Gross Appearance & Histology of Skin Cancer

Kyle Mannion M.D.

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Actinic Keratosis

- 5-20% will develop squamous/basal cell ca
- Almost solely from solar damage
- Usually develop during 4th decade
- More common with fair skin
- Removal is best treatment, but more often develop
- 5FU for diffuse keratoses

Actinic Keratosis

- Gross appearance
  - Usually erythematous
  - Tan/brown, red, flesh colored
  - Sandpaper-like surface from hyperkeratosis/scale
    - Hyperkeratosis can lead to formation of a cutaneous horn
  - <1cm

Actinic Keratosis

- Histologic appearance
  - Hypertrophic type
    - Hyperkeratosis
    - Thickened epidermis
    - Cytologic atypia in deep epidermis (loss of polarity and pleomorphism, hyperchromatic nuclei)
  - Atrophic type
    - Diffuse thinning of epidermal surface
    - Dyskeratosis in basal cells
    - Parakeratosis>hyperkeratosis

Actinic Keratosis

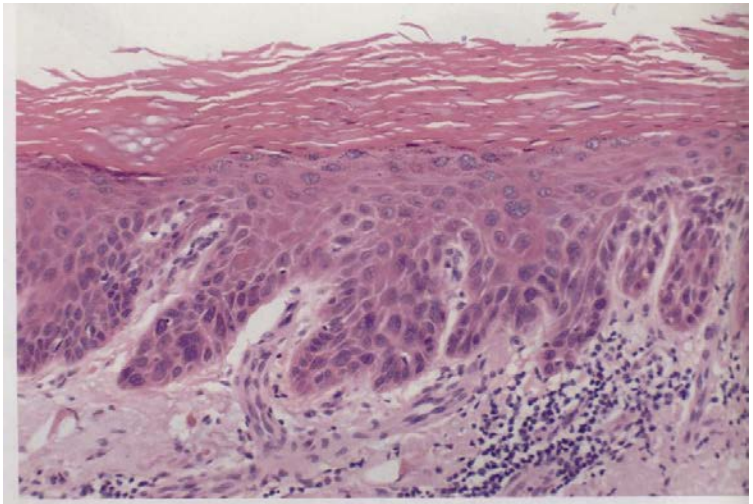
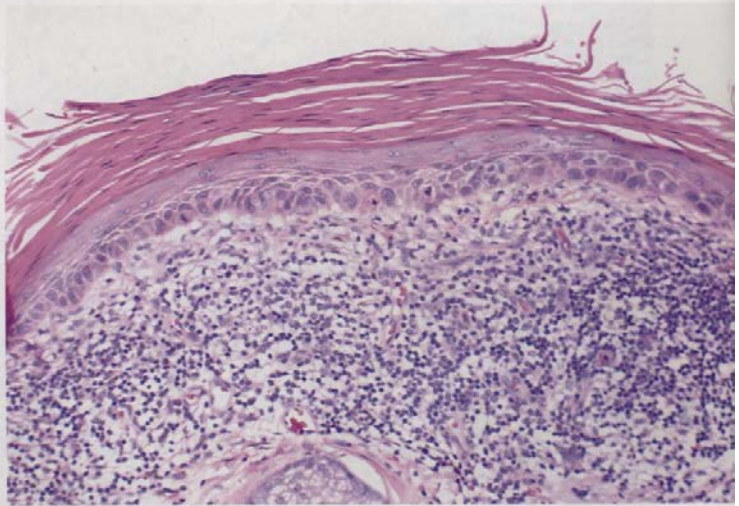
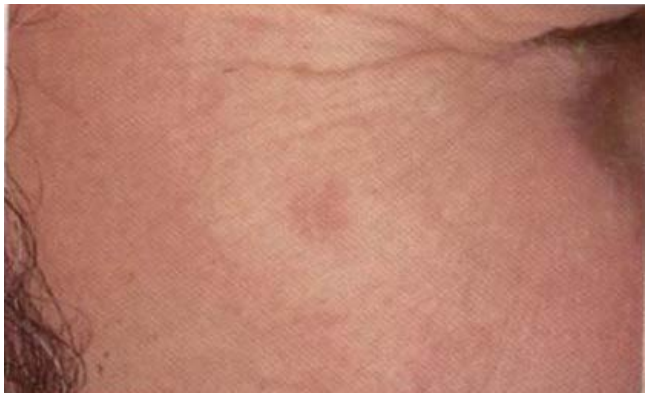


FIGURE A9–21 ACTINIC KERATOSIS: HYPERTROPHIC TYPE. In hypertrophic actinic keratosis, the epidermis is thickened secondary to irregular parakeratosis. The cells in the lower epidermis show a loss of polarity and are atypical and pleomorphic, with hyperchromatic nuclei. Hyperkeratosis is pronounced, and parakeratosis is minimal.

