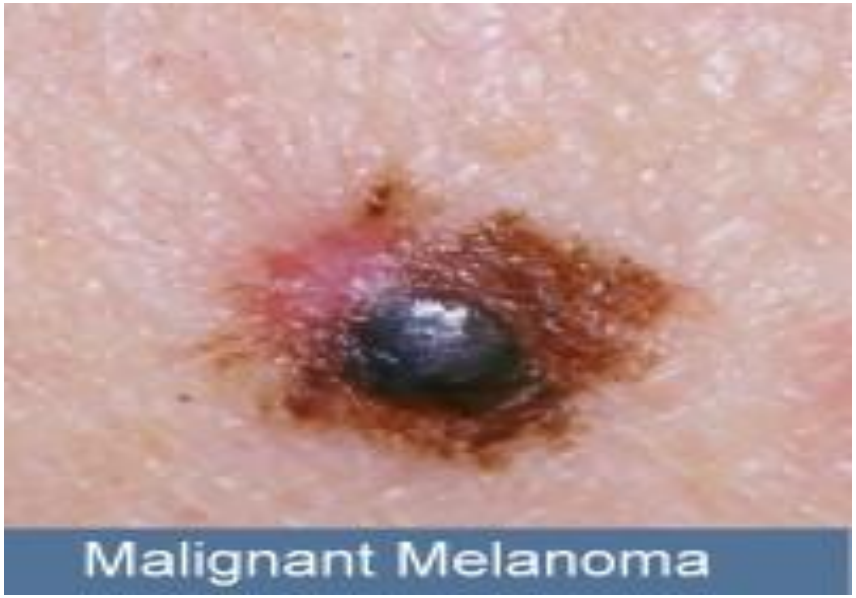
Malignant melanoma

Background

Melanoma is a malignancy of pigment-producing cells (melanocytes) located predominantly in the skin, but also found in the eyes, ears, GI tract, leptomeninges, and oral and genital mucous membranes.

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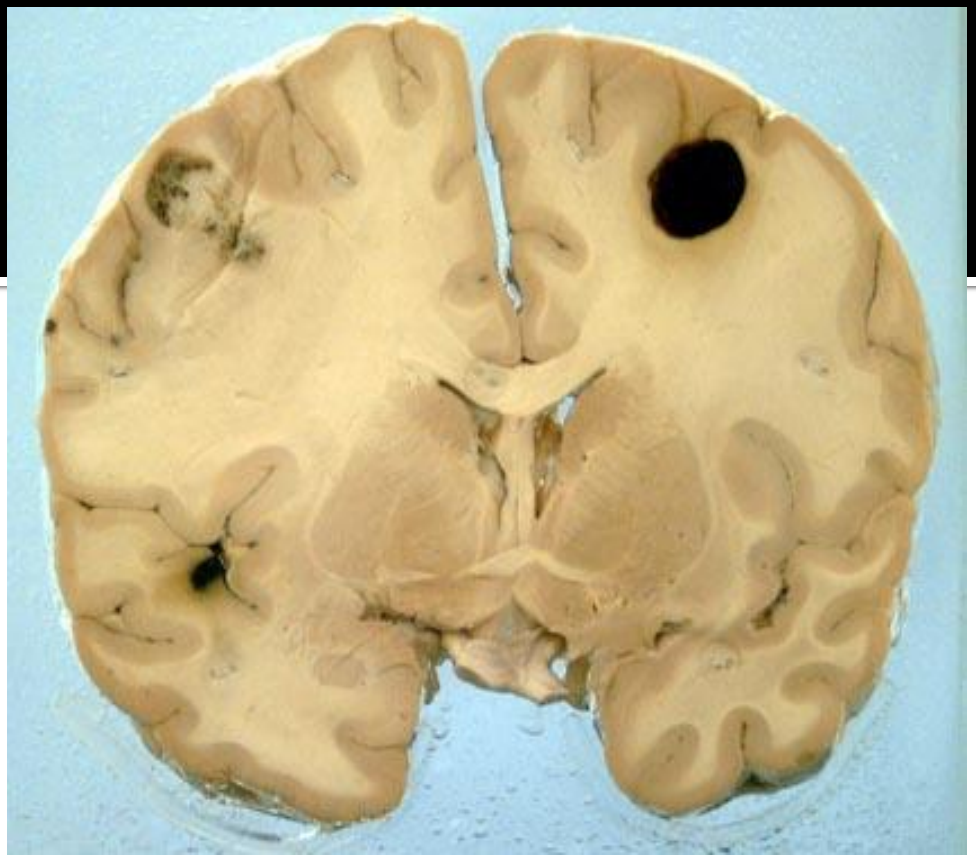
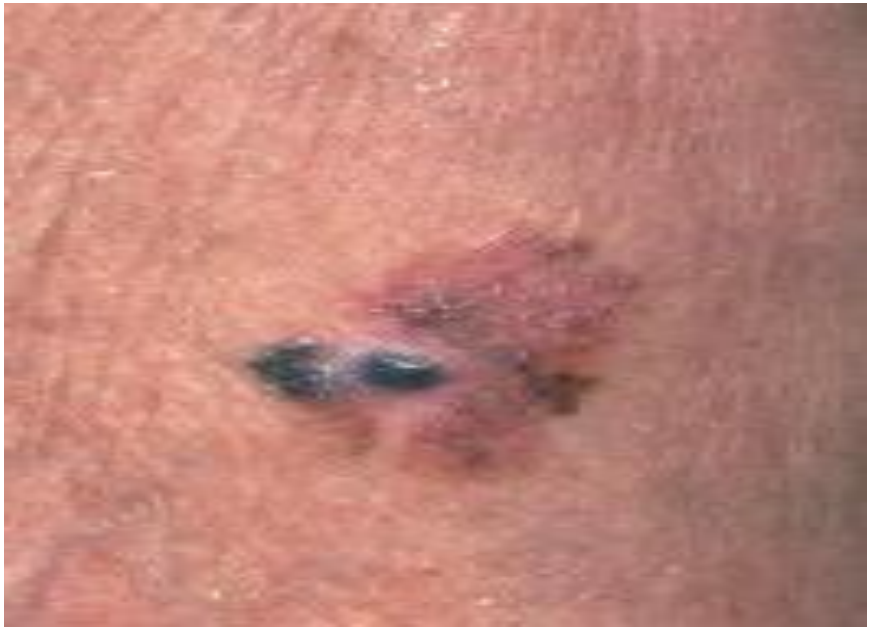




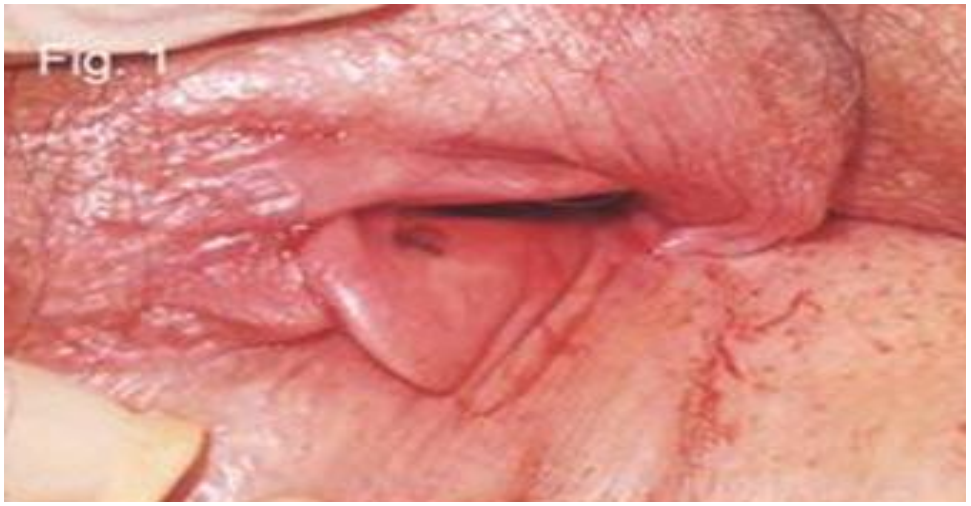


Fig. 1

Malignant melanoma of the skin

-Definition : a malignant tumour arising from the epidermal keratinocyte

-Melanoma accounts for only 4% of all skin cancers; however, it causes the greatest number of skin cancer–related deaths worldwide.

Early detection of thin cutaneous melanoma is the best means of reducing mortality -

Etiology & Risk factors :

-The development of melanoma is multifactorial

- UVR = a major risk factor for cut. MM
  especially intensive intermittent exposure

