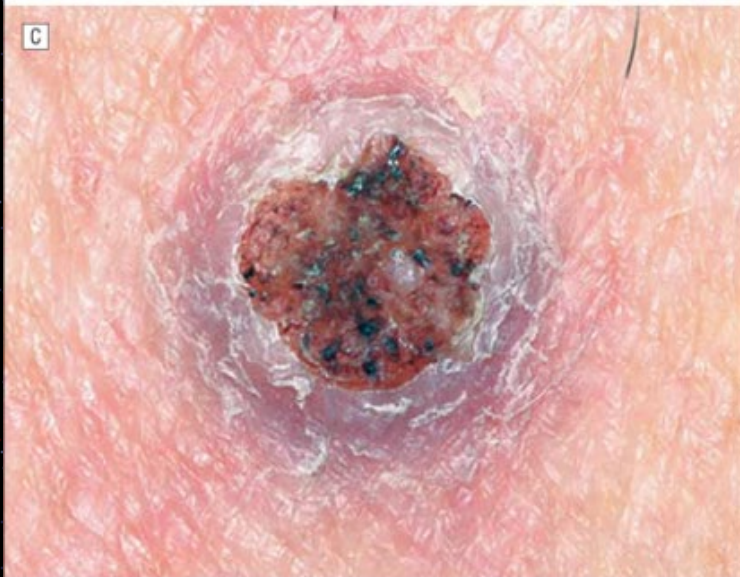
**BCC –
arborizing vessels, irregular pigment**



