



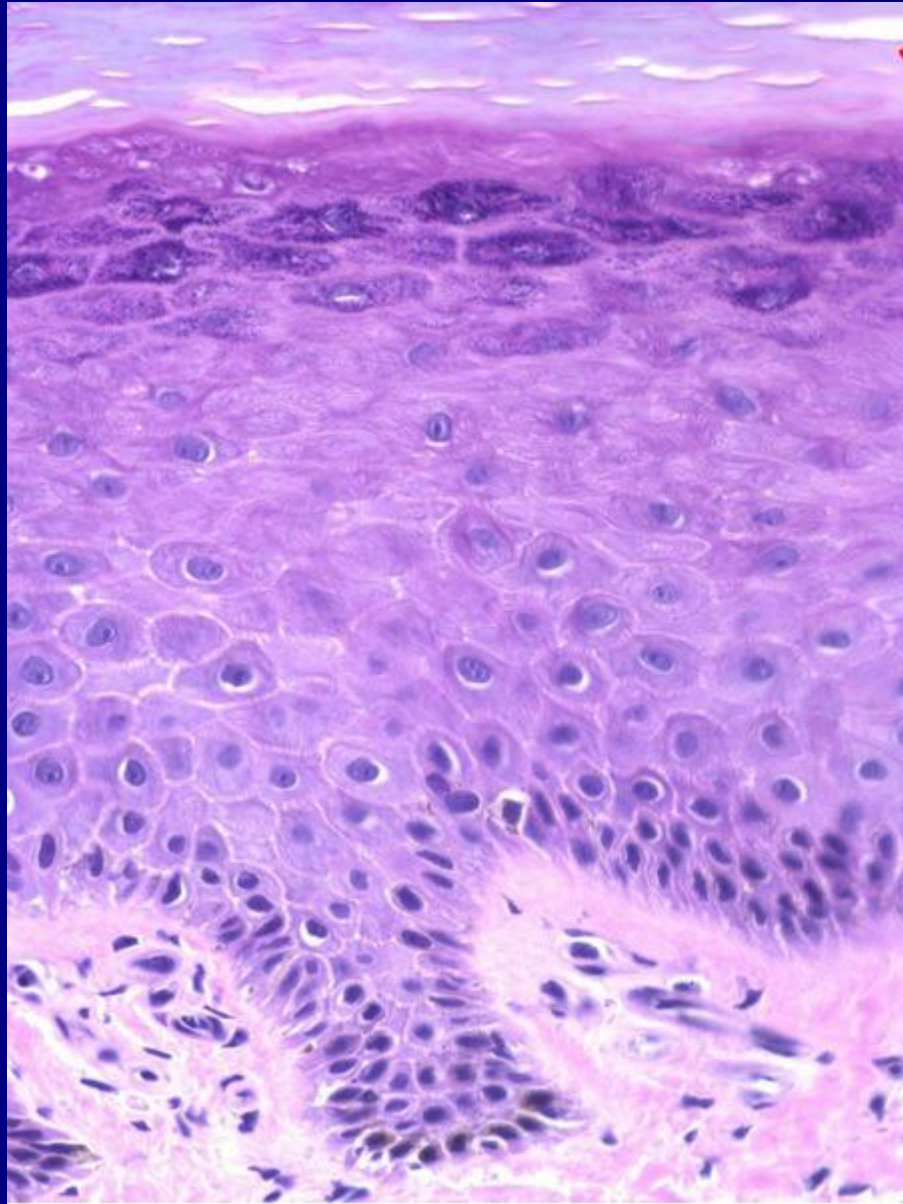
# **Non-melanoma skin cancers**

**Lidia Rudnicka**

# **Precancerous lesions**

**Basal cell carcinoma  
(BCC)**

**Squamous cell carcinoma  
(SCC)**



← **Stratum Corneum**

← **Granular layer**  
(contains purple keratinohyaline granules)

← **Stratum spinosum**  
(spiny processes separate keratinocytes)

← **Basal layer**

# PRECANCEROUS SKIN LESION

- Actinic keratosis
- Cutaneous horn
- Arsenical keratosis
- Chronic radiation keratosis
- Bowen's disease
- Erythroplasia of queyrat
- Erythroplakia
- Leukoplakia

# Actinic keratosis



skin-colored to reddish-brown  
keratotic macules, papules,  
or plaques with superficial scaling

# Disease Continuum



**Photodamage**



**Early AK**



**AK**



**SCC**

# Actinic Keratosis (solar keratosis)



- Very common
- Usually develops after age 50 (~80% of the population )
- Caused by ultraviolet (UV) exposure
- Pre-cancerous
  - May develop into squamous cell carcinoma (SCC)
- Some consider it SCC in situ

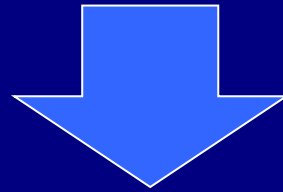
# Sun – exposed areas





# PATHOGENESIS

Sunlight exposure



UV-induced mutation  
in tumor-suppressor gene p53

**AK** → **SCC**

The risk of developing skin cancer  
within AK lesions is

**10-20% / 10 years**



# Clinical types of actinic keratosis

- Hyperkeratotic
- Pigmented
- Lichenoid
- Atrophic
- Actinic cheilitis

# Hyperkeratotic AK



- Papules and plaques with scale or scale-crust and an erythematous base
- The erythematous base often extends beyond the overlying hyperkeratosis.
- Hyperkeratotic scale: whitish or yellow-brown

# Hyperkeratotic AK



# Pigmented AK

- Hyperpigmented
- Often without erythema
- DD (dermoscopy): seborrheic keratoses, lentigo maligna, melanoma



# Lichenoid AK

- Inflammatory infiltrate
- More erythema (surrounding the base) compared to the hyperkeratotic type
- Pruritus or tenderness possible



# Atrophic AK

- Areas of as erythematous, slightly scaling patches on paper-thin skin in older patients





# Actinic cheilitis

- On the lower lip of heavily sun-exposed individuals.



- Erythematous scaling papules and patches or diffuse erythema & scale

# Actinic cheilitis



Actinic cheilitis → SCC



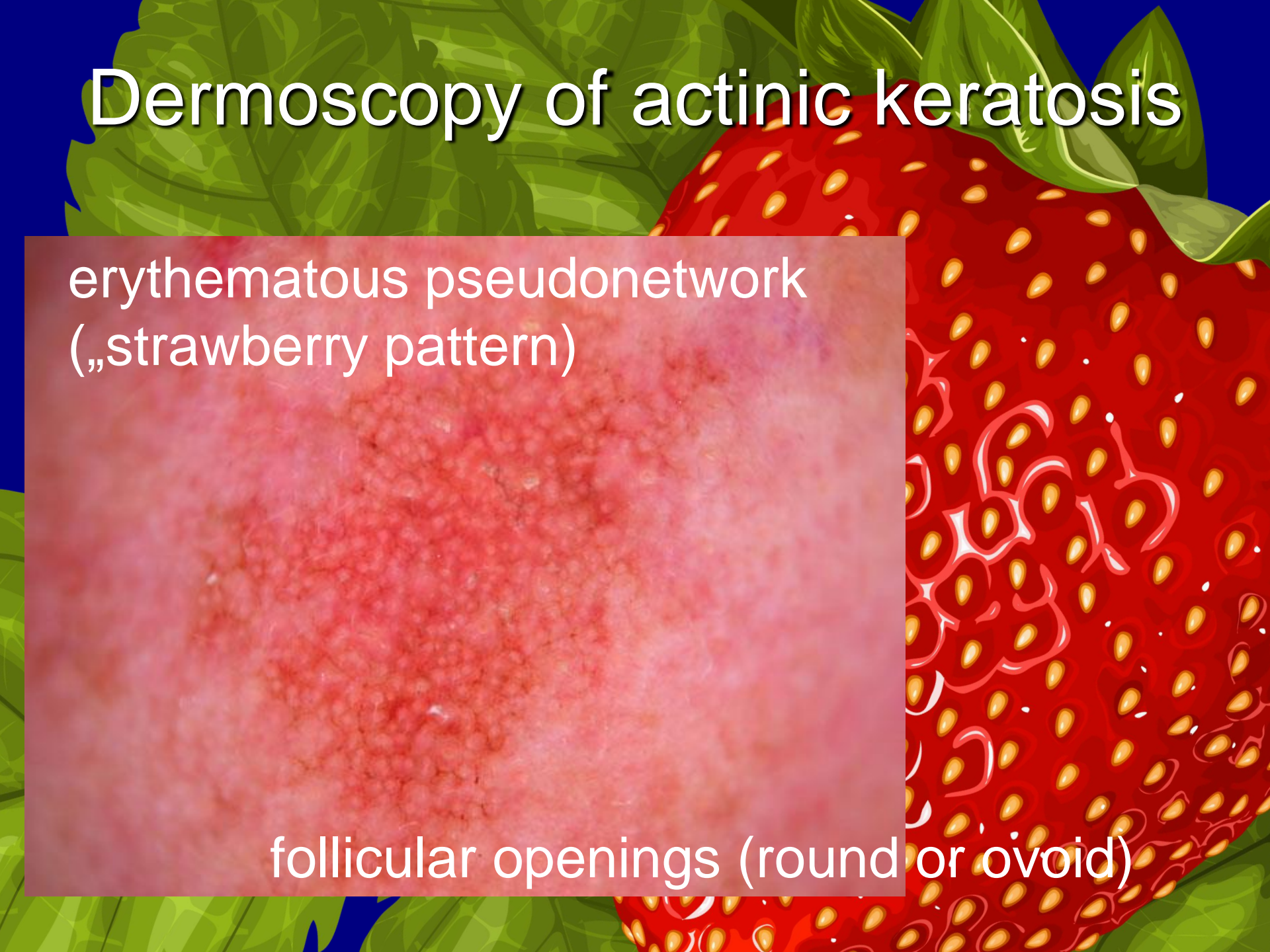
# Dermoscopy of actinic keratosis

- erythematous pseudonetwork („strawberry pattern”)
- surface scale
- linear-wavy vessels
- follicular openings (round or ovoid)
- globular structures with a white halo (white circles).