- Use of artificial UV sources

- High socio-economic status

-Gentic : MC1R gene , BRAF , *CDKN2A*

-increased number of common and dysplastic nevus

-a family history of melanoma

Diagnosis

- there are two system for clinical diagnosis

1 – american ABCD categories =

A = Asymmetry

B = irregular Border

C = irregular Colour

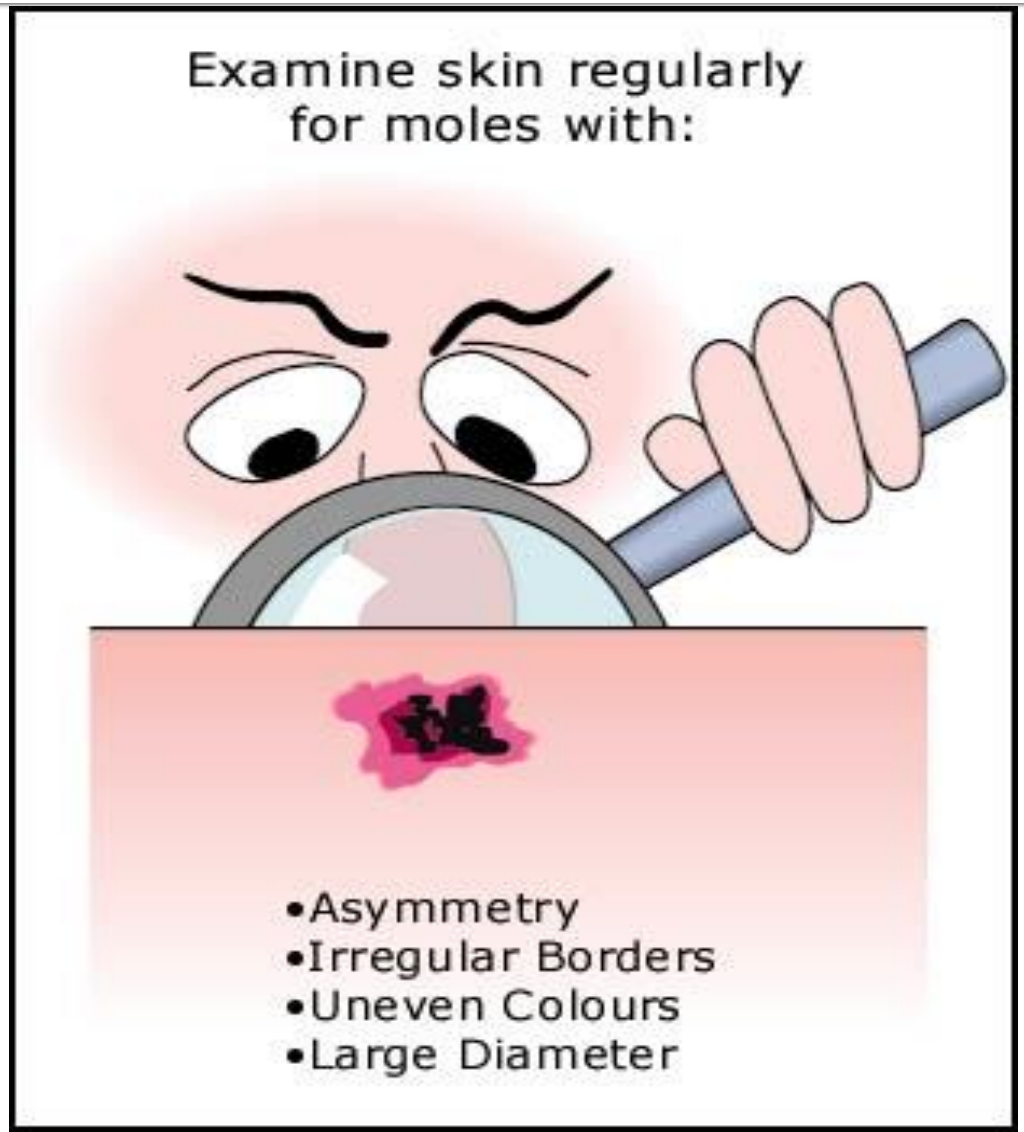
D = Diameter over 1cm

2- Glasgow seven point check list

- both system apply mainly to the Superficially Spreading Melanoma (SSM)

Physical exam

- Total body examination
- Skin examination
- Lymph node examination



Diagnosis : : Glasgow seven point check list :

- **major features**
  1 - change in size
  2 - change in shape
  3 - change in colour
- **minor features**
  1 – D > 5mm
  2 – inflammation
  3 – Oozing or bieeding
  4 – mild itch or altered sensation

Any lesion with 1 major feature in an adult considered for removal

Clinicopathological variants of MM

1. Lentigo maligna melanoma
2. Superficially spreading melanoma
3. Nodular melanoma
4. Acral-lentiginous melanoma
5. Mucosal lentiginous melanomas

Superficial spreading melanomas

-Approximately 70% of cutaneous malignant melanomas are the SSM type and often arise from a pigmented dysplastic nevus.

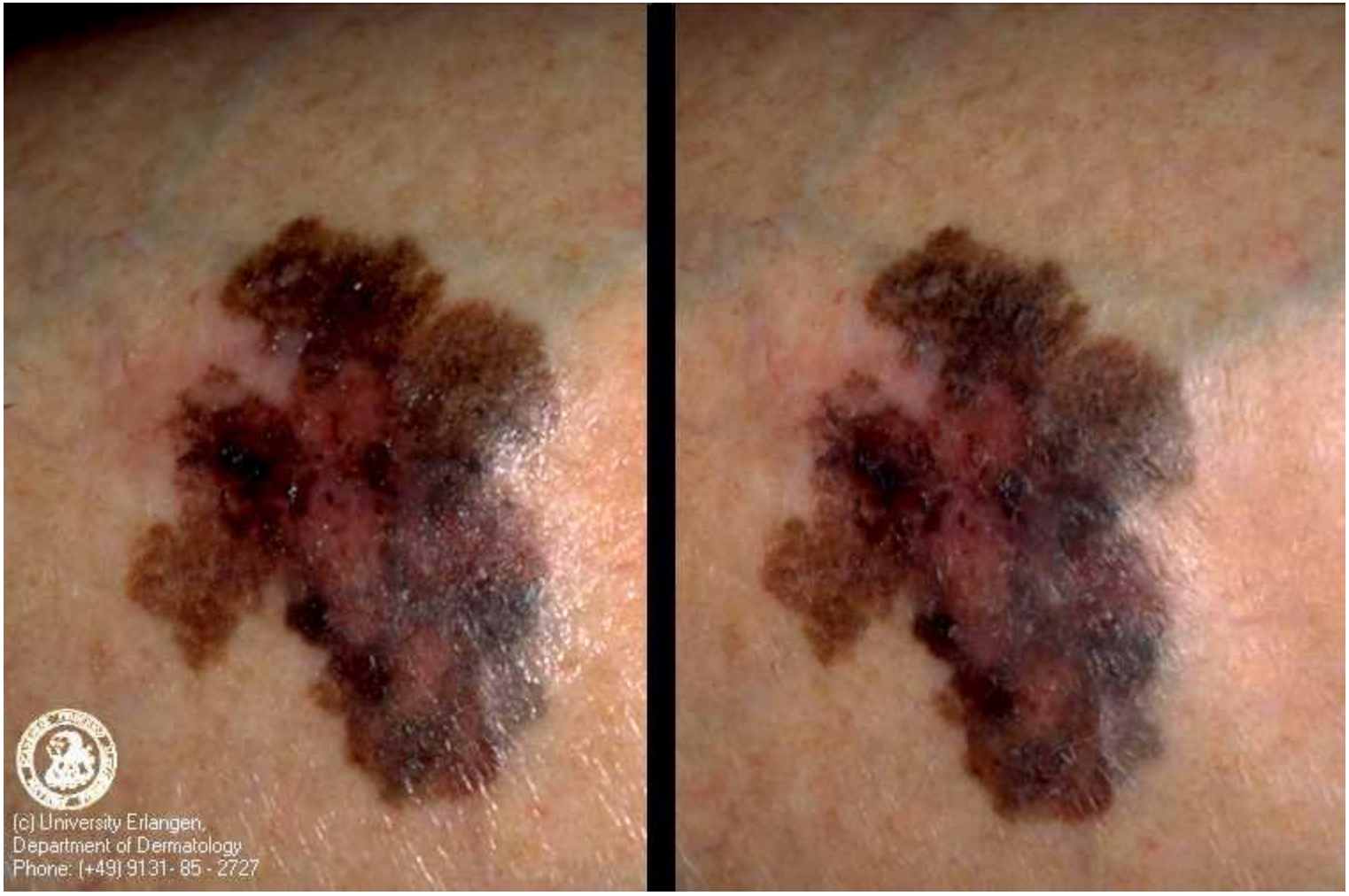
-SSMs typically develop after a long-standing stable nevus changes; typical changes include ulceration, enlargement, or color changes.

- A SSM may be found on any body surface, especially the head, neck, and trunk of males and the lower extremities of females.

Superficial spreading melanomas

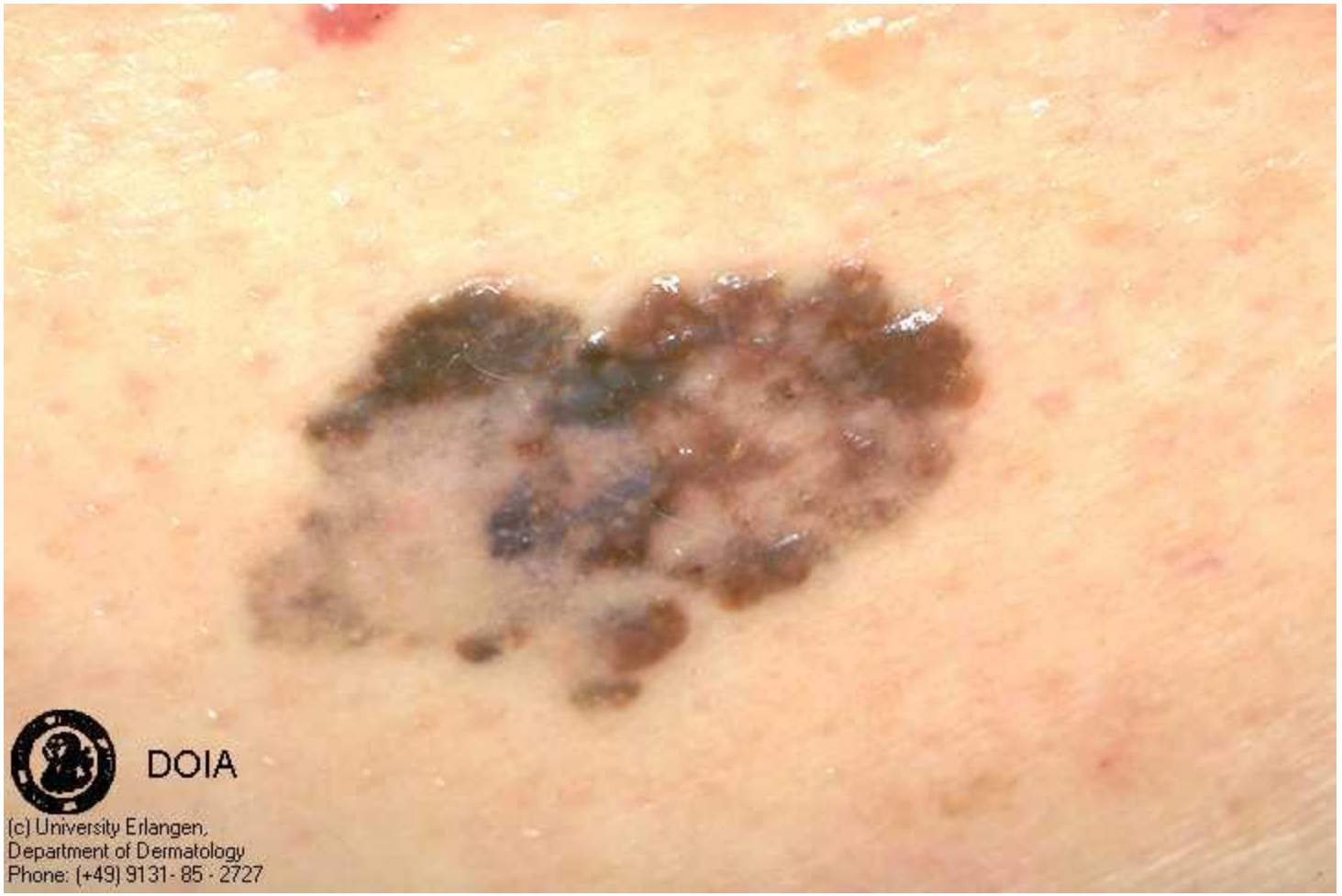
-The upper back of both sexes and the shins in women are the commonest sites.
-The border is often notched by focal regression or asymmetric growth
- As the vertical growth phase develops, skin markings disappear.If regression occurs,these may reapear.
-These lesions grow as much in a year as lentigo maligna does in three to five years. ***Easy bleeding is a sign of malignancy, as is erosion or ulceration***.
-Horizontal or lateral growth into the adjoining epidermis continues for one to five years, before invasion into dermis takes place

Superficial spreading melanomas

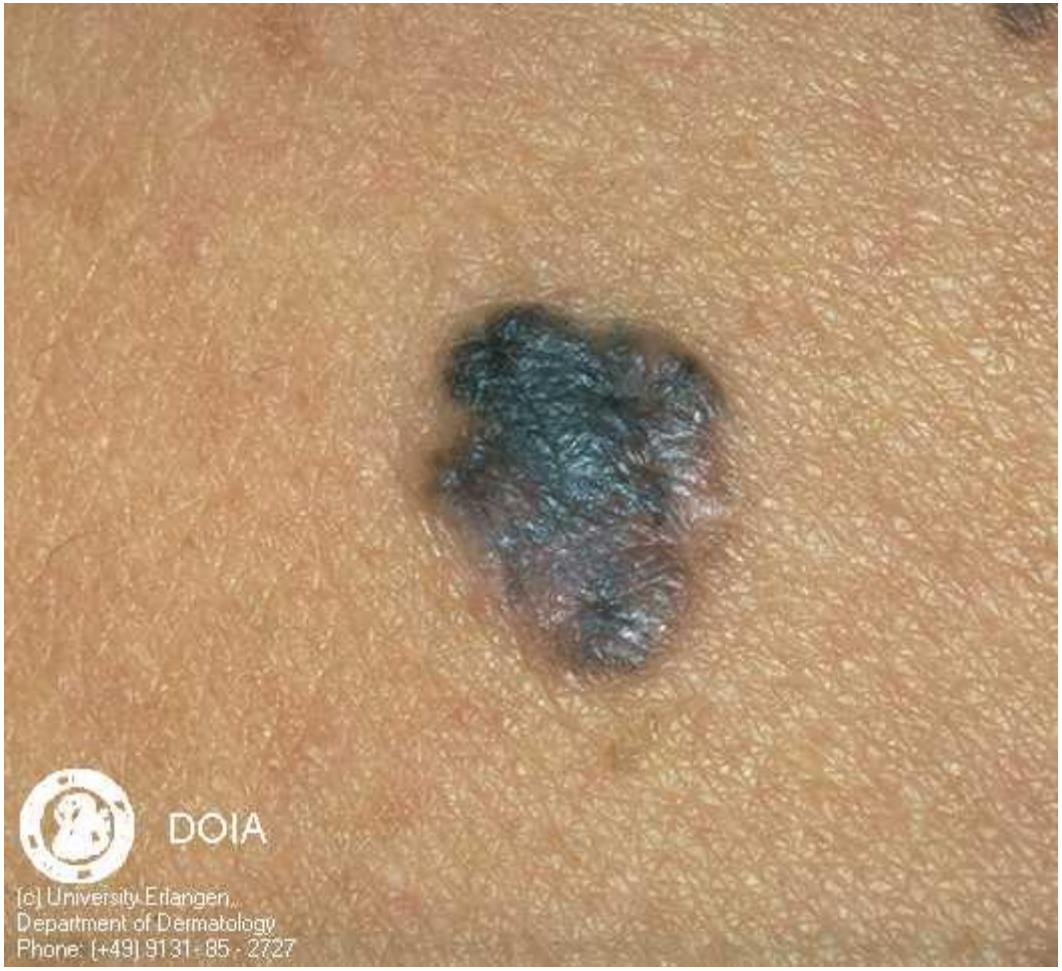


Superficial spreading melanomas

Superficial spreading melanomas



Superficial spreading melanomas



Nodular melanomas

-Nodular melanomas (NMs) represent approximately 10-15% of melanomas and also are found commonly on all body surfaces, especially the trunk of males.

- These lesions are the most symmetrical and uniform of the melanomas and are dark brown or black in color. The radial growth phase may not be evident in NMs; however, if this phase is evident, it is short-lived because the tumor advances rapidly to the vertical growth phase, thus making the NM a highrisk lesion. Approximately 5% of all NMs are amelanotic melanomas.

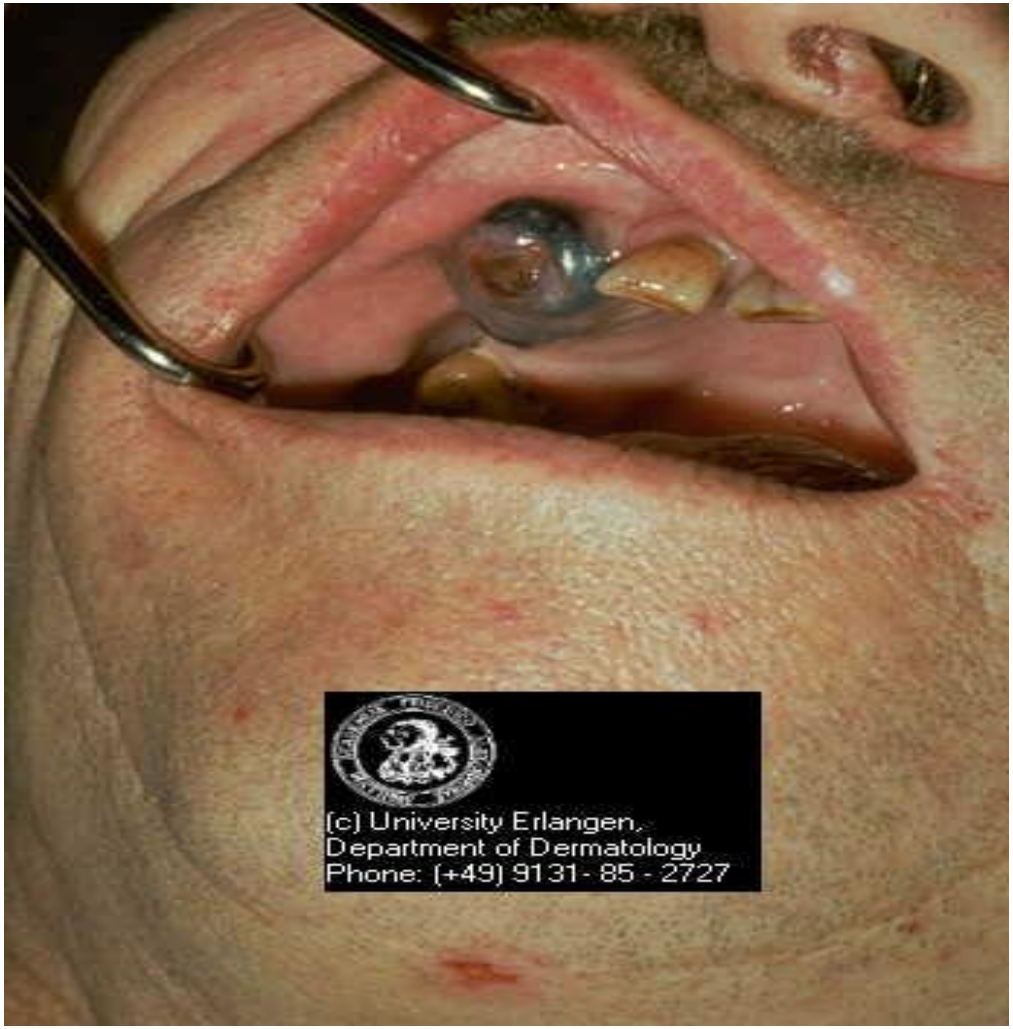
Nodular Melanoma

-the typical lesion may be described as a pigmented papule or nodule of varying size, present for a few months.

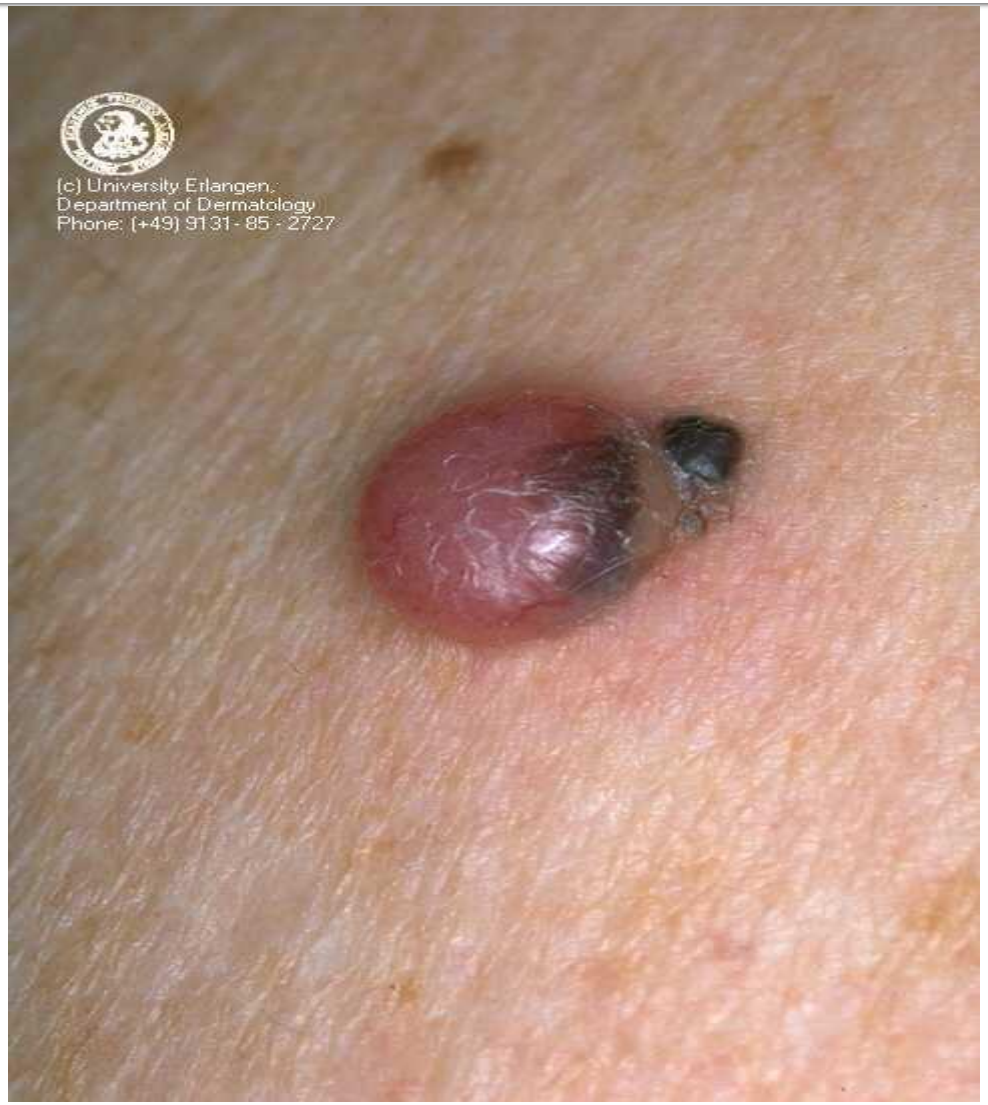
-This lesions arise without a clinically apparent radial growth phase, but usually large atypical melanocytes can be found in the epidermis for several rete ridges beyond the region of vertical growth, at all margins of the excised lesion.

- m/f = 2
- occurs primarily on sun-exposed areas of the head, neck, and trunk.

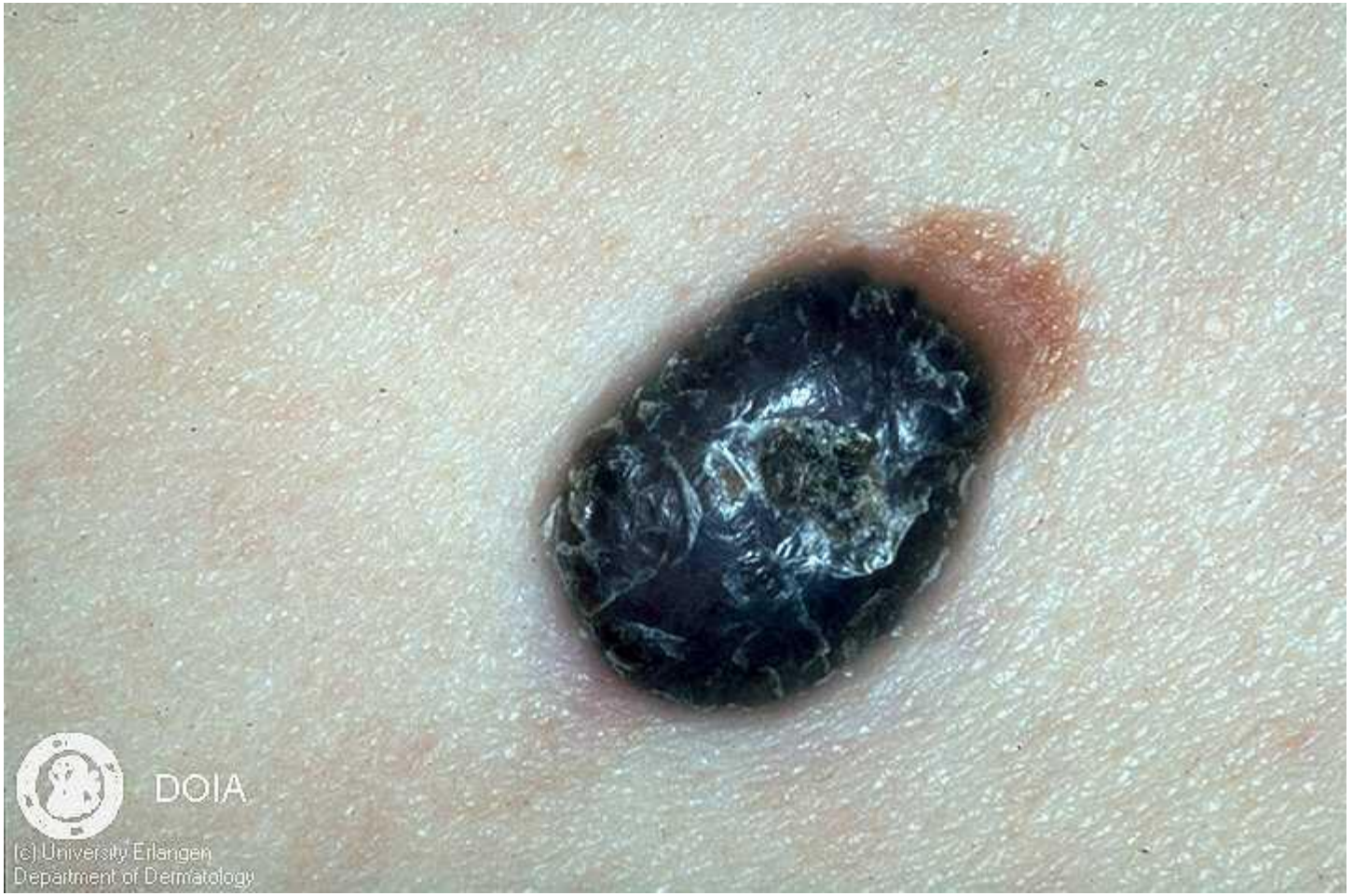
Nodular melanomas



Nodular melanomas



Nodular melanomas



Lentigo maligna melanomas

- LMMs also account for 10-15% of melanomas.

- They typically are found on sunexposed areas (eg, hand, neck).

- LMMs may have areas of hypopigmentation

- LMMs arise from a lentigo maligna lesion.

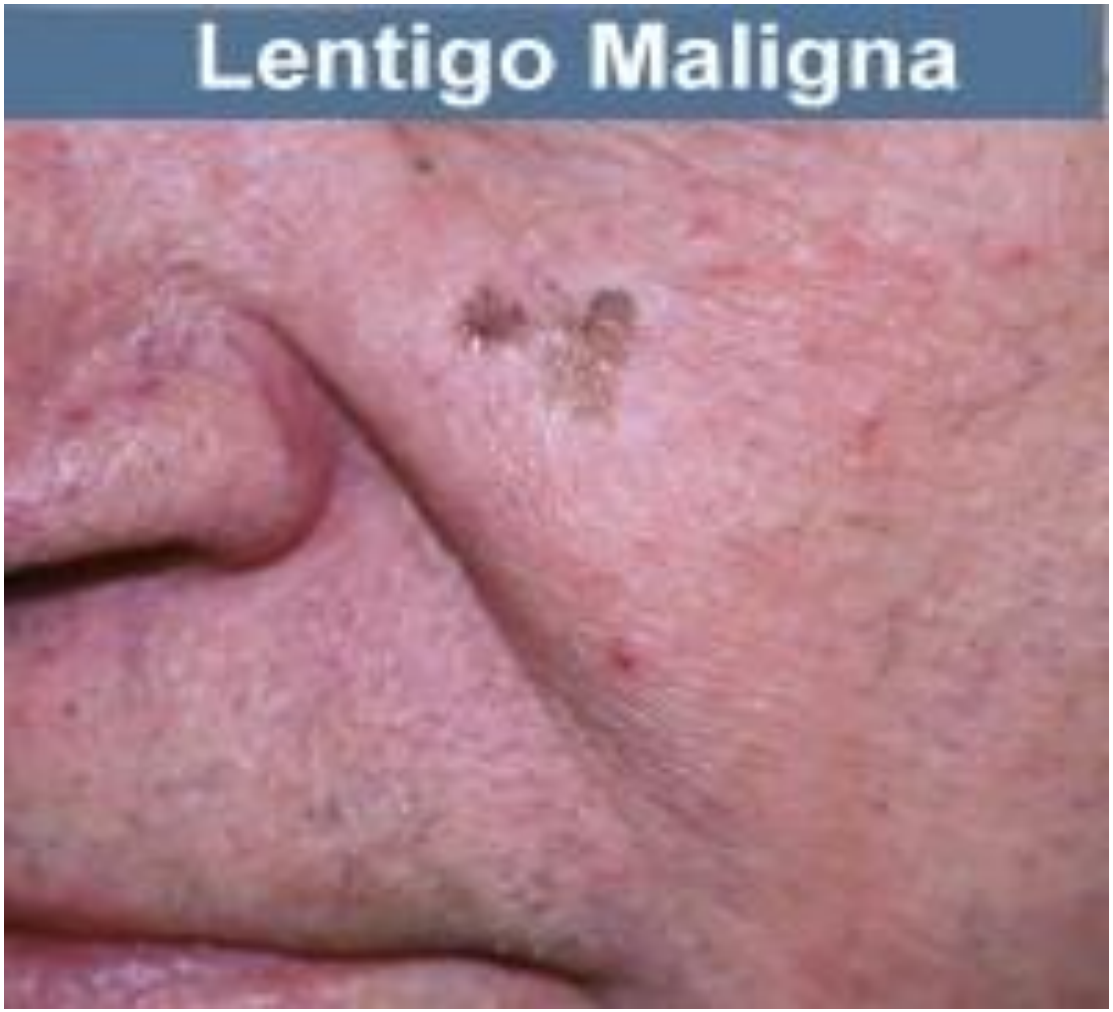
lentigo maligna :

-Lentigo maligna begins as a tan macule that extends peripherally,with gradual darkening,over the course of several years.

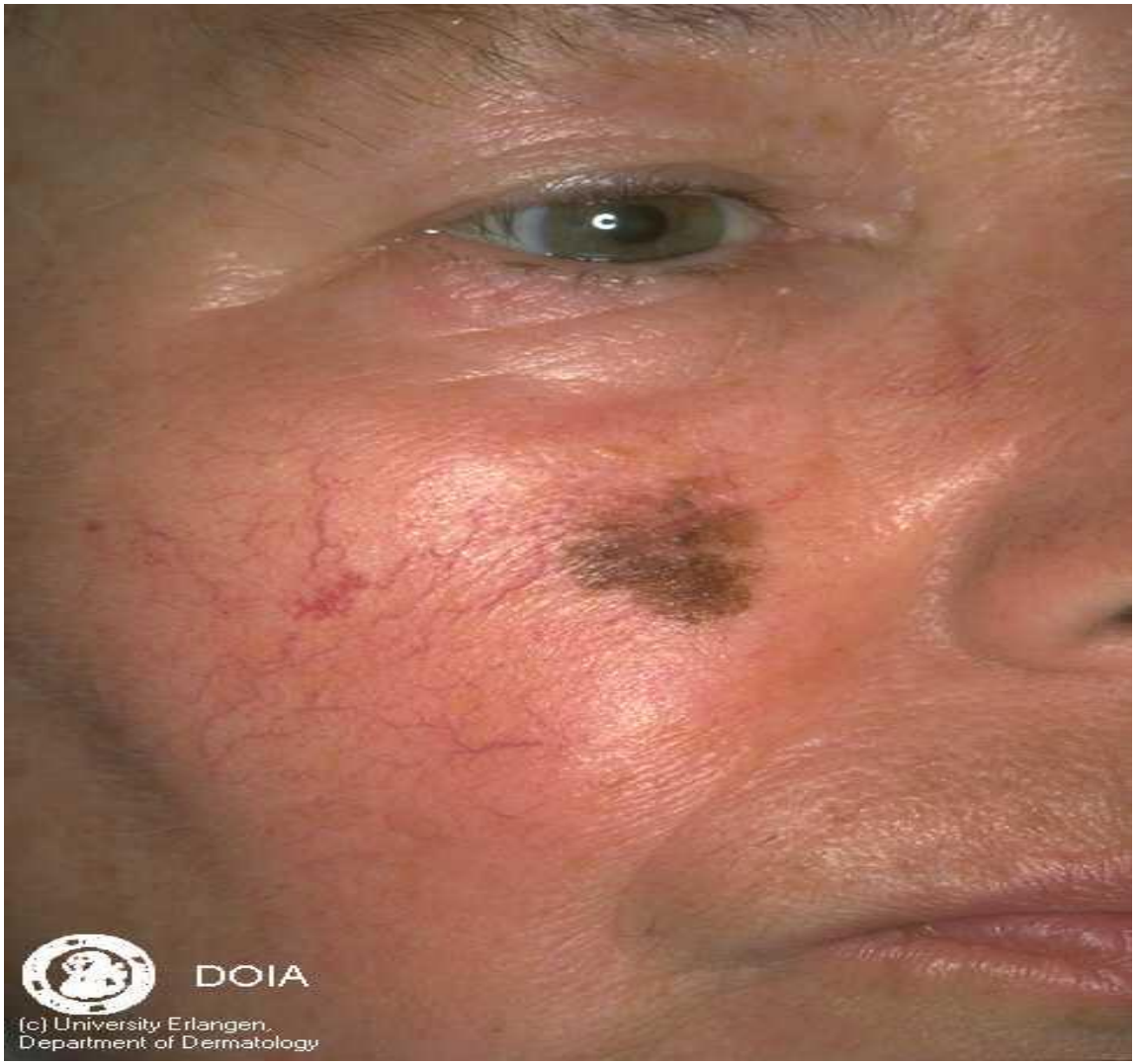
-After a radial growth period of 5 to 20 years,vertically growing melanoma usually develops within it
This is often called ***lentigo maligna melanoma***.

-A palpable nodule within the original macular lesion is the best evidence that this has occurred , though there may be darkening or bleeding as well.

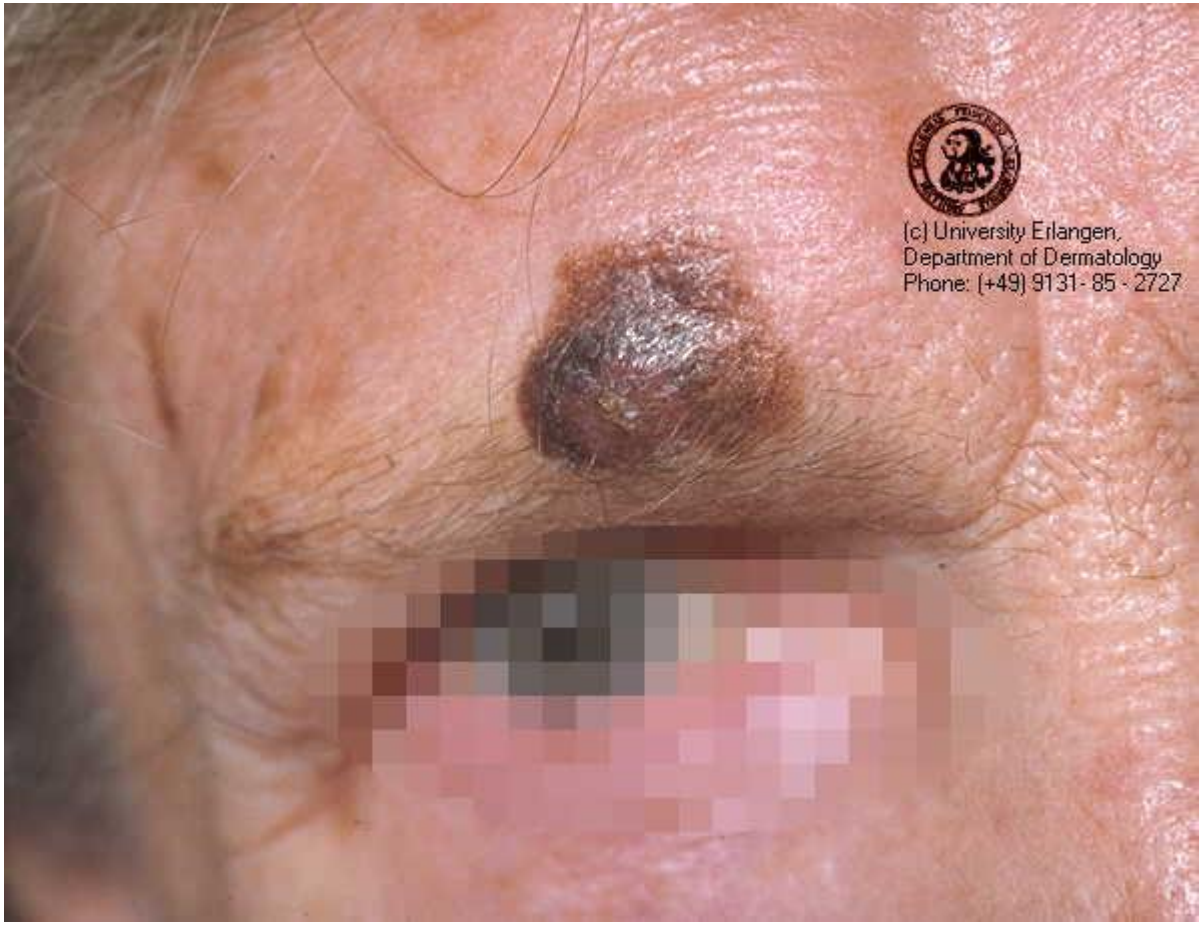
this occurs equally in men and women,usually in their sixties or seventies , in chronically sun-damaged skin , most often on the face


Lentigo Maligna

LMM



LMM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Acral lentiginous melanomas

-ALMs are the only melanomas that have an equal frequency among blacks and whites.

-They occur on the palms, soles, and subungual areas.

- Subungual melanomas often are mistaken for subungual hematomas (splinter hemorrhages).

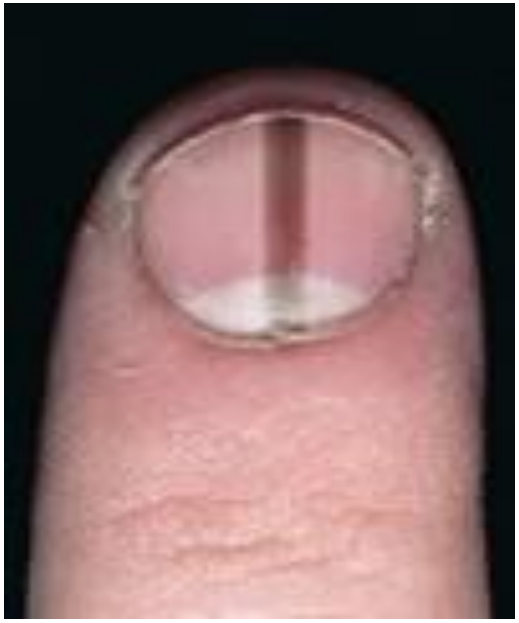
- Like NM, ALM is extremely aggressive, with rapid progression from the radial to vertical growth phase.

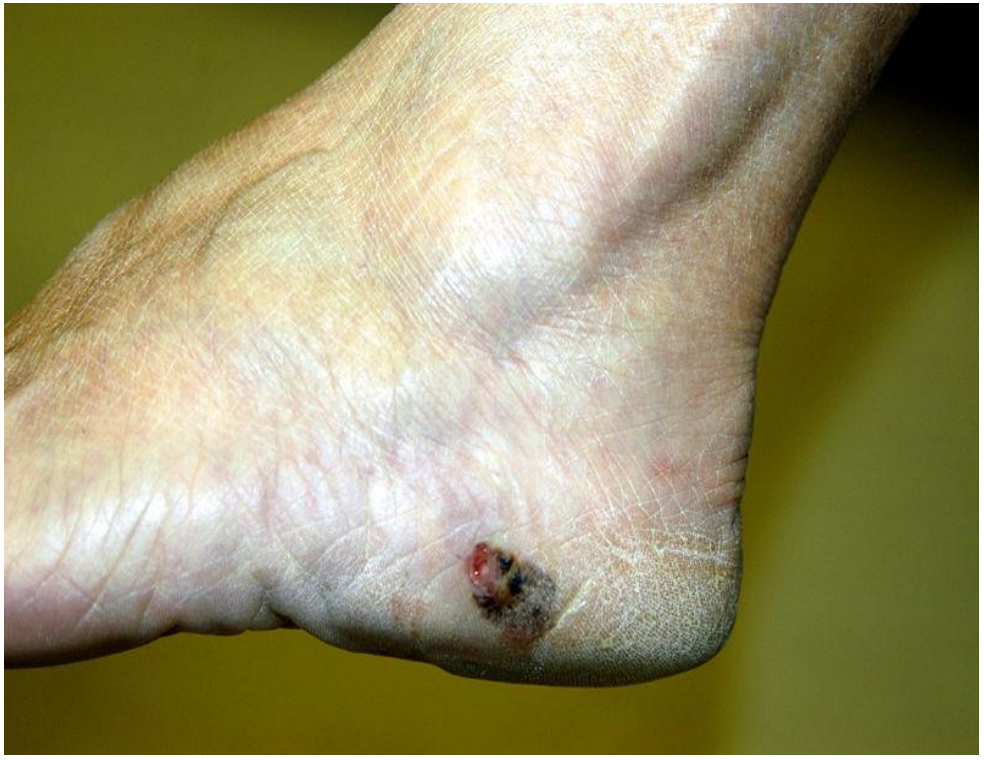
Acral-lentiginous melanoma

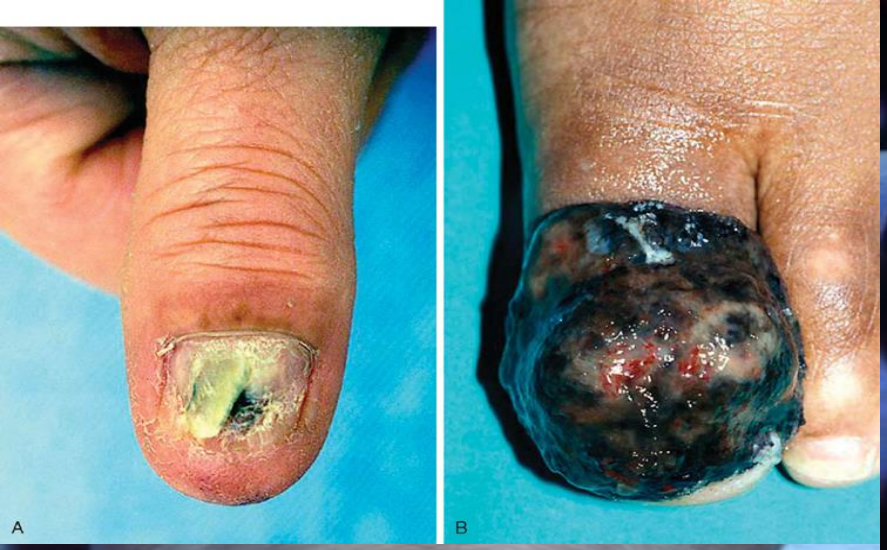
-An irregular, enlarging black macule on palm, sole, digit tip, or nail fold or bed is virtually diagnostic.

-The thumb and the hallux are more frequently involved than the other digits.

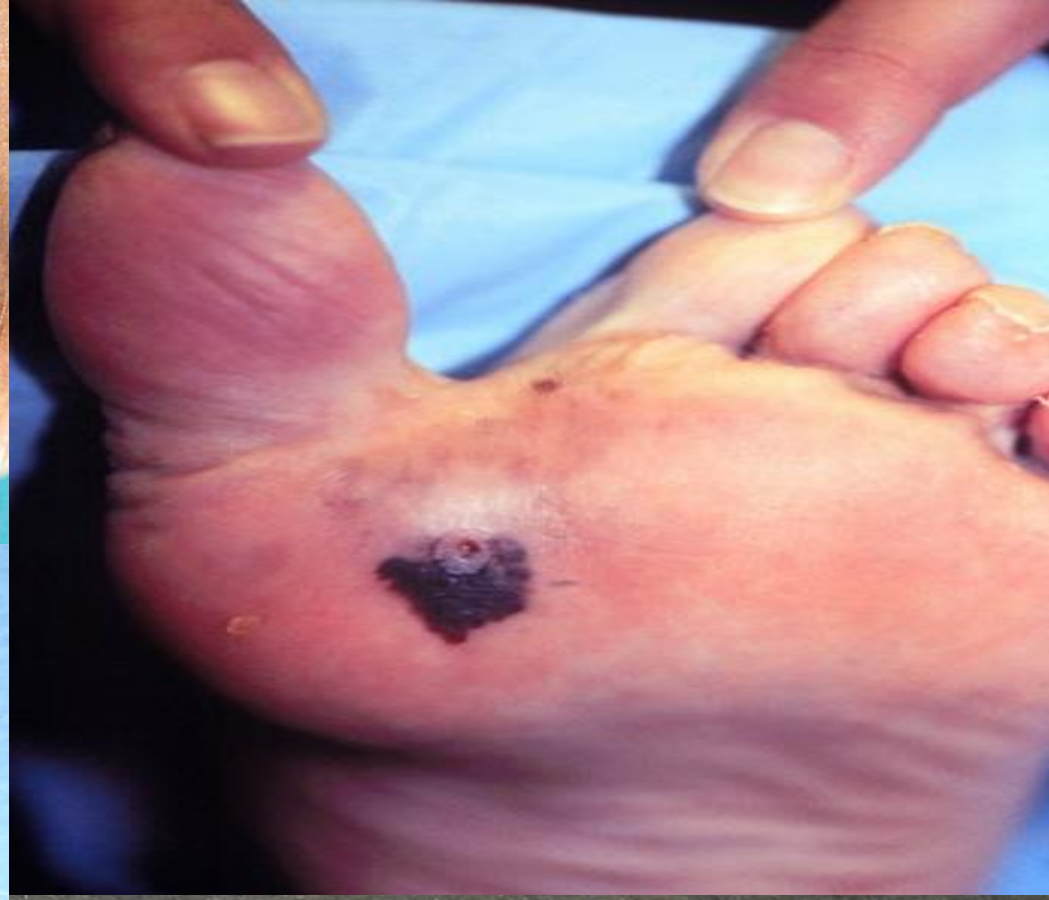
-Hutchinson's sign, a black discoloration of the proximal nail fold at the end of a pigmented streak

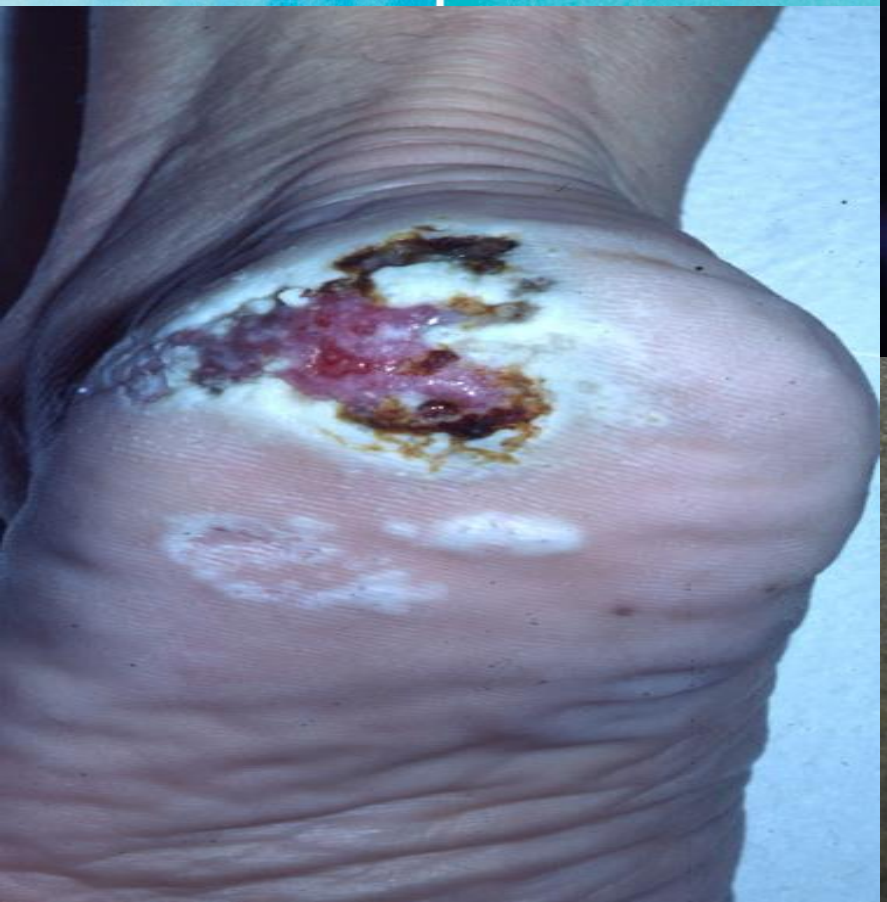


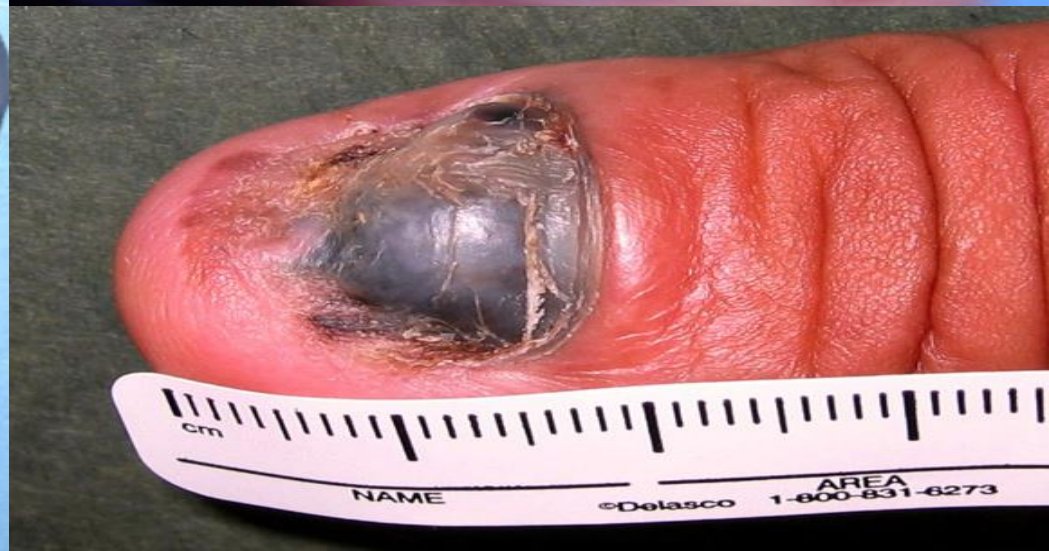



A

B



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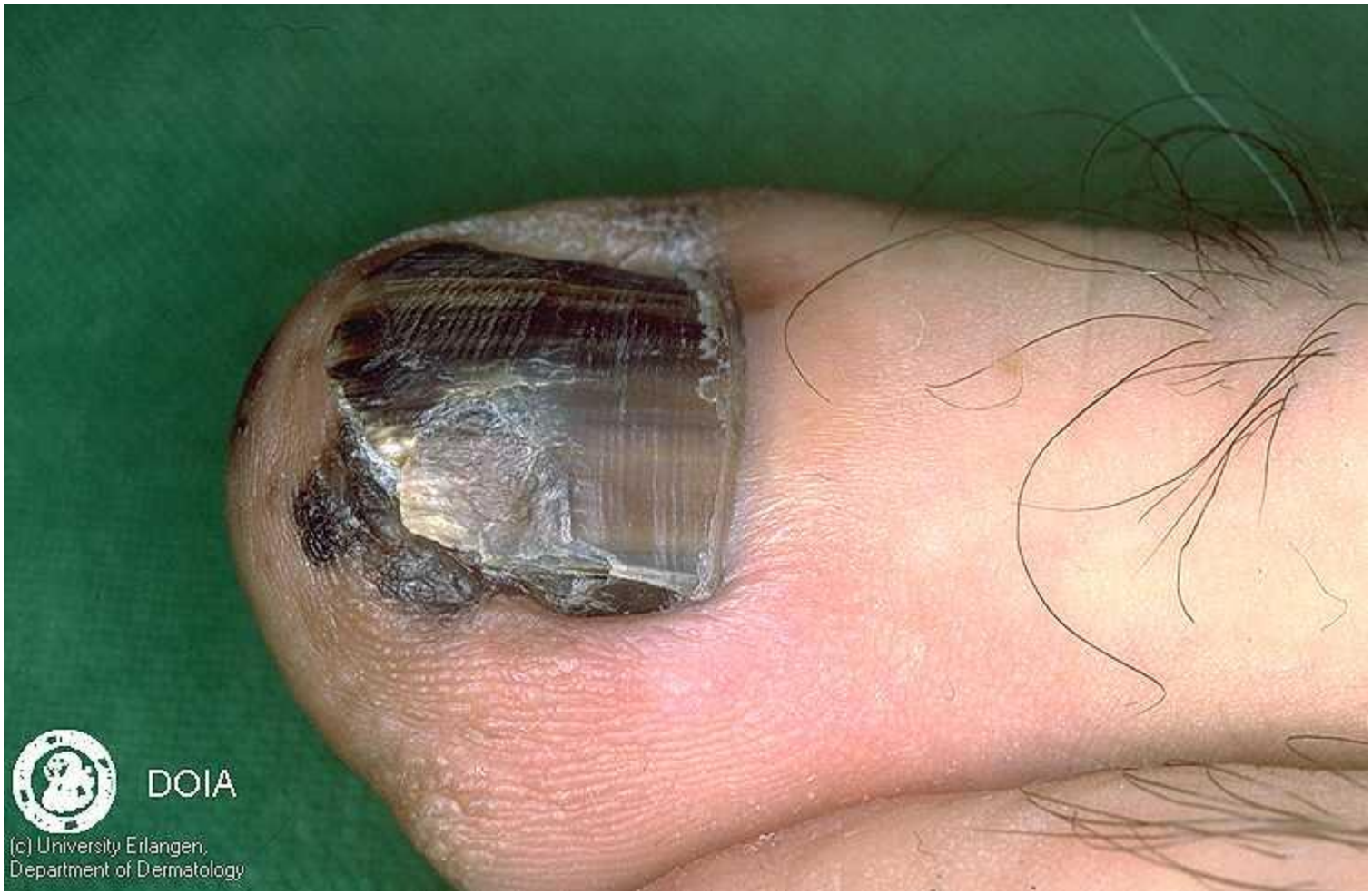
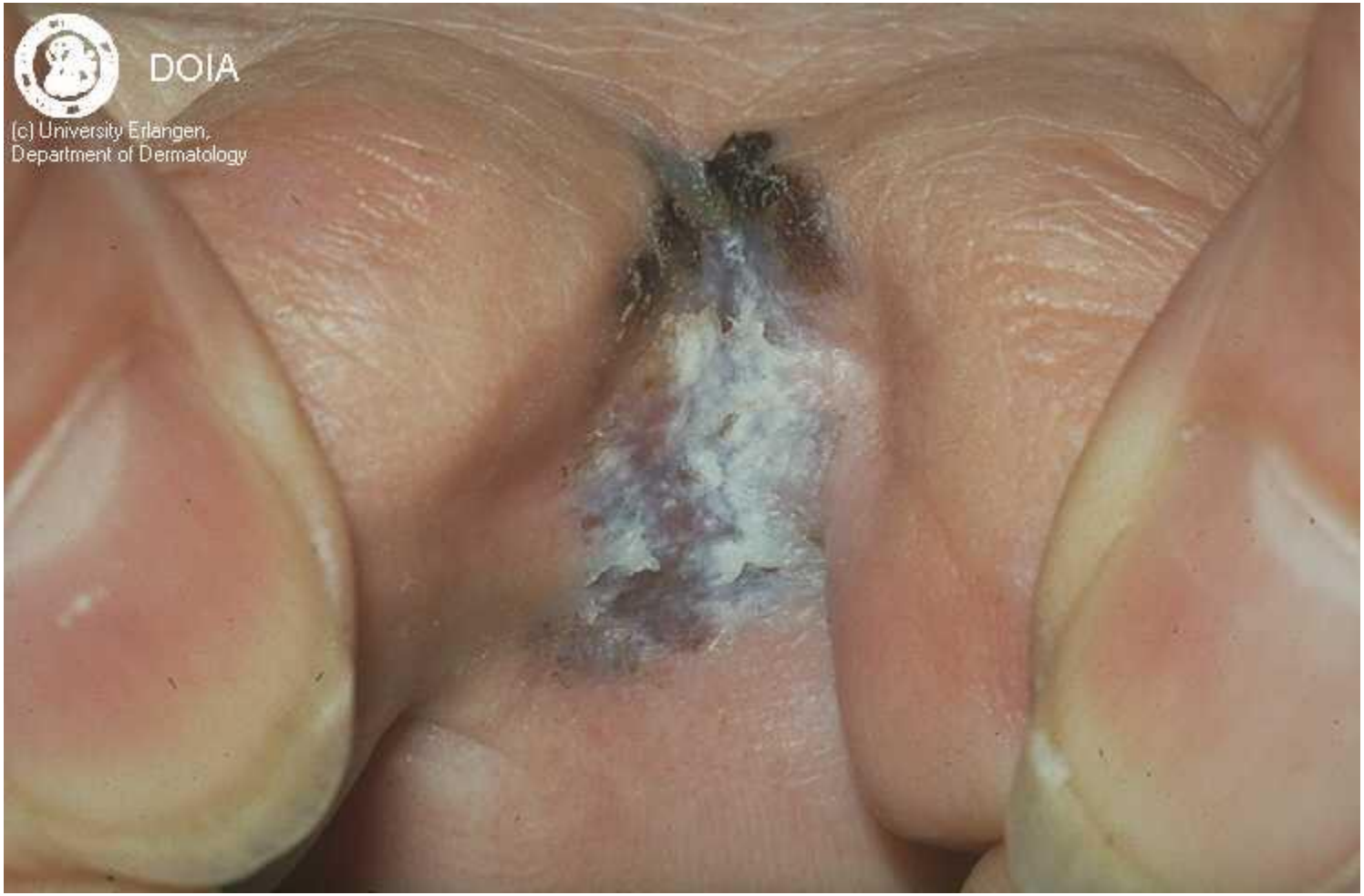
Acral-lentiginous melanoma



Acral-lentiginous melanoma



Mucosal lentiginous melanomas

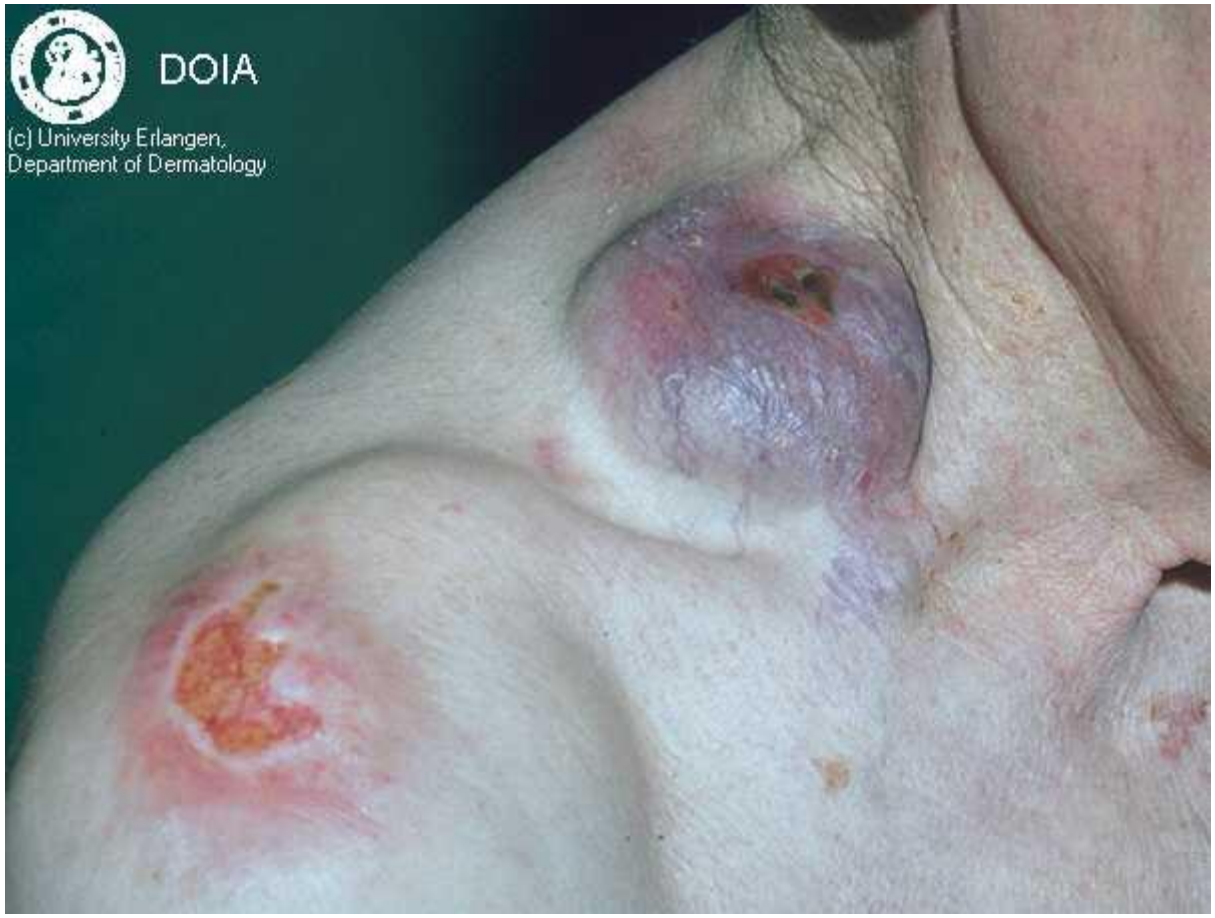
-MLMs develop from the mucosal epithelium that lines the respiratory, GI , and genitourinary tracts.

- These lesions account for approximately 3% of the melanomas diagnosed and may occur on any mucosal surface, including the conjunctiva, oral cavity, esophagus, vagina, female urethra, penis, and anus.

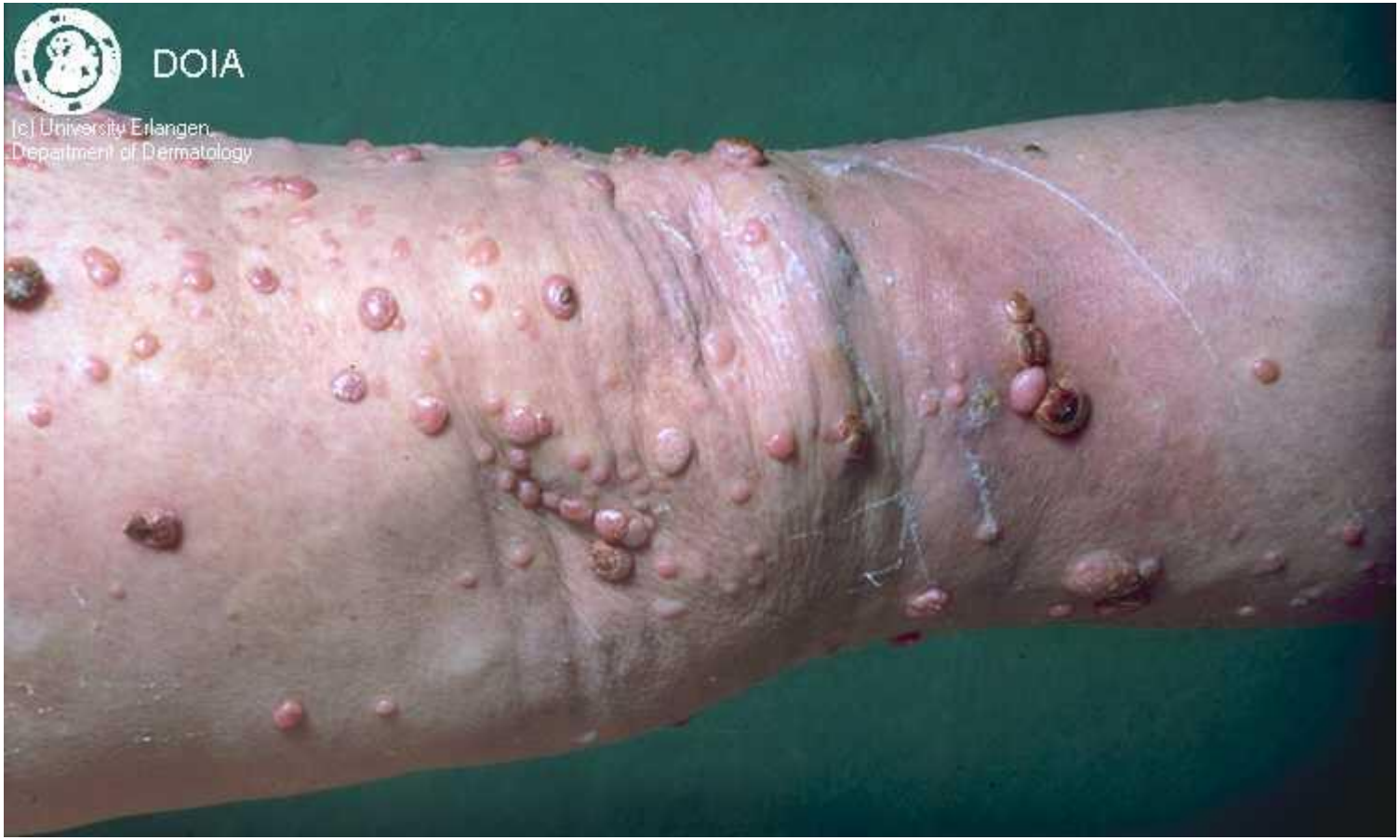
-*The most common clinical presentation = irregular macular pigmentation .*