SCC



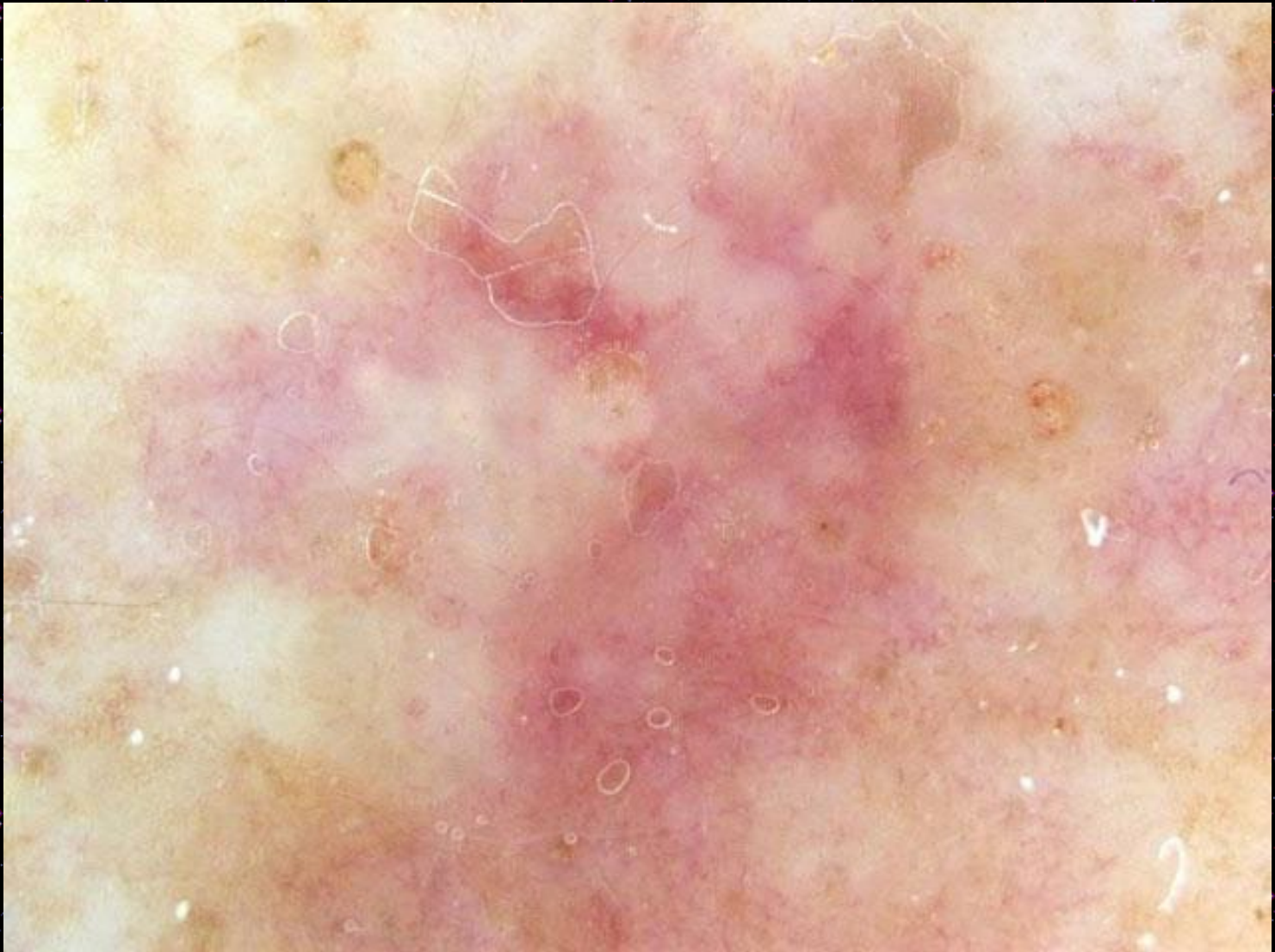
Ink Spot Lentigo



SCC



**BCC –
central ulceration, irregular pigment**



SCC



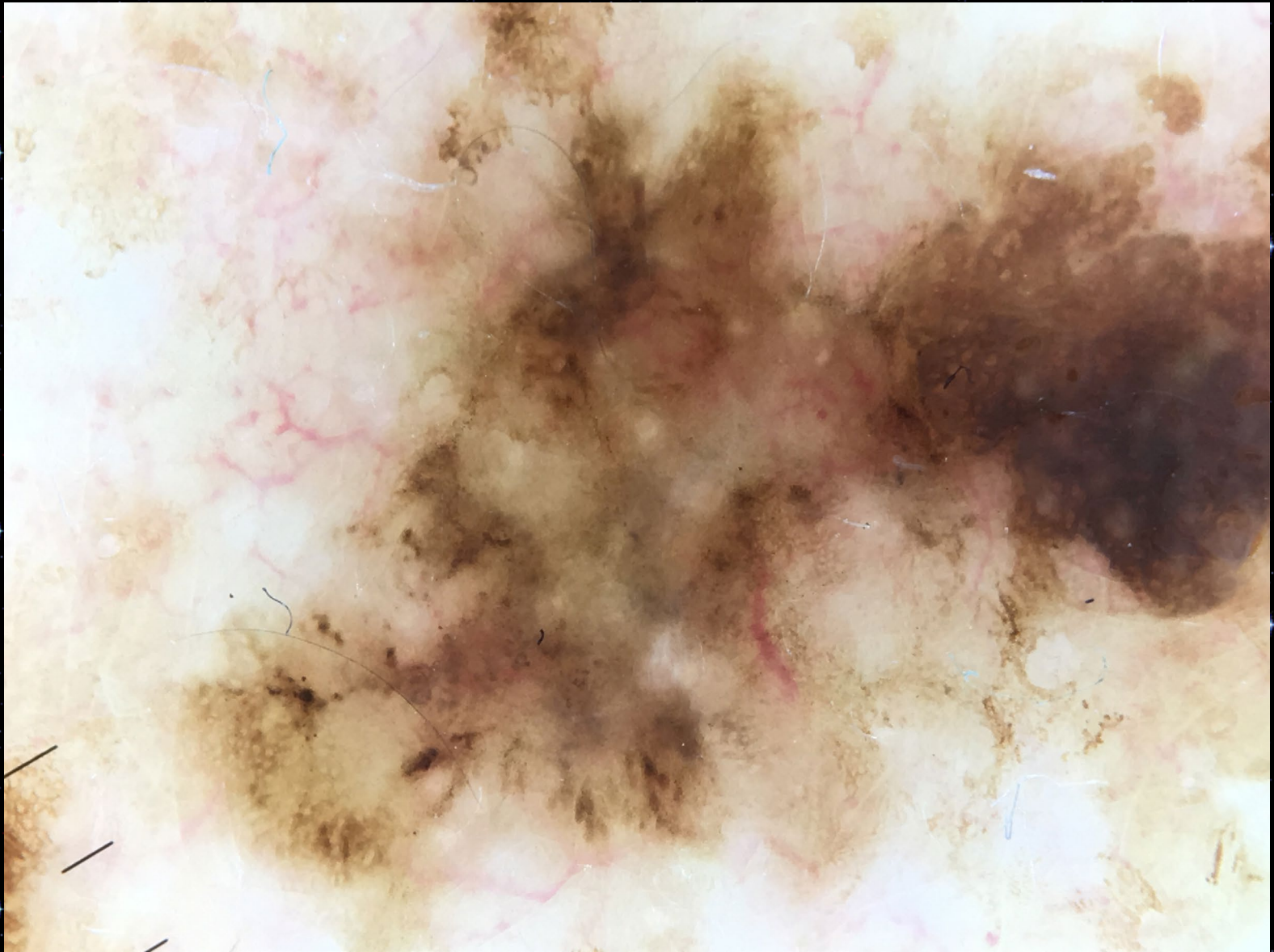
BCC



Squamous cell cancer of the lip



Actinic cheilitis



Melanoma



Actinic Keratosis



Sebaceous Hyperplasia



Nodular BCC



**Clear Cell Acanthoma -
String of pearls vessels**