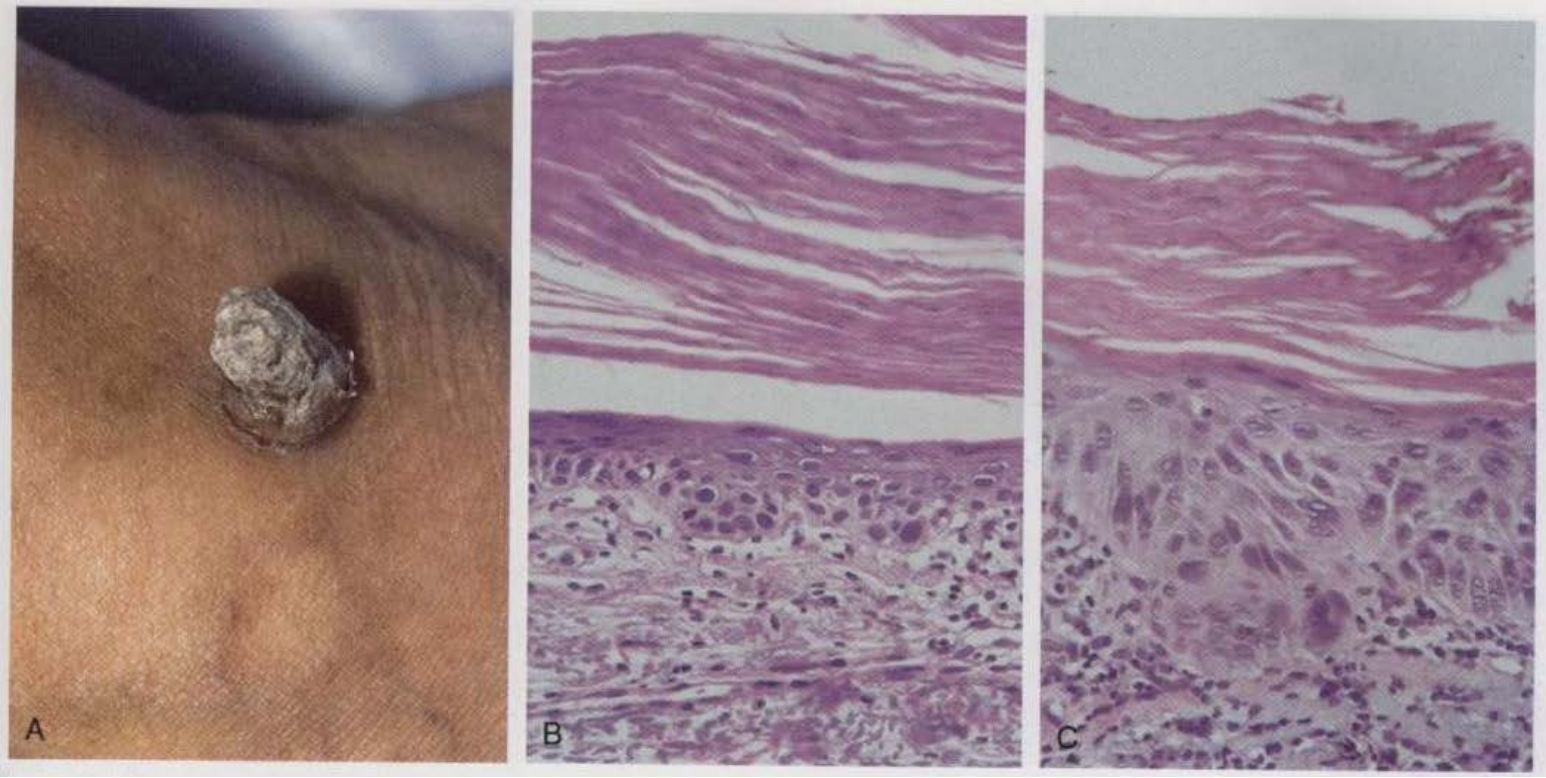
Milikowski p. 502





Cummings plate 1

Actinic Keratosis



Cotran p. 1185

Squamous Cell Carcinoma

- Associated with chronic sun exposure
- Closer to equator and at higher altitude rates approach those of basal cell ca (Cummings p.418)
- Men>women
- Multiple cutanous lesions
- Sometimes adjacent to basal cell ca

Squamous Cell Carcinoma

- Actinic lesions > de novo lesions
- 1% of actinic derived lesions metastasize
- 2-3% of de novo lesions metastasize

Squamous Cell Carcinoma

- Gross appearance
  - Thick, scaly, hyperkeratotic patch
  - Sharply defined red, scaly patches
  - Nodular with central ulceration and a rolled margin
  - Can be exophytic

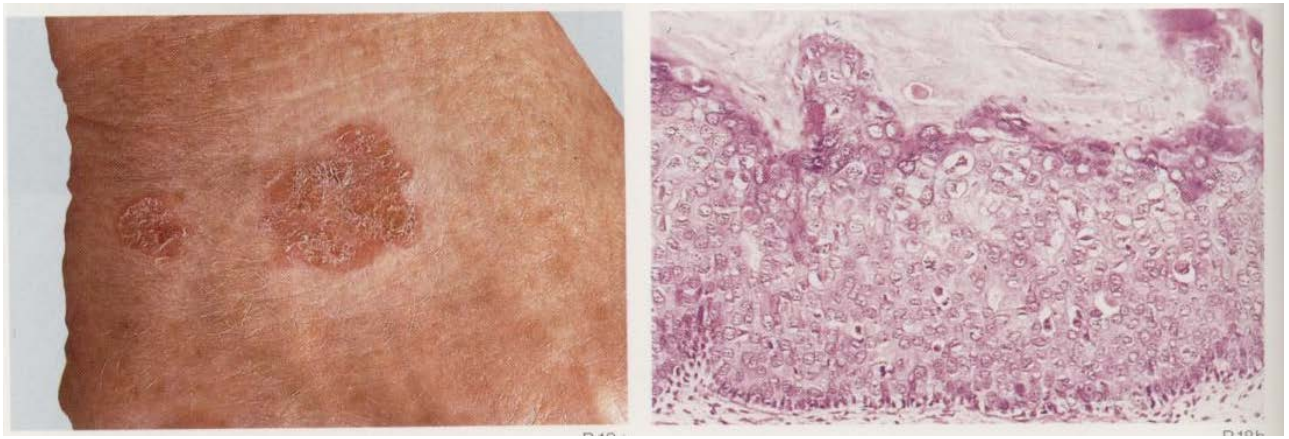
Squamous Cell Carcinoma

- Bowen's disease
  - SCCA in situ
  - Full thickness dysplasia
- Bowenoid SCCA
  - Looks like bowen's
  - Invades through BM
- Adenoid SCCA
  - Nodular ulcerative lesion
  - Often periauricular
- Generic SCCA
  - Most common
  - Highest rate of metastasis
- Verrucous SCCA
  - Verruciform lesions
  - Invades by blunt, pseudopod-like growth
- Spindle SCCA
  - Indistinct clinically

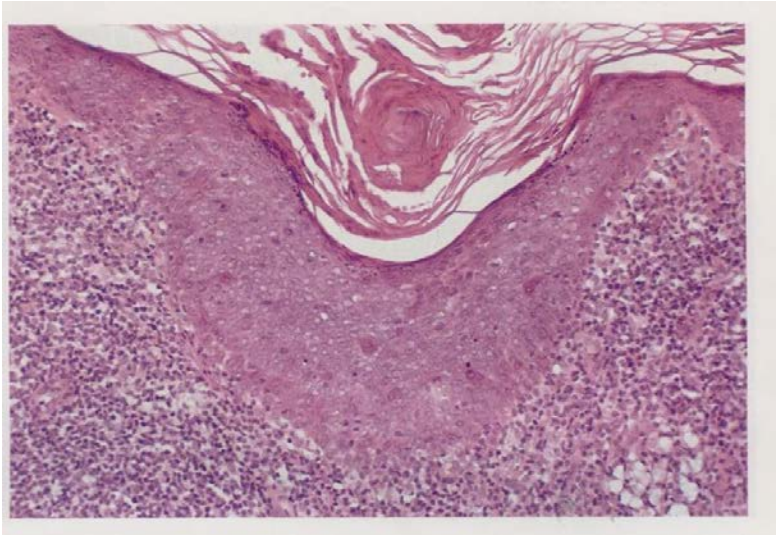
Squamous Cell Carcinoma

- Histology
  - Atypia throughout epidermis with extension into dermis
  - Variable differentiation
    - Polygonal squamous cells in orderly nodules, large zones of keratinization
    - Highly anaplastic cells, only single cell keratinization
  - Intracellular bridges