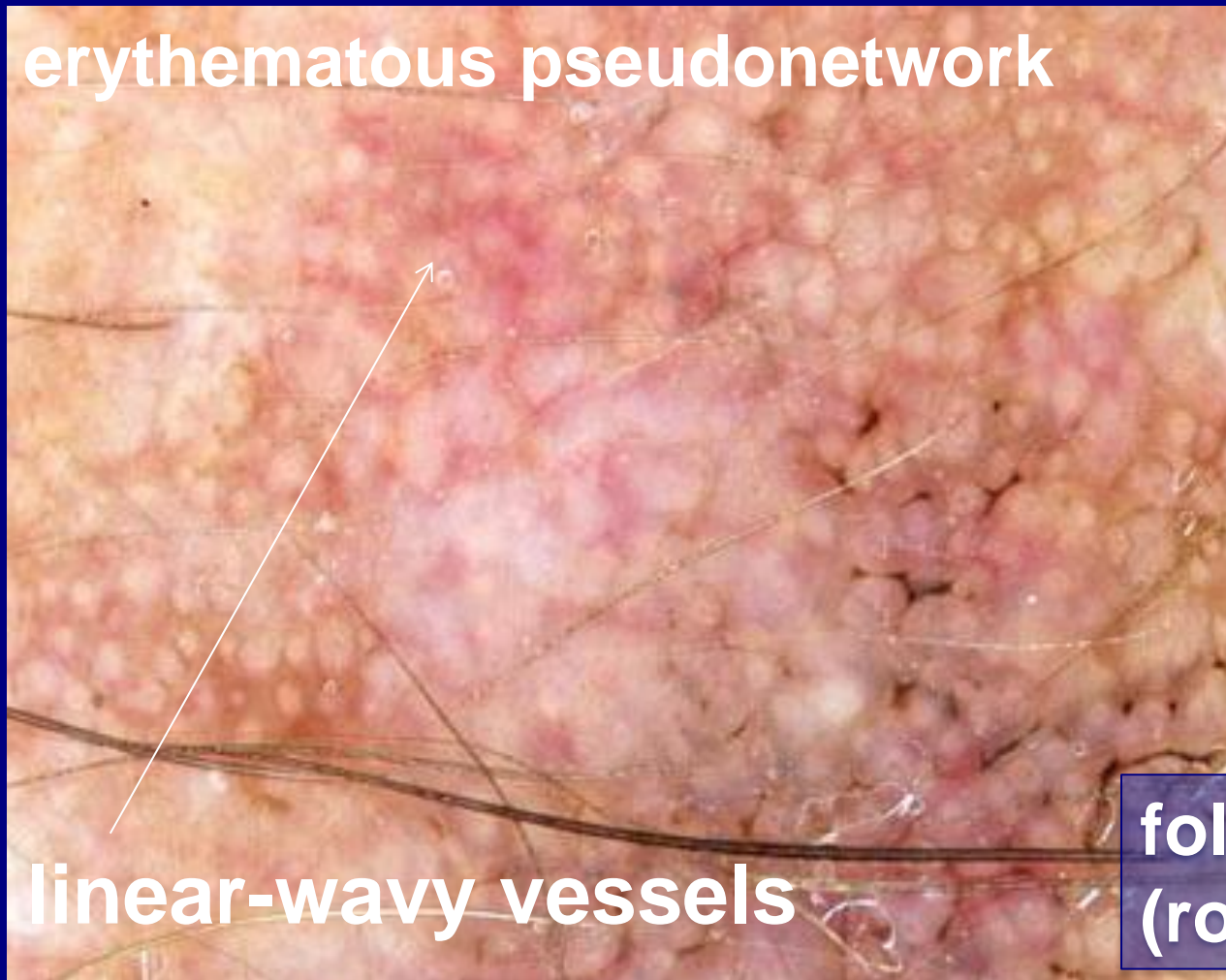
# Dermoscopy of actinic keratosis

erythematous pseudonetwork  
(„strawberry pattern)

follicular openings (round or ovoid)



# Dermoscopy of actinic keratosis



erythematous pseudonetwork

linear-wavy vessels

follicular openings  
(round or ovoid)

# Field cancerization



**large areas of the skin contain cells  
affected by a carcinogenic alteration (pre-clinical)**

# Treatment of actinic keratosis

- Single lesion → treat the lesion
- Multiple lesions → treat the whole „field”



# Treatment of actinic keratosis

## Damage

- Cryosurgery
- Curretage

## Medical

- Imiquimod (Aldara)
- Ingenol mebutelate (Picato)
- 5-fluorouracil (Efudix)
- Diclofenac (Solaraze)
- Photodynamic therapy

multiple  
lesions

single lesions

# Imiquimod (Aldara) treatment

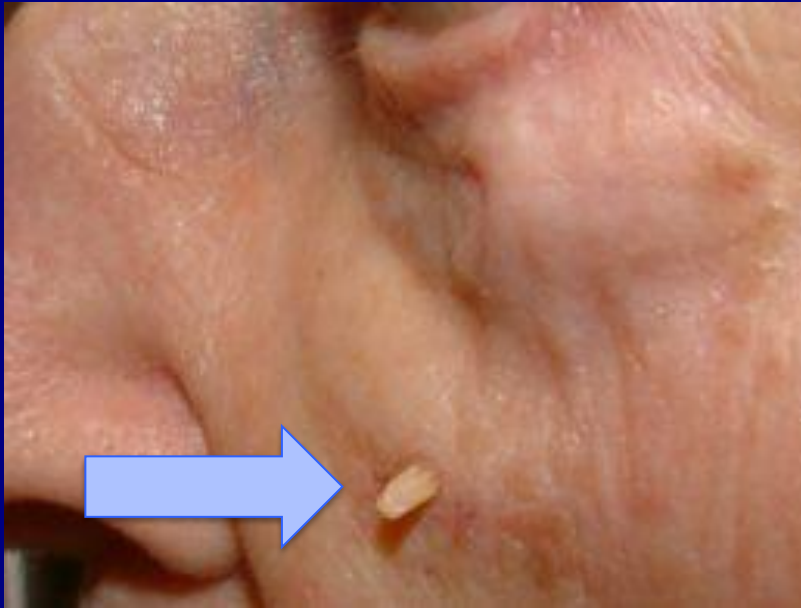


# Cutaneous horns (*cornu cutaneum*)

- Above the age of 60 y .
- On sun-damaged skin
- Conical structure composed of keratin
- SCC at the base in 20% of patients



# Cutaneous horn (*cornu cutaneum*)



# Cutaneous horn (*cornu cutaneum*)



# Arsenical keratosis

- Chronic arsenic exposure
- No photodamage
- Yellow punctuate corn-like papules 2–10 mm
- Hands & feet (mainly palmar and plantar aspects)
- May coalesce to plaques



# Arsenical keratosis



# Arsenical keratosis → SSC





# Chronic radiation keratosis



# Bowen's disease

(Squamous cell carcinoma in situ)

- Erythematous scaling patch or slightly elevated plaque
- Elderly individuals
- DD: superficial BCC, psoriasis, nummular eczema



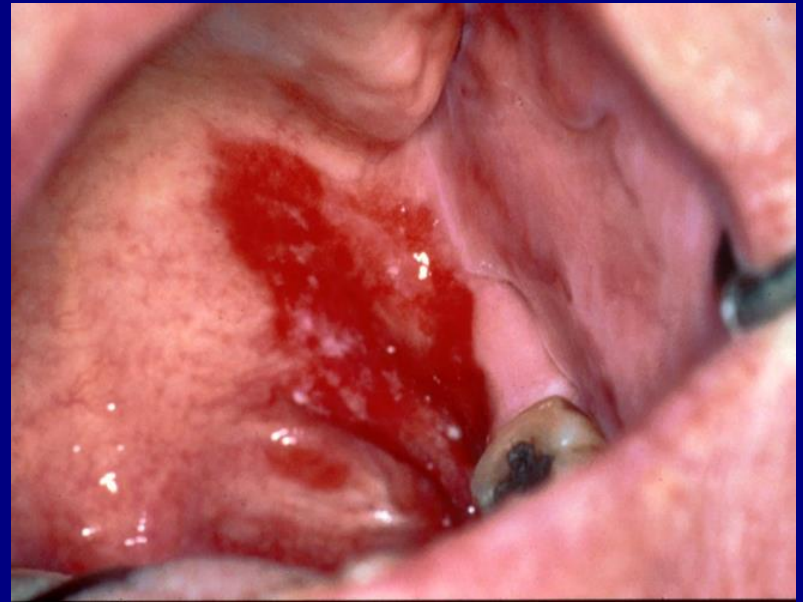
# Erythroplasia of Queyrat

(SCC in situ in mucous membranes)

- well-defined, velvety erythematous plaque of the glans or vulva
- DD: erosive lichen planus



# Erythroplakia

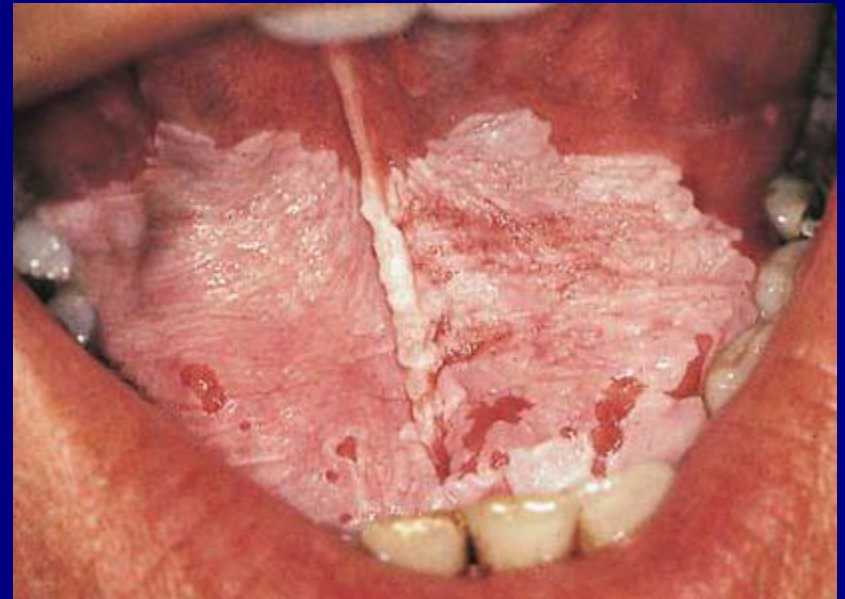
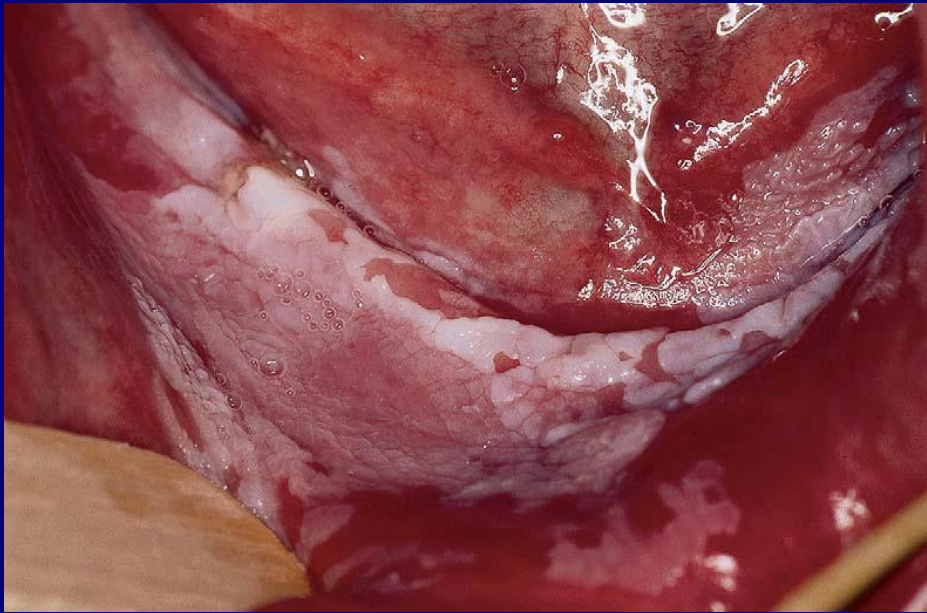


# Leukoplakia



- Leukoplakia is the most common premalignant condition of the oral cavity
- White patch or plaque that cannot be characterized clinically or pathologically as any other disease
- Risk faktors: tobacco, alcohol

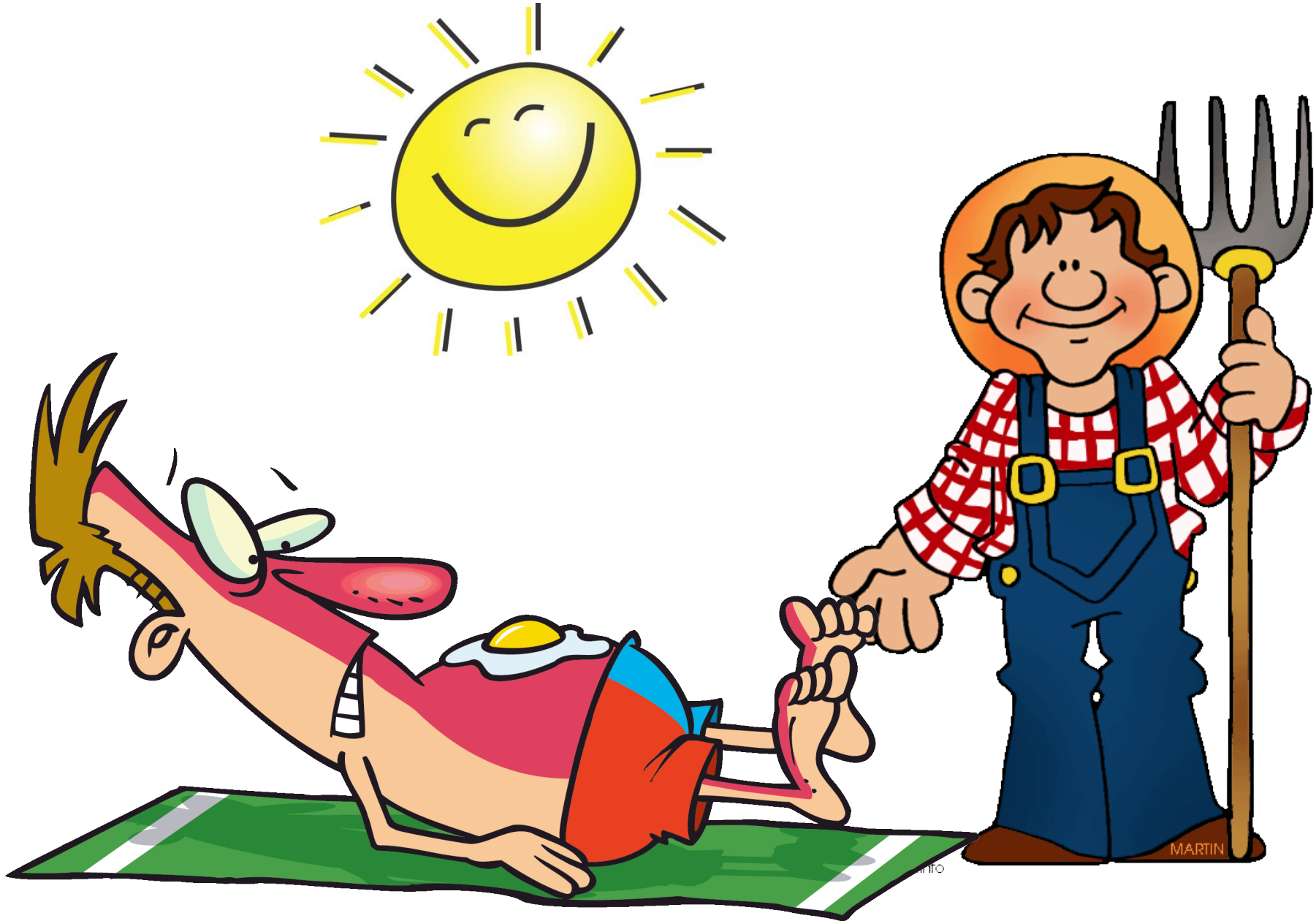
# Leukoplakia



# **Precancerous lesions**

**Basal cell carcinoma  
(BCC)**

**Squamous cell carcinoma  
(SCC)**

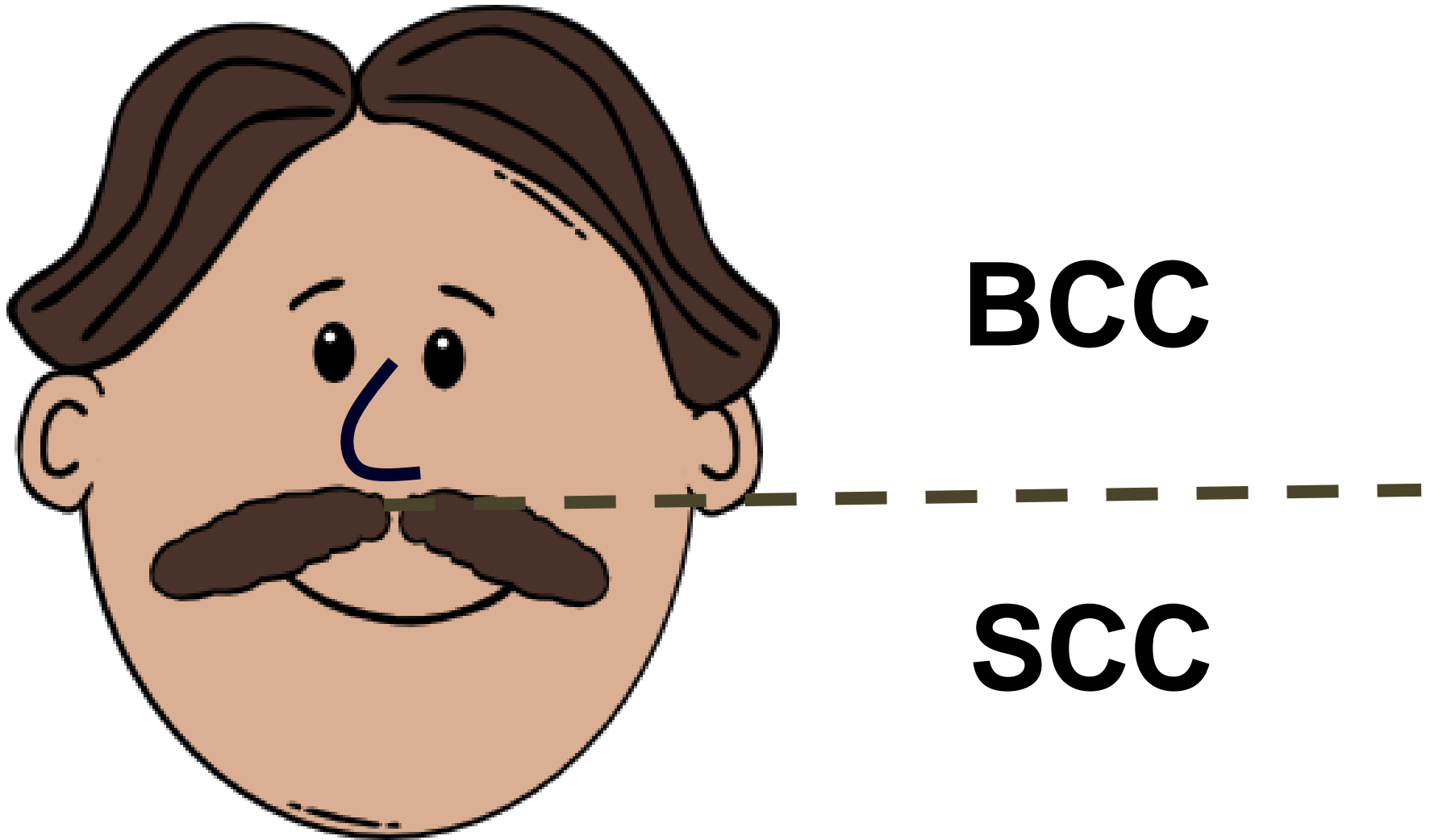


**melanoma**

**BCC & SCC**



# Common locations on the face



# BASAL CELL CARCINOMA

- Most common skin cancer arising from the basal layer of epidermis
- Develops most commonly on sun-damaged skin
- Mainly > 50 y
- Low metastatic potential (<1%)
- Locally invasive, aggressive, and destructive to skin and bone.

# BCC – Main clinical subtypes

- ✓ Nodular
- ✓ Superficial
- ✓ Pigmented
- ✓ Morpheiform

# Nodular BCC

- Most common (60%)
- Pearly papule or nodule with rolled border
- Ulceration may occur
- Head and neck
- Nodular basal cell carcinoma



# Nodular BCC



# Nodular BCC



# Nodular BCC with ulceration



# Superficial BCC

- erythematous macule or thin plaque
- common on the trunk
- younger population than in other BCC
- DD: AK, Bowen's disease, psoriasis





# Superficial BCC



# Pigmented BCC

- Pigmented BCC is a variant of nodular BCC,
- Black or blue–black
- DD: nodular melanoma



# Pigmented BCC



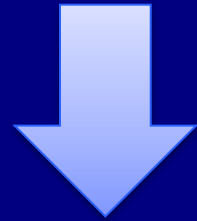
# Morpheaform BCC

- similar to morphea.
- whitish, flat, slightly atrophic lesion
- no well-demarcated borders
- DD: scar, morphea



# Diagnosis of BCC

■ Clinical examination



■ Dermoscopy



■ Histopathology

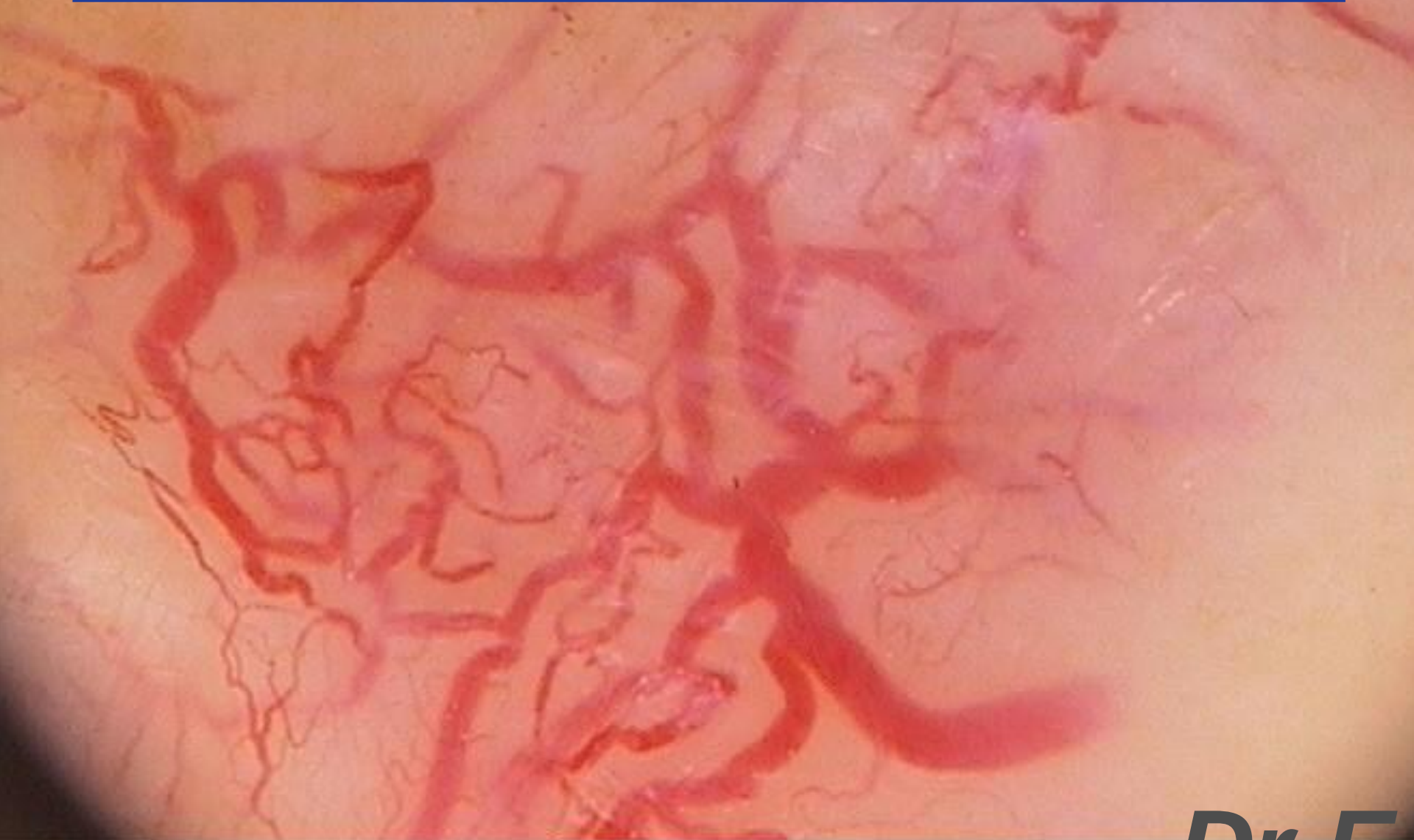
# Dermoscopy features of (nodular BCC

- No pigment network
- Arborizing vessels
- Large blue-gray ovoid nest
- Mapleleaf like areas
- Spoke wheel areas
- Ulcerations



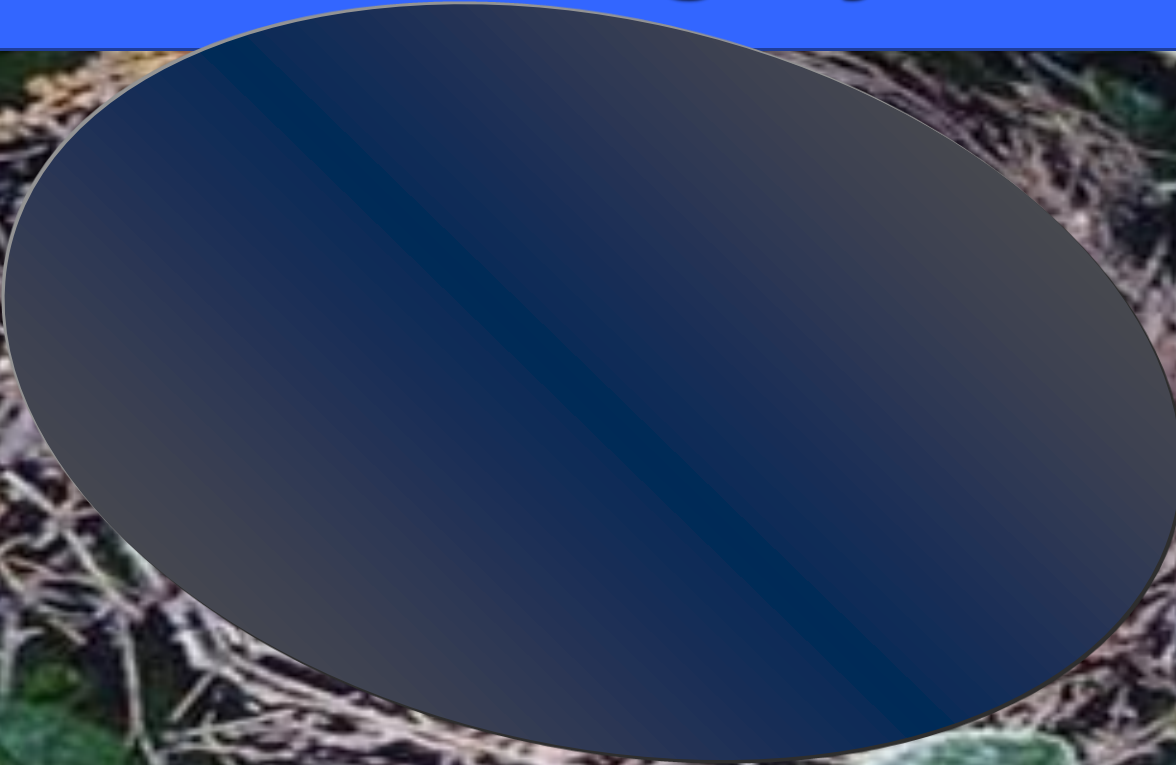
**Presence of arborizing vessels  
is a hallmark of nodular BCC**

# Arborizing vessels in BCC





**Blue-gray**



**ovoid nest**

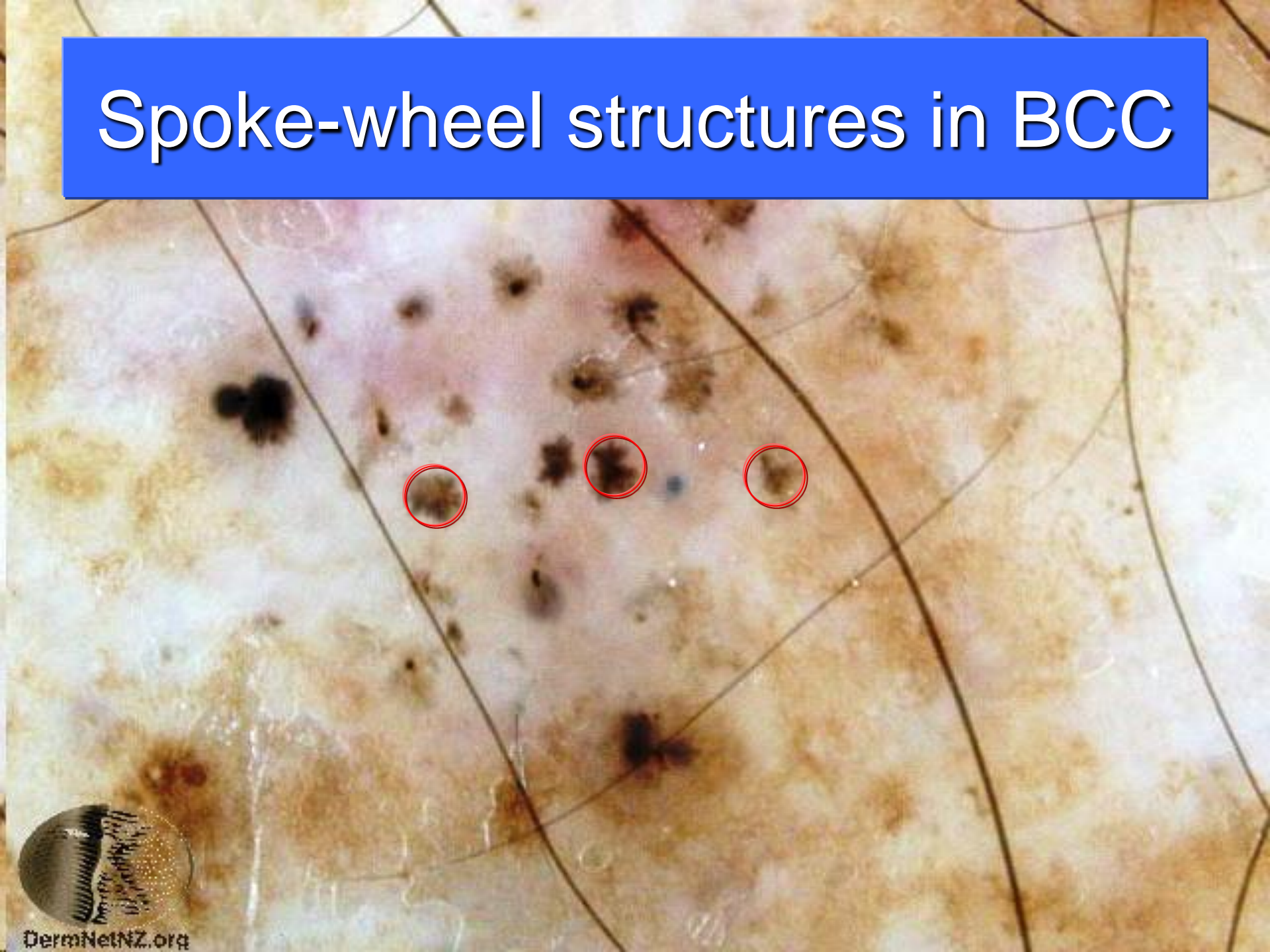
# Blue-gray ovoid nests



# Spoke wheel



# Spoke-wheel structures in BCC



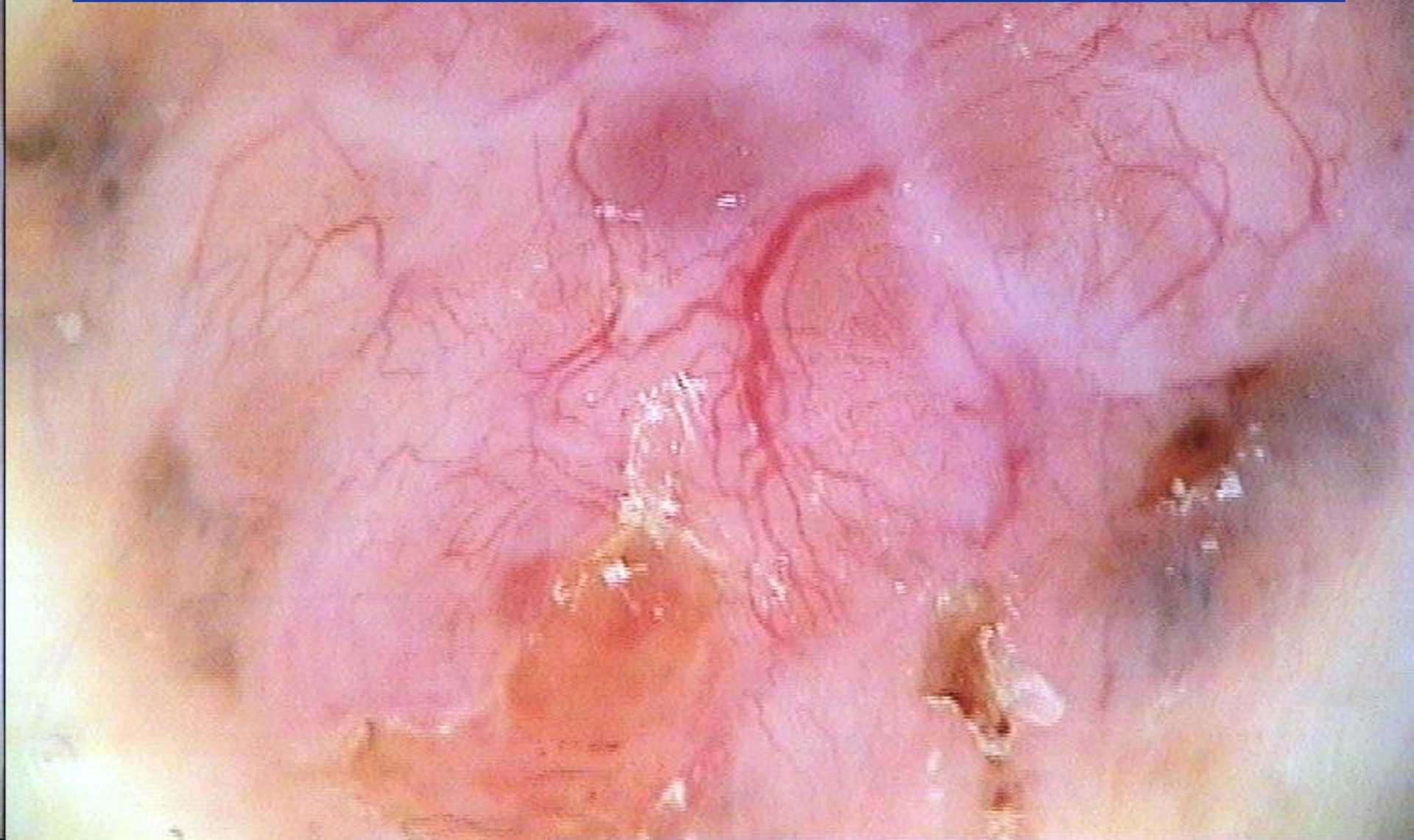
# Maple leaf like areas



# Ulcerations



# Arborizing vessels & ovoid nests



# Defining lesion borders



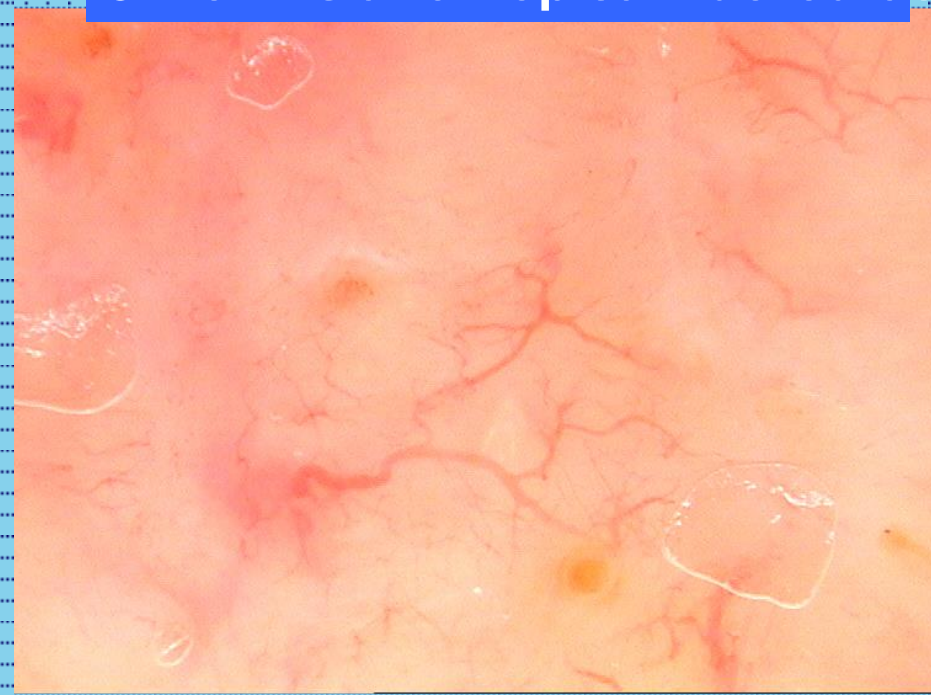
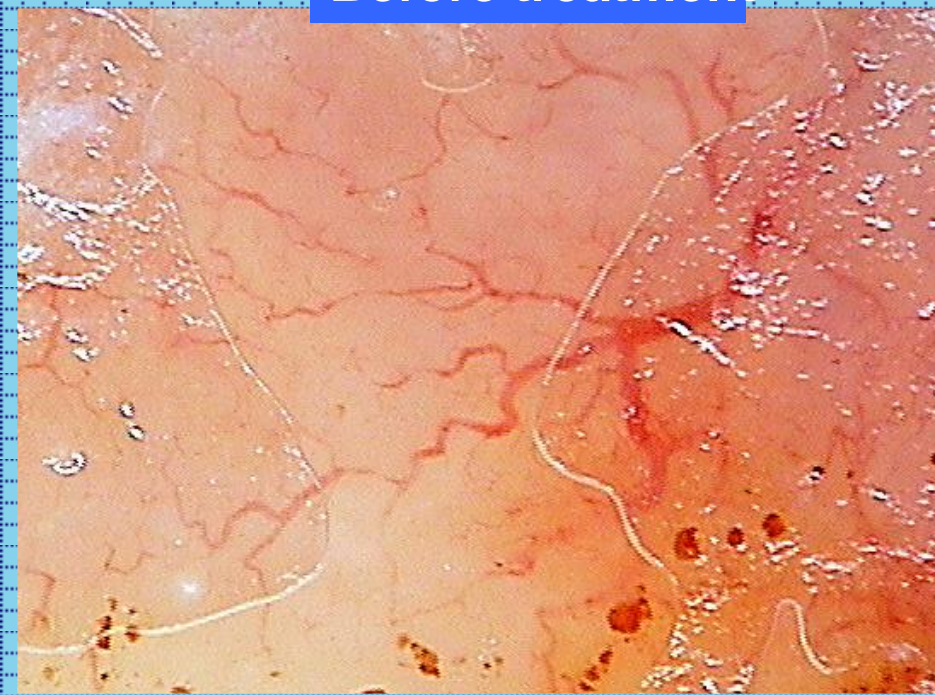




**Before treatment**



**3 months after topical fluorouracil**



# BCC: Treatment

- **Surgical Treatment Options:**
  - Cryosurgery
  - CO2 laser
  - Excision with standard 3-4 mm margins
  - Mohs micrographic surgery
  
- **Non-Surgical Treatment Options (superficial BCC):**
  - Imiquimod cream
  - 5% fluorouracil
  - Photodynamic therapy
  - Radiation

Why treat BCC ?





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# Squamous Cell Carcinoma (SCC)

- The second most common non-melanoma skin cancer (20%) and the most common cancer of the head and neck (90%)
- May be aggressive & metastasize (<20%)

# SCC

- A *de novo* lesion
- On sun-damaged skin
- From a previous precancerous lesion (e.g. actinic keratosis)
- On long-lasting (burn) scars
- HPV (anogenital area)

# SCC

- **Invasive squamous cell carcinoma**
- Erythematous keratotic papule or nodule
- Progressively enlarges
- May ulcerate
- May have an exophytic and/or an endophytic (invasive) component



# SCC



# Advanced SCC





# Treatment of invasive SCC

- Surgery
- Radiotherapy
- Mohs micrographic surgery

# Mohs micrographic surgery