Seborrheic Keratosis



Keratocanthoma



Dermatofibroma



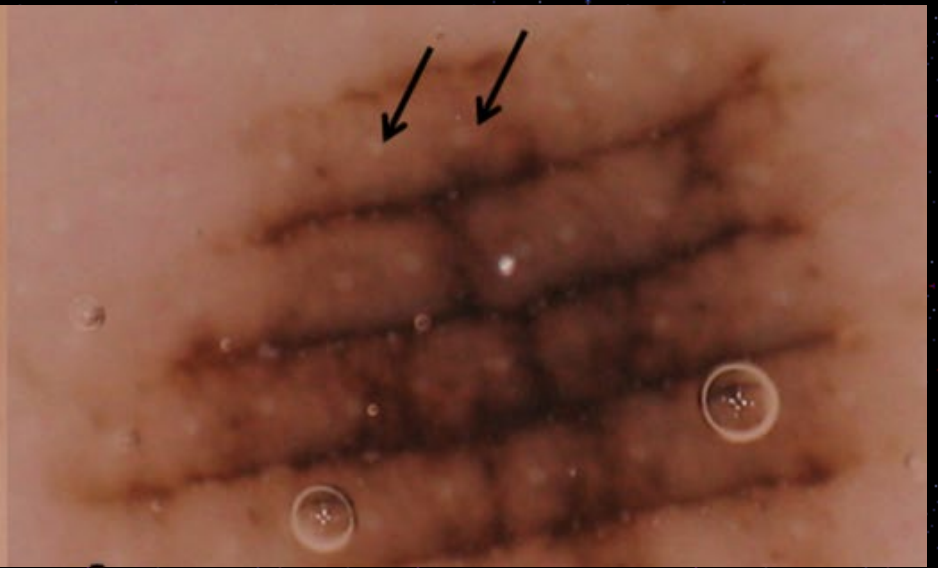
Keratocanthoma



Amelanotic Melanoma



Pigmented BCC

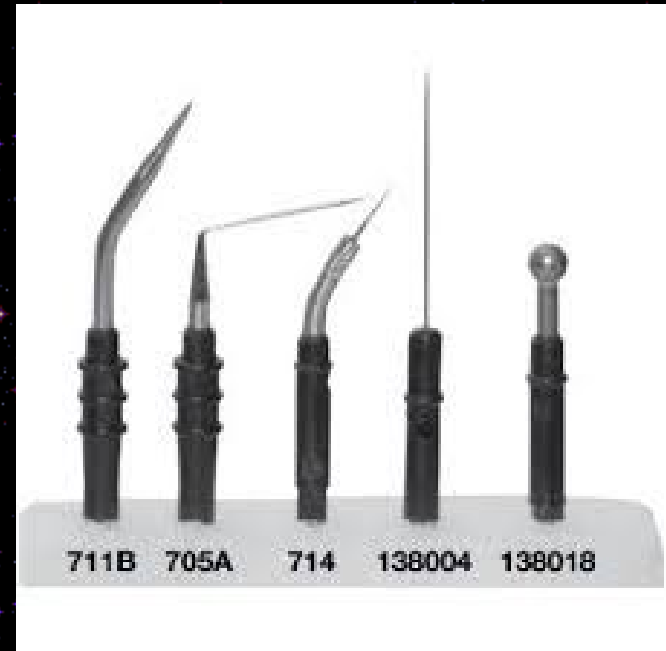


Acral Melanoma



Melanoma

Hyfrecator



Hyfrecator uses

- Benign Lesion
 - skin tags
 - warts
 - seborrheic keratosis
 - milia
 - moles – flat or elevated nevi