Squamous Cell Carcinoma

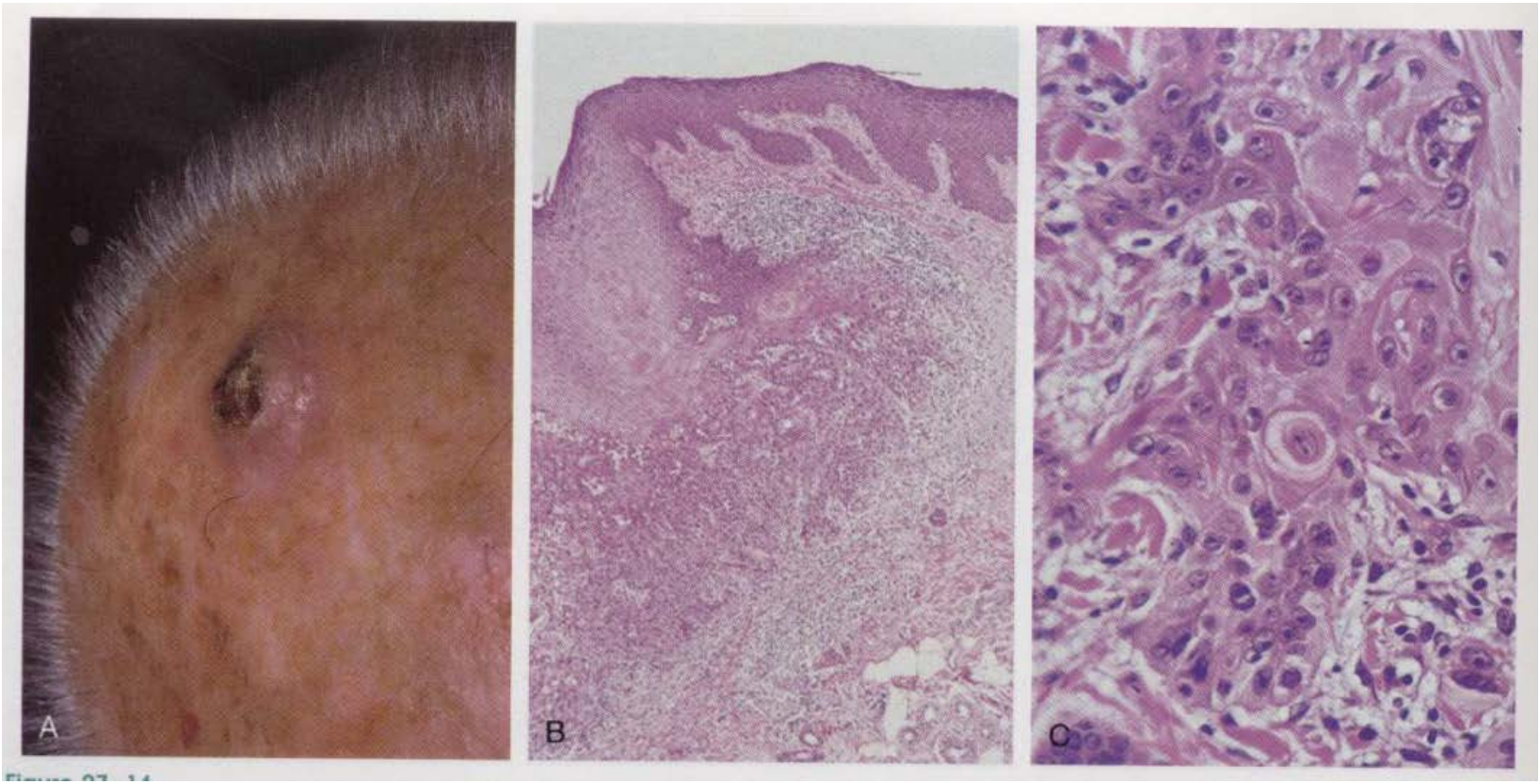


Grundmann p. 210



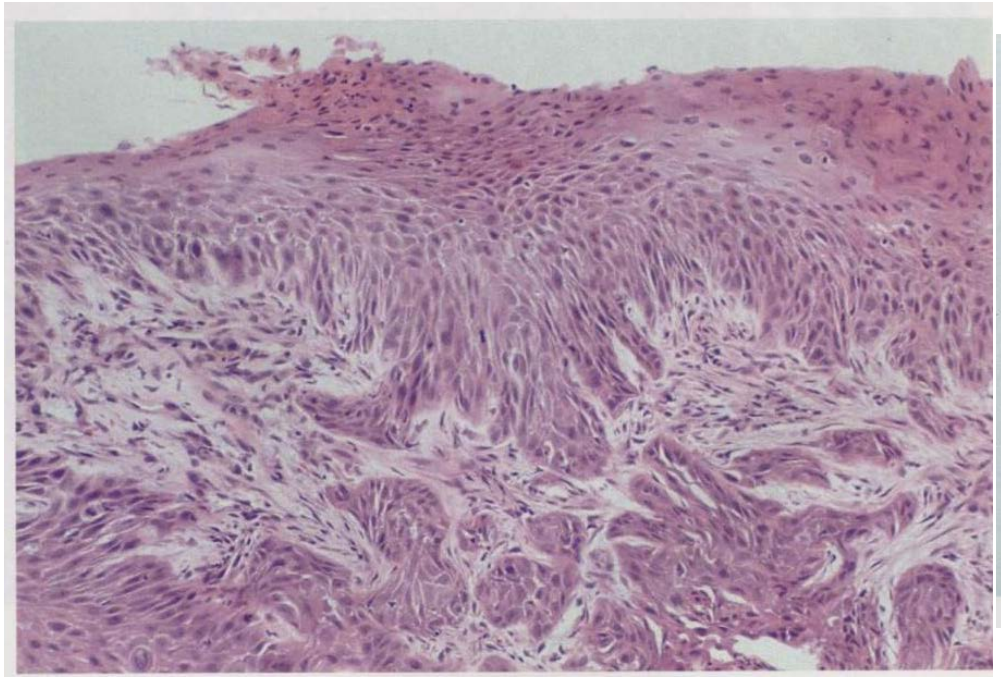
Milikowski p. 503

Squamous Cell Carcinoma

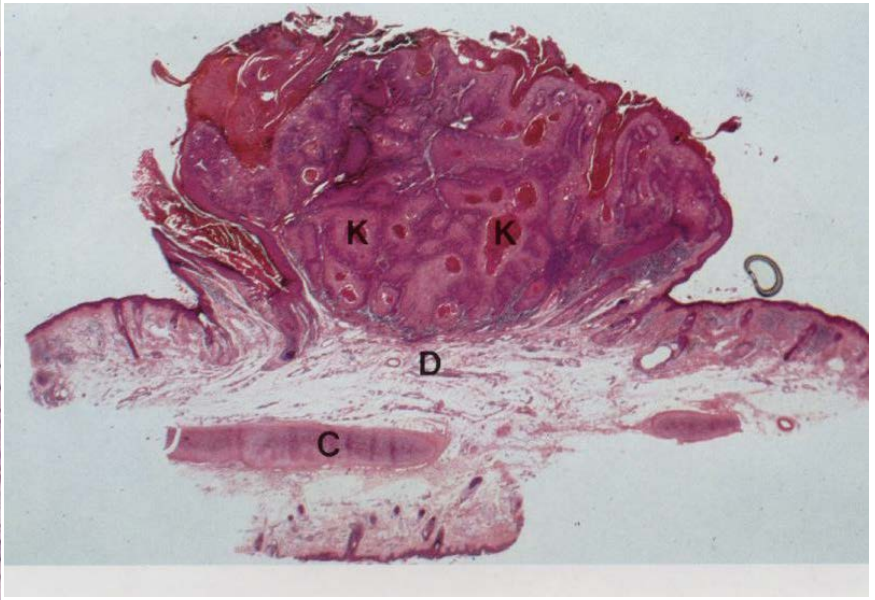


Cotran p. 1186

Squamous Cell Carcinoma

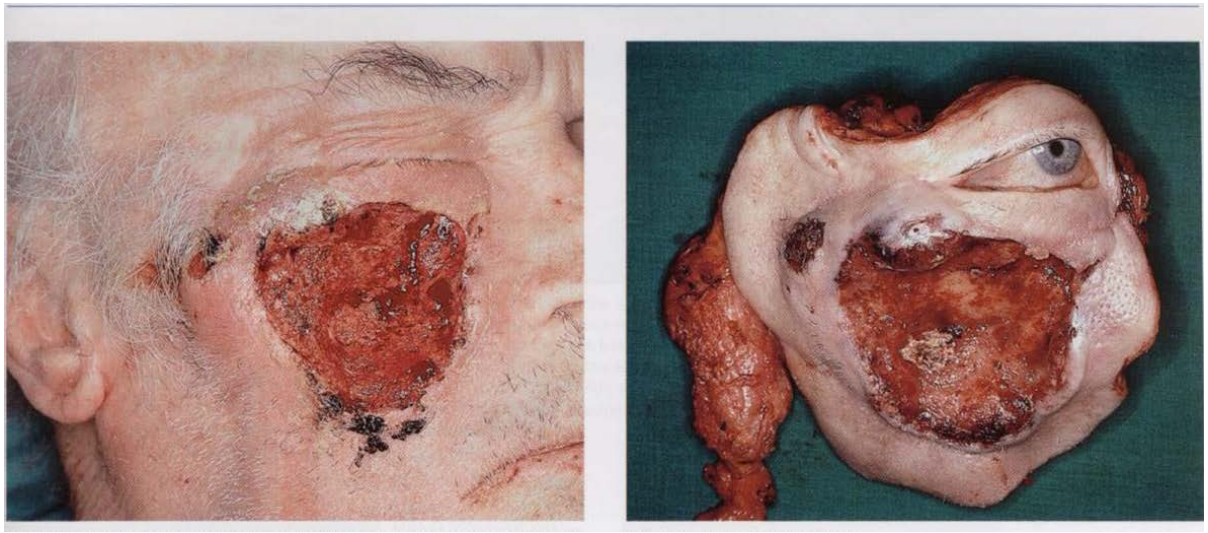


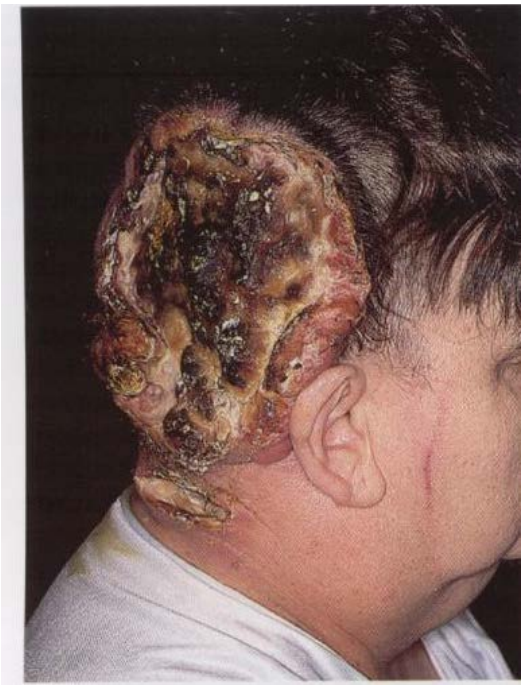
Milikowski p. 503



Wheater p. 224

Squamous Cell Carcinoma





Shah p. 10, 29

Basal Cell Carcinoma

- Most common malignancy
- 20% of all cancers in men
- 10-15% in women
- 86% head and neck
- 25% on the nose
- Most commonly 5^{th}-7^{th} decade
- Locally invasive/destructive

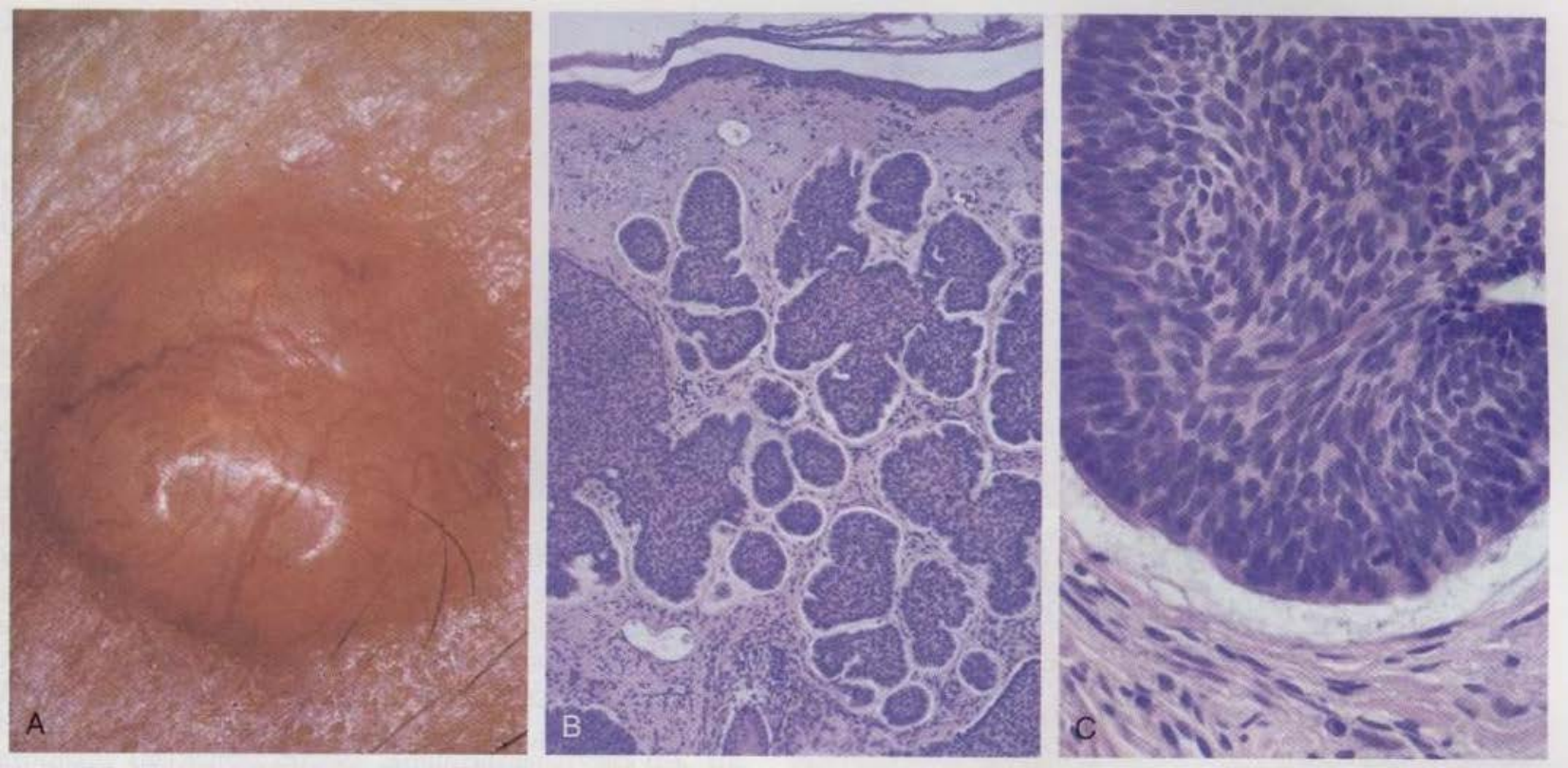
Basal Cell Carcinoma

- Gross appearance
  - Raised, nodular lesions
  - Smooth, clear, pearly border
  - Telangiectasia
  - Pimple-like lesions that bleed and don’t heal
  - Nodular/noduloulcerative most common
  - Can be pigmented

Basal Cell Carcinoma

- Multicentric
  - Multifocal lesion with interconnection superficially
- Morpheaform
  - Yellowish plaque which ulcerates
  - Indistinct margins
  - Subclinical intradermal extension
- Keratotic
  - Typical basal cell ca *plus* squamous, keratinizing cells

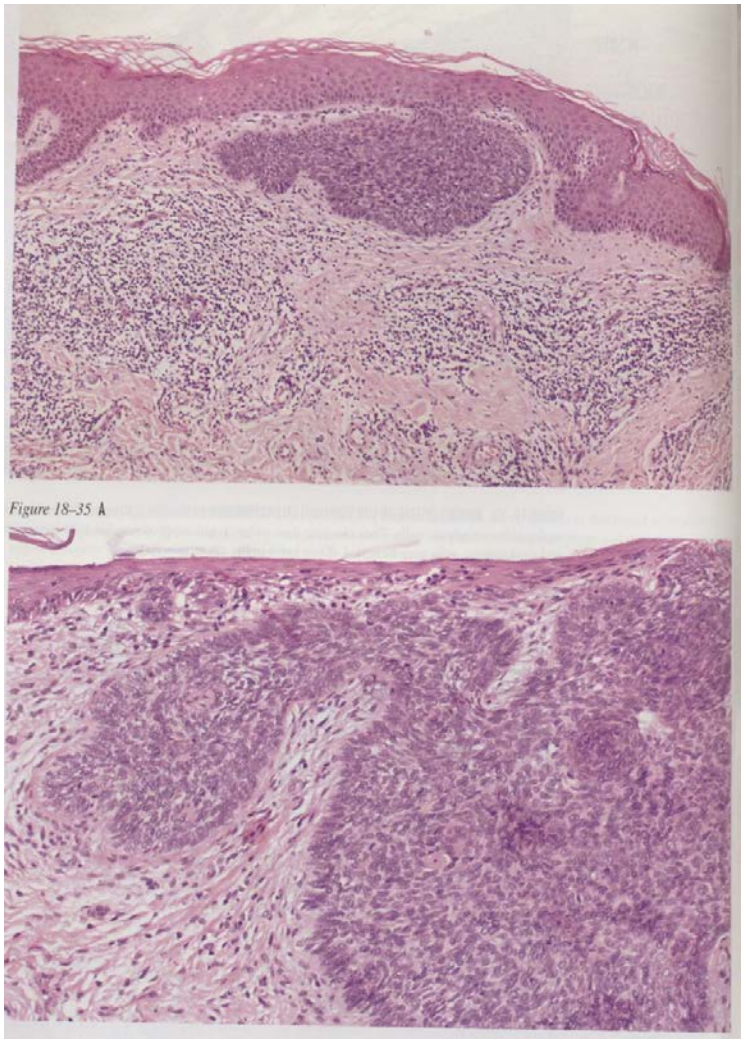
Basal Cell Carcinoma



Cotran p. 1187

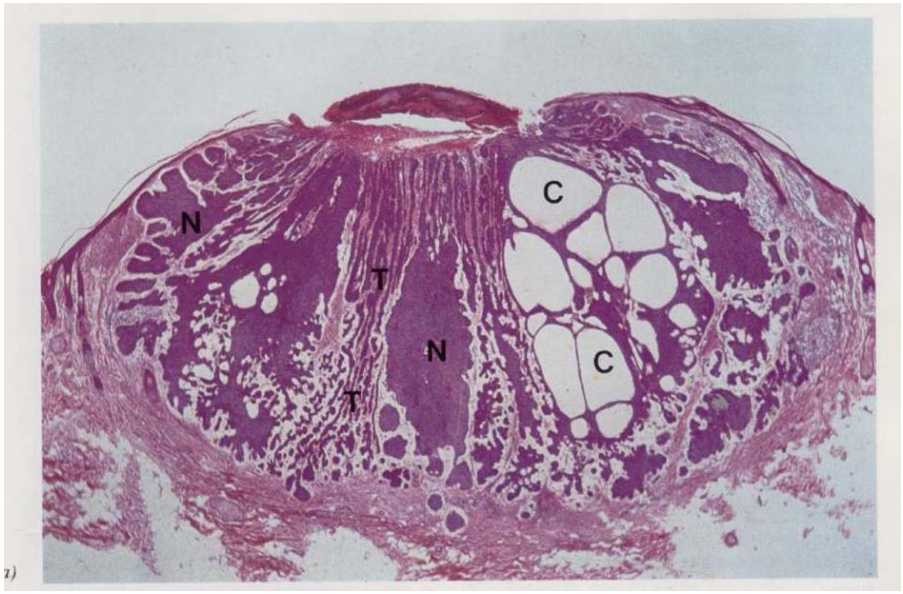
Basal Cell Carcinoma

Cummings plate 1

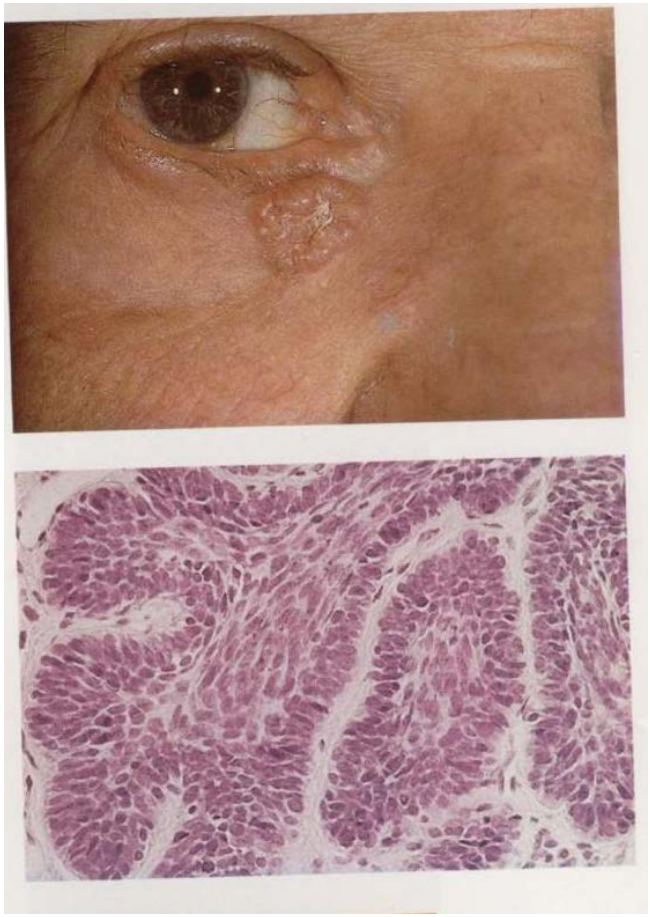


Milikowski p. 504

Basal Cell Carcinoma

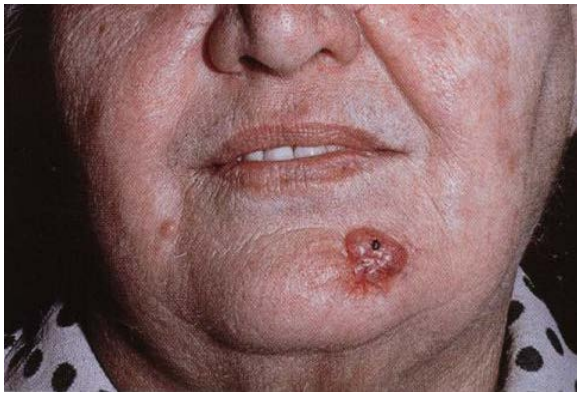


Wheater p. 223



Grundmann p. 211

Basal Cell Carcinoma



Shah p. 10, 26, 31

Nevi

- Congenital or acquired neoplasm of melanocytes
- Gross appearance
  - Tan to brown
  - Uniform pigmentation
  - Usually small (<6 mm)
  - Macules or papules
  - Well defined borders
- Nuclei uniform and rounded w/inconspicuous nucleoli

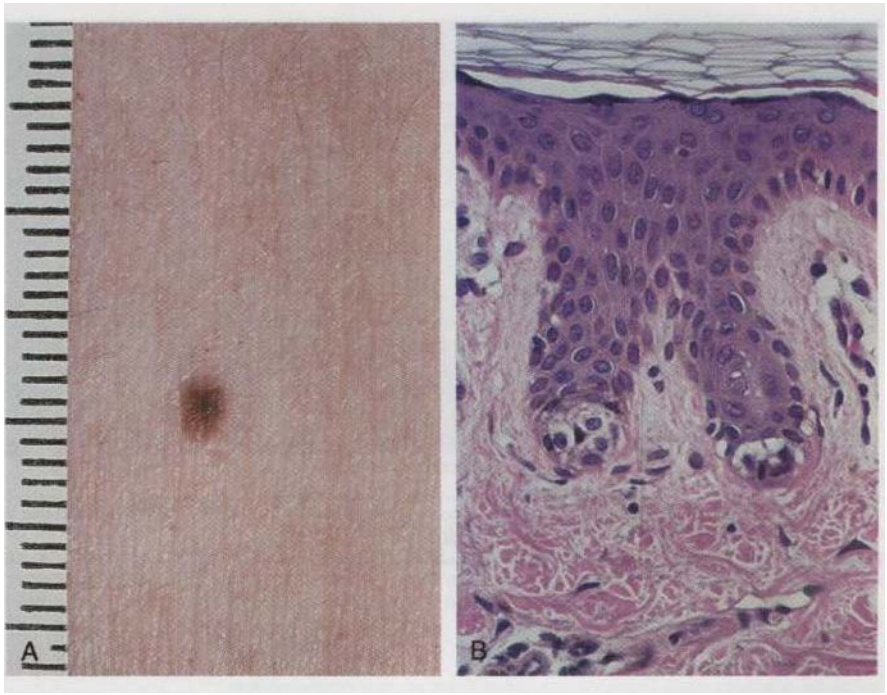
Nevi

- Junctional
  - Small, flat, symmetric
  - Rounded nests of cells at tips of rete ridges
- Compound
  - Raised, dome shaped
  - Intraepidermal nests
  - Intradermal nests/cords
- Dermal
  - Epidermal nests lost

- Less mature (nests)
  - Larger
  - Melanin production
- More mature (cords)
  - Smaller and deeper
  - Less pigment
- Most mature (fascicles)
  - Fusiform cells
  - Fascicles resemble neural tissue

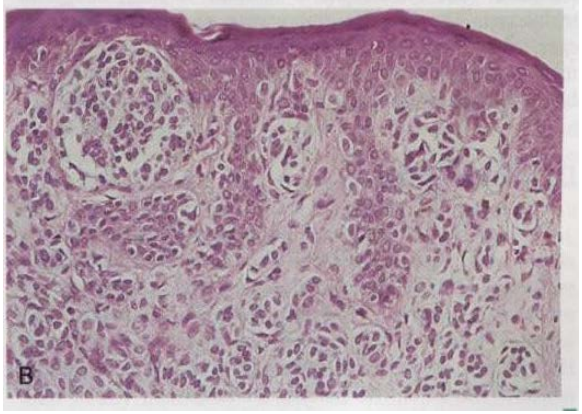
Nevi

Junctional Nevus



Cotran p. 1175

Compound Nevus



Cotran p. 1175

Nevi

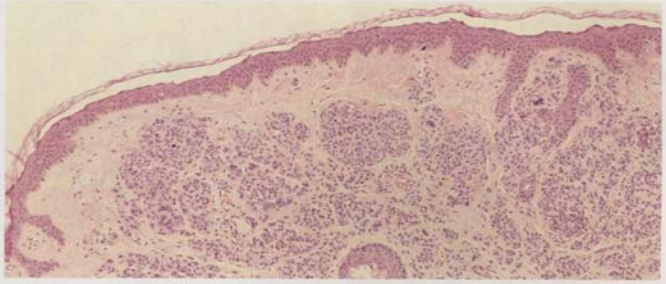


Figure 18–37

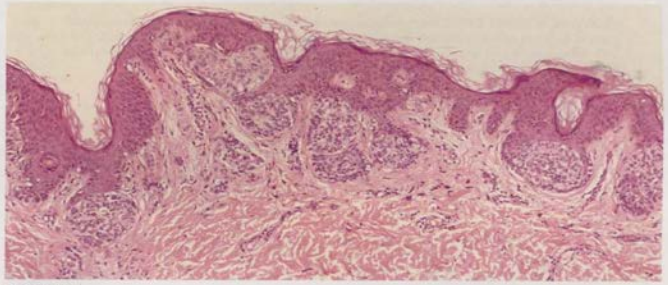


Figure 18–38

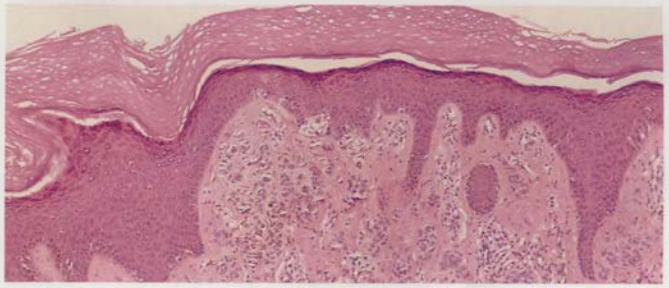
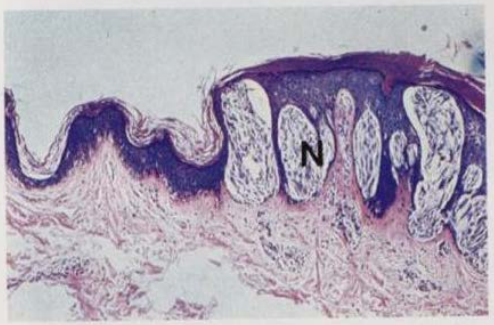
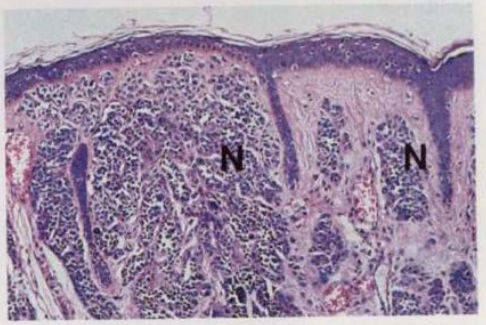
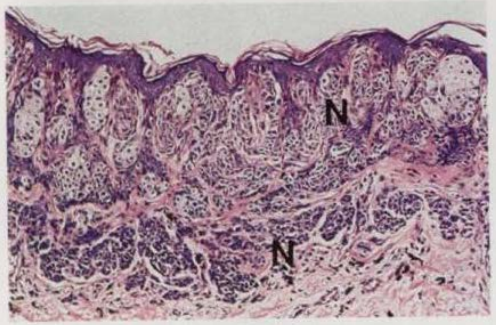


Figure 18–39

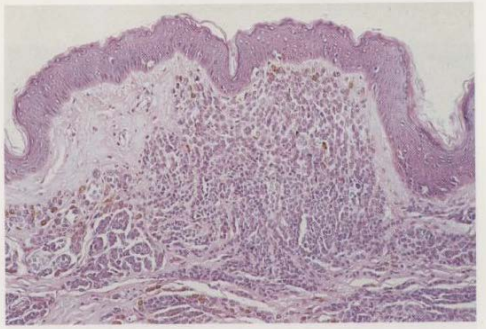
Milikowski p. 507







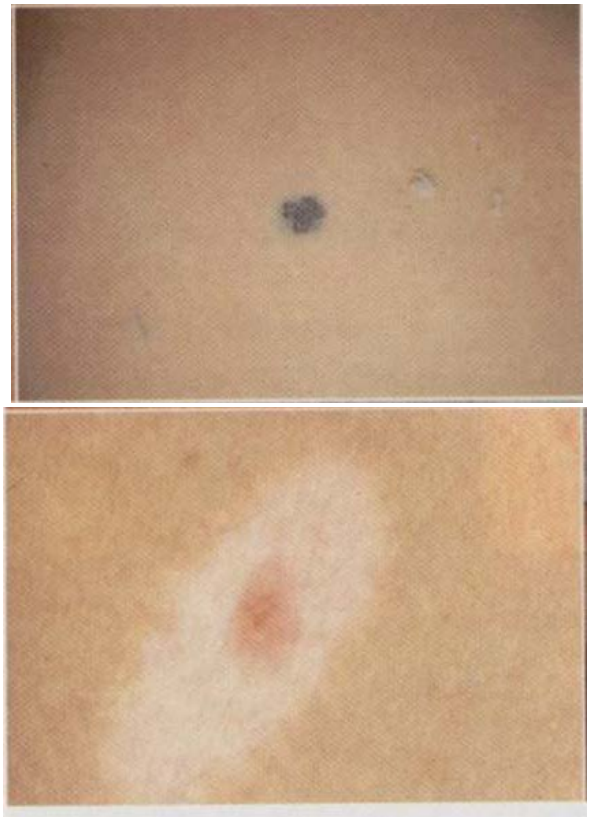
Grundmann p. 212



Wheater p. 221

Nevi

- Blue Nevus
  - Flat or raised
  - Dark blue/black, hairless
  - <5mm
- Halo Nevus
  - Pale depigmentation surrounding nevus
  - Inflammatory response to nevus cells
- Spitz Nevus
  - Rapid growth
  - Resembles melanoma
  - <1cm, red/pink or brown/black
- Congenital Nevus
  - Brown/black with hair
  - Increased melanoma risk when large



Cummings plate 3

Dysplastic Nevi

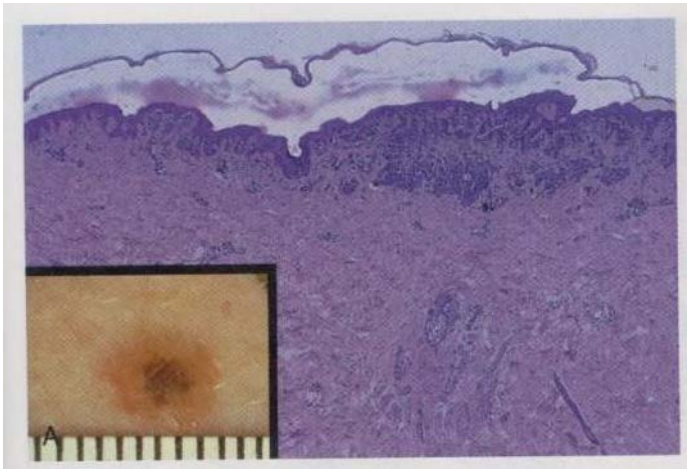
- AKA: BK moles
- Dysplastic nevus syndrome
  - Autosomal dominant
  - 56% incidence of melanoma by age 59
- Non-inherited have low risk of melanoma
- Gross appearance
  - Larger than most acquired nevi
  - Macules/plaques/target lesions
  - Variegation
  - Irregular borders
  - Occur on exposed/non-exposed skin

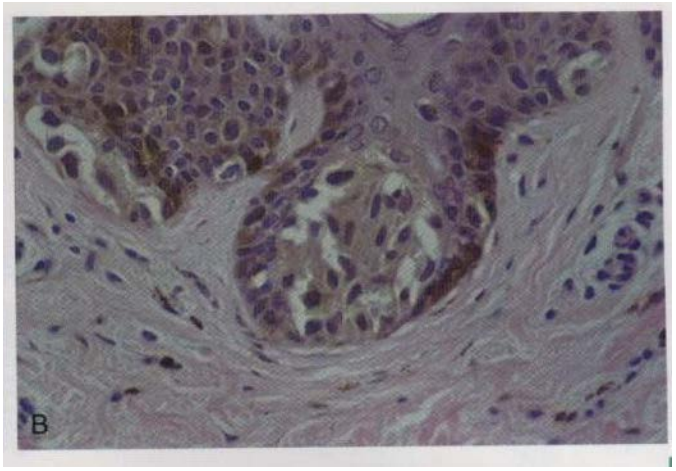
Dysplastic Nevi

- Histologic appearance
  - Single nevus cells replace normal basal cells (lentiginous hyperplasia)
  - Large nests of cells with coalescence
  - Cytologic atypia
    - Irregular nuclear contours
    - Hyperchromasia
  - Linear/lamellar fibrosis around ridges

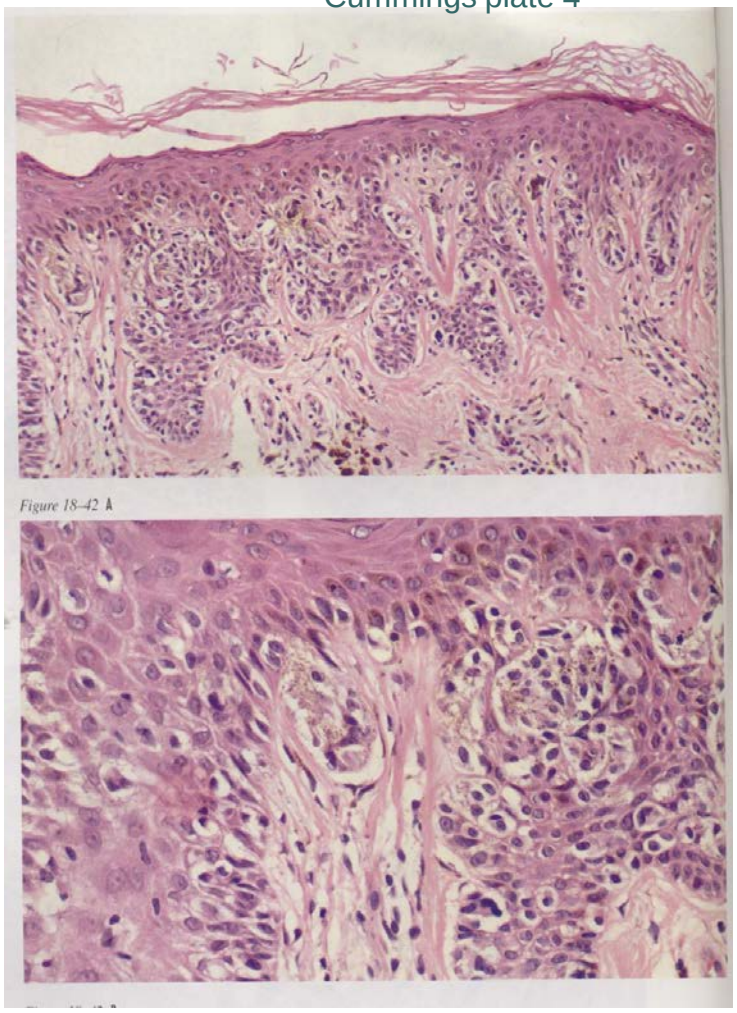
Dysplastic Nevus

Cummings plate 4



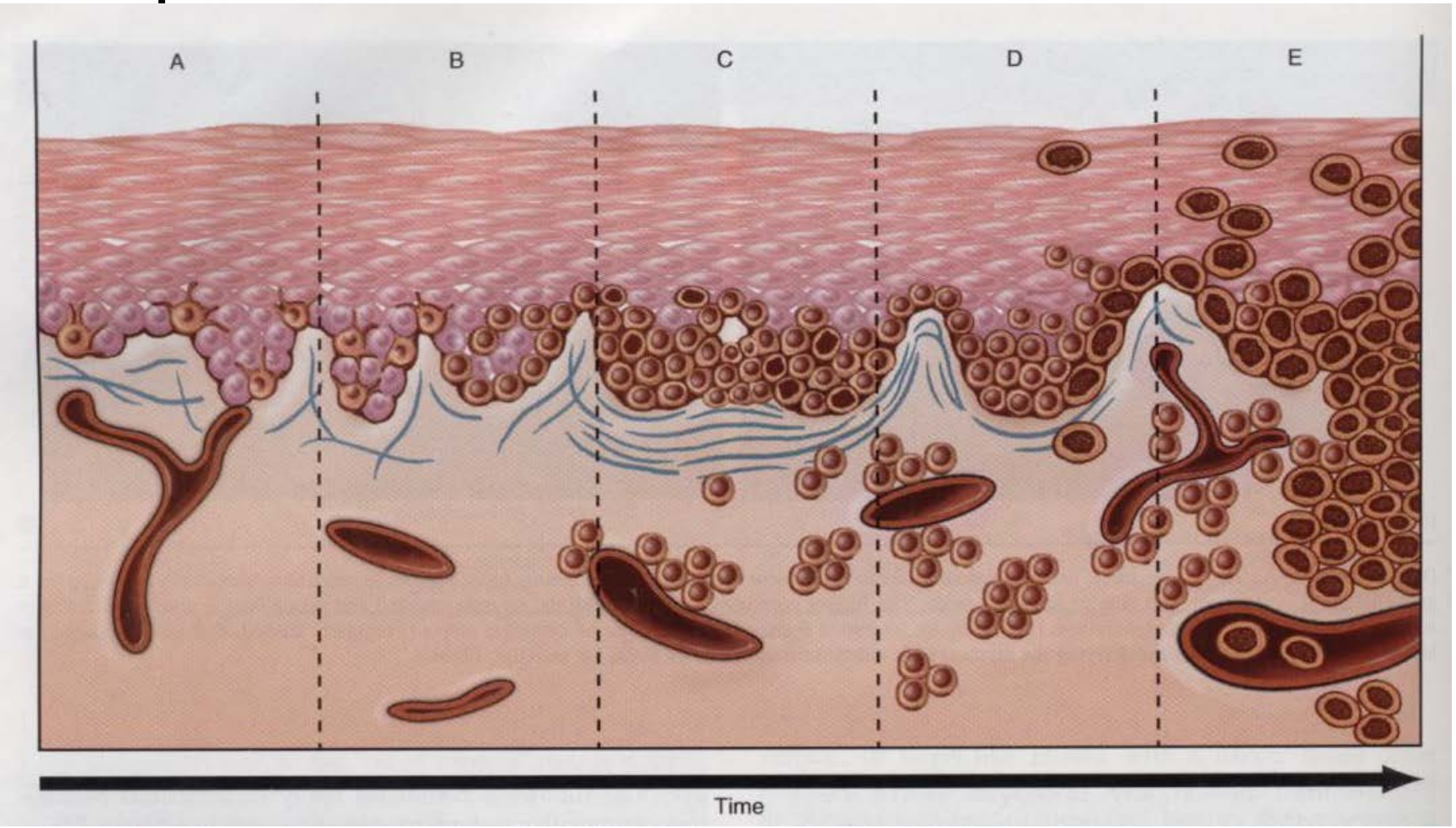


Cotran p. 1177



Milikowski p. 510

Malignant Melanoma



Cotran p. 1188

Malignant Melanoma

- Incidence (Cummings p. 503)
  - 1:1500 born 1935
  - 1:87 born 2000
  - Most rapidly increasing incidence
  - 38,000/year in US
  - Fair skin, blond/red hair, blue eyes, freckle/burn easily
  - Increased sun exposure
  - 25-30% of primary melanomas are head/neck
    - Upper back – men; back/legs - women

Malignant Melanoma

- Usually asymptomatic
  - Itching/bleeding
- Gross appearance
  - Black, brown, red, dark blue, gray
  - Sometimes hypopigmented areas
  - Irregular borders
  - Change of a preexisting lesion is most important clinical sign

Malignant Melanoma

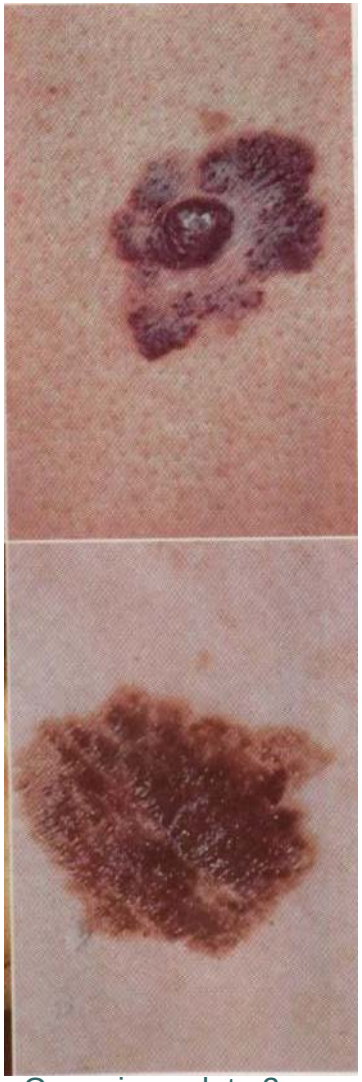
- Radial growth phase
  - Horizontal growth within epidermis/superficial dermis
  - No metastatic capacity
  - Flat lesions
- Vertical growth phase
  - Downward growth into dermis as expansile mass
  - Poor cellular maturation
  - Smaller cells deeper
  - Cells have metastatic capacity
  - Nodule forms

Malignant Melanoma

- Lentigo maligna
  - Elderly faces
  - Very slow growing
  - Can reach large size
  - 1/3 –1/2 develop dermal invasion
  - 10% with regional metastasis

Cummings plate 3

Malignant Melanoma