-MLMs appear to have a more aggressive course than cutaneous melanomas, although this may be because they commonly are diagnosed at a later stage of disease than the more readily apparent cutaneous melanomas.

Malignant Melanoma, Metastatic



Malignant Melanoma, Metastatic



Differential Diagnosis

- Pigmented basal cell carcinoma
- Darkly pigmented seborrheic keratosis
- Pyogenic granuloma
- Kaposi's sarcoma
- Subungual traumatic hematoma
- Senile angioma
- Junction and compound nevus

Staging

Clark staging

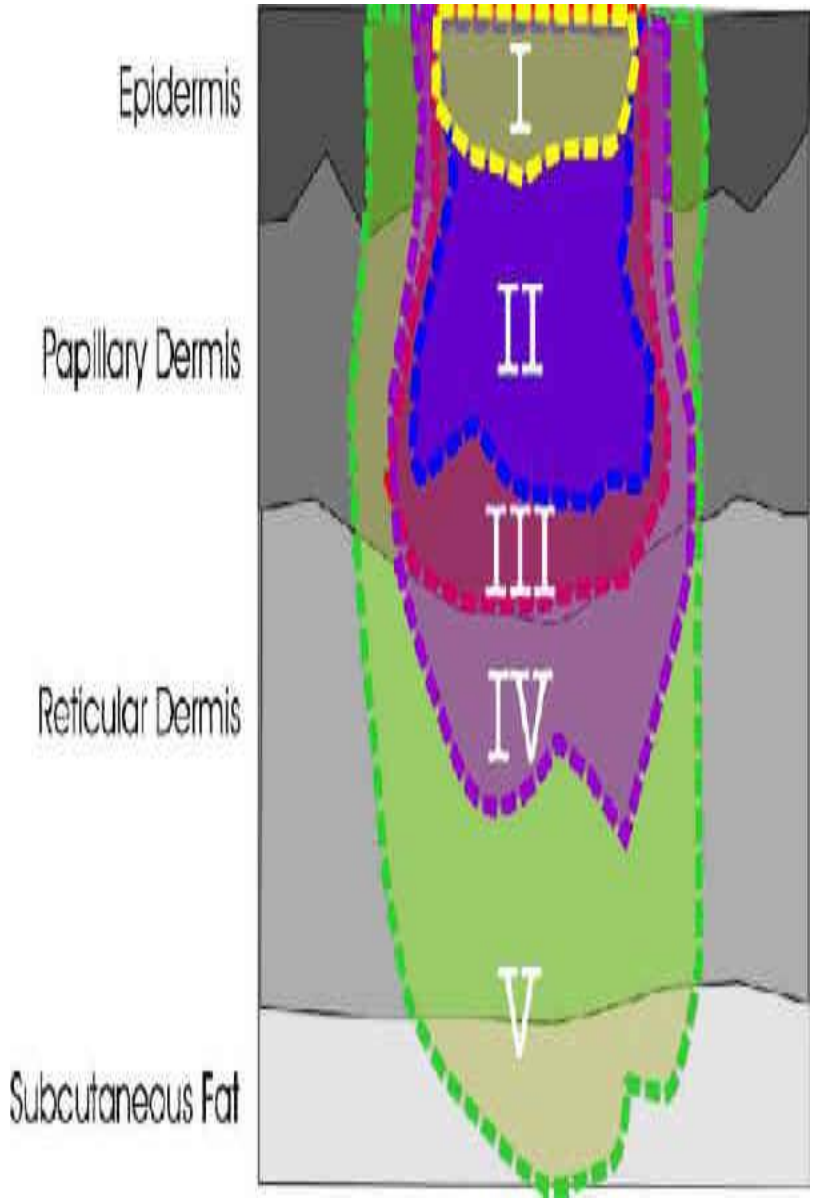
Level I - All tumor cells above basement membrane (in situ)

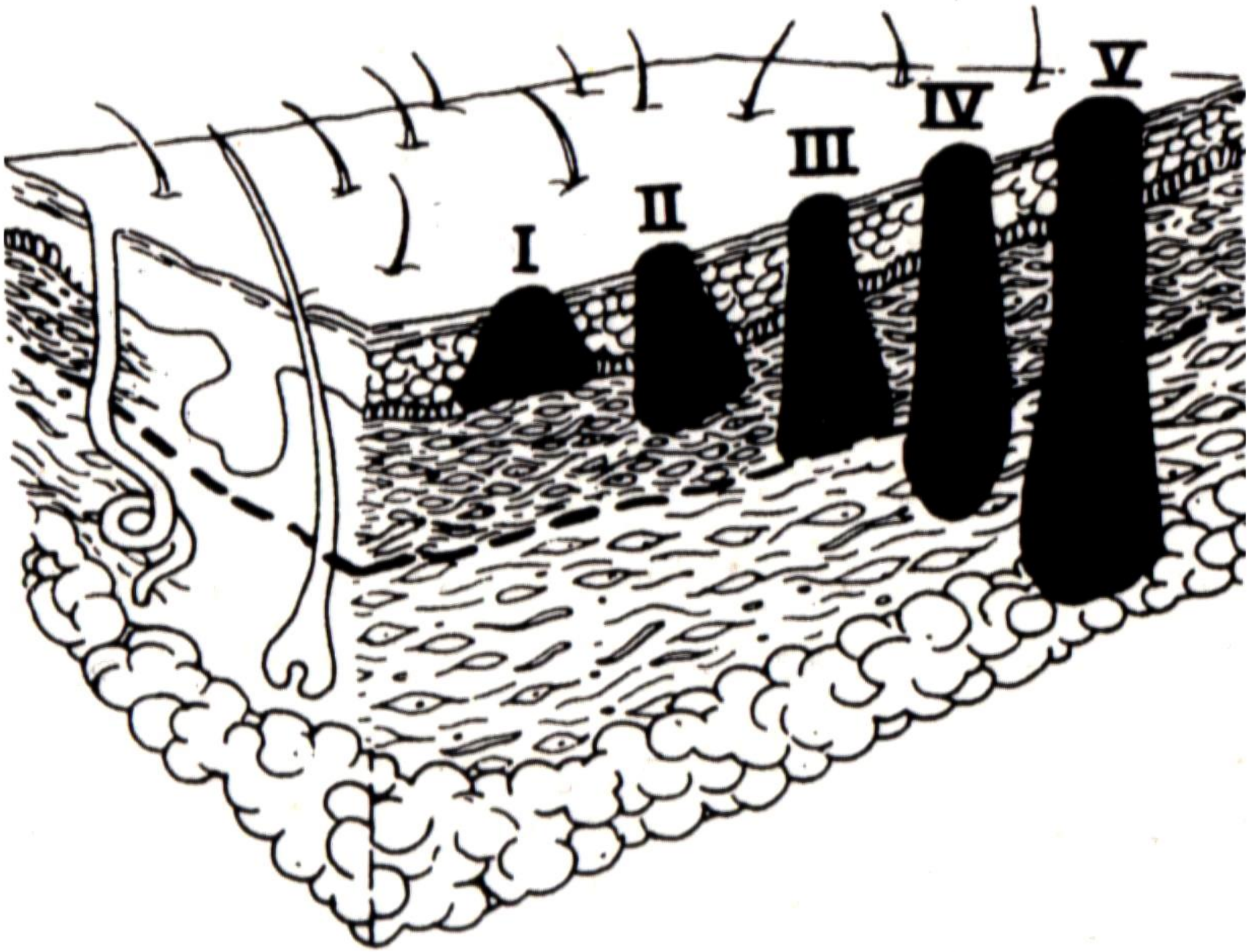
Level II - Tumor extends into papillary dermis

Level III - Tumor extends to interface between papillary and reticular dermis

Level IV - Tumor extends between bundles of collagen of reticular dermis (extends into reticular dermis)

Level V - Tumor invasion of subcutaneous tissue




I
II
III
IV
V

Breslow classification (thickness)

-Tumour thickness with Breslow method is the most valuable prognostic guide .

- measure the distance between the overlying granular layer & the deepest invasive area .

1 - Less than or equal to 0.75 mm
2 - 0.76-1.5 mm
3 - 1.51-4 mm
4 - Greater than or equal to 4 mm

Poor prognostic factors

- tumour thickness (most importany)
- ulceration
- excessive mitosis
- tumour cells in vessles
- tumour vascularity in base of tumour
- advance age
- trunk vs extrimities

biopsy

- all lesion suspected melanoma should have an excisional bx with 1-2 mm clinically normal skin
- when an excisional bx is not practical = an incisional bx provided definitive surgery follows within 1 – 2 weeks
- punch bx should not be routinely performed
  - false tumour thickness may be obtained
  - risk of displacing melanoma cells deeper into dermis

Treatment

-Definitive surgical Tx of primary site :

level 1 (in situ) = excision with 2-5 mm clinical safe margine

invasive MM up to 1mm thick = 1 cm

invasive MM 1 – 2 mm thick = 2 cm

thicker tumour = 3 cm

MM in fingers or toes = amputation