Hyfrecator uses

Vascular lesions

cherry angiomas

spider veins

broken capillaries

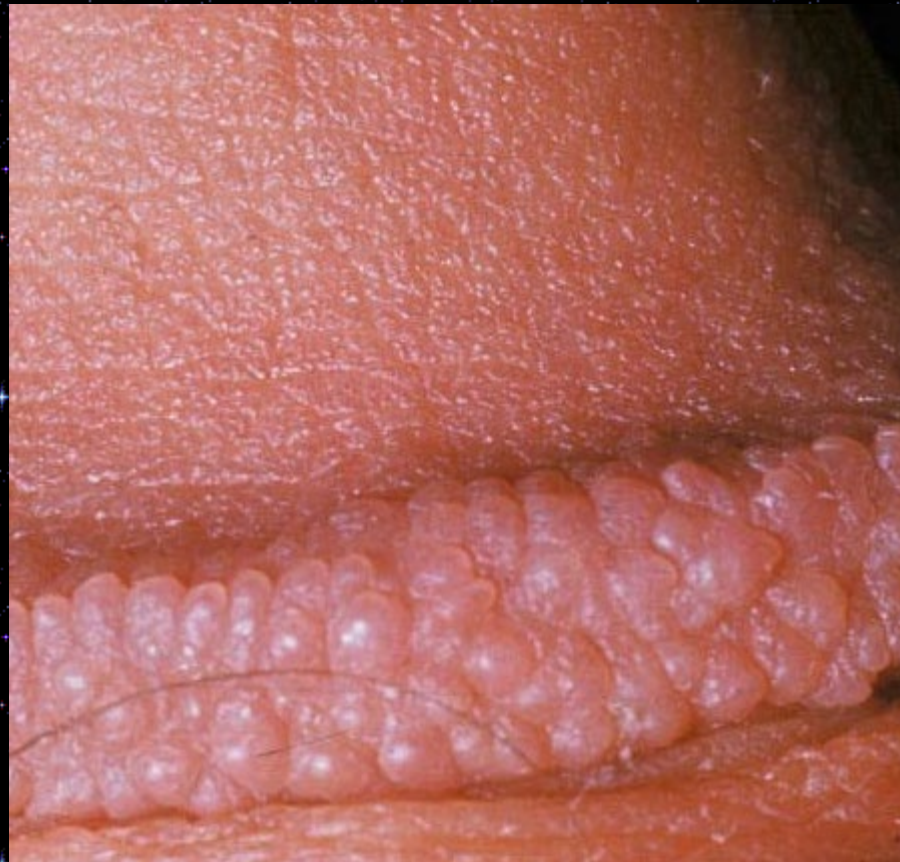
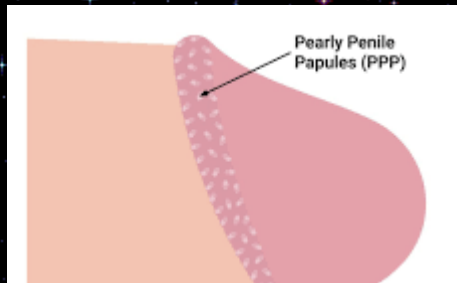
Hyfrecator uses

Sebaceous and Glandular Lesions

Sebaceous hyperplasia

Pearly penile papules

Pearly Penile Papules



Hyfrecator modes

- **Electrodessication:** Make direct contact between the electrode tip and the skin.
- **Electrofulguration:** Keep the electrode slightly above the skin and let the electrical current arc across the gap to the tissue.
Does not destroy underlying tissue
- **Electrocoagulation:** Used to halt bleeding by cauterizing

Caution

- Use a **surgical smoke evacuator** when vaporizing tissue or treating viral lesions like warts.

Lesion Type 	on Low)	Tip
Skin Tags (Acrochordons)	2.0 – 2.5 W	Sharp
Cherry Angiomas	2.0 – 2.5 W	Blunt / Sharp
Spider Angiomas	2.0 – 2.5 W	Sharp or Needle
Telangiectasias (Spider Veins)	2.0 – 2.5 W	Sharp or Needle
Sebaceous Hyperplasia	2.0 – 2.5 W	Blunt / Dull
Seborrheic Keratosis	10.0 – 14.0 W	Blunt / Dull
Common Warts (Verrucae vulgaris)	12.0 – 18.0 W	Blunt / Dull
Flat Warts (Verrucae plana)	12.0 – 18.0 W	Sharp or Blunt
Genital Warts (Condyloma acuminata)	12.0 – 18.0 W	Blunt / Dull
Pyogenic Granulomas	16.0 – 20.0 W (or High Mode)	Blunt / Dull

Truly, I have no financial disclosures!

Denise Coulombe

Denise@surgo.com

Questions?

Back to the Models

Thank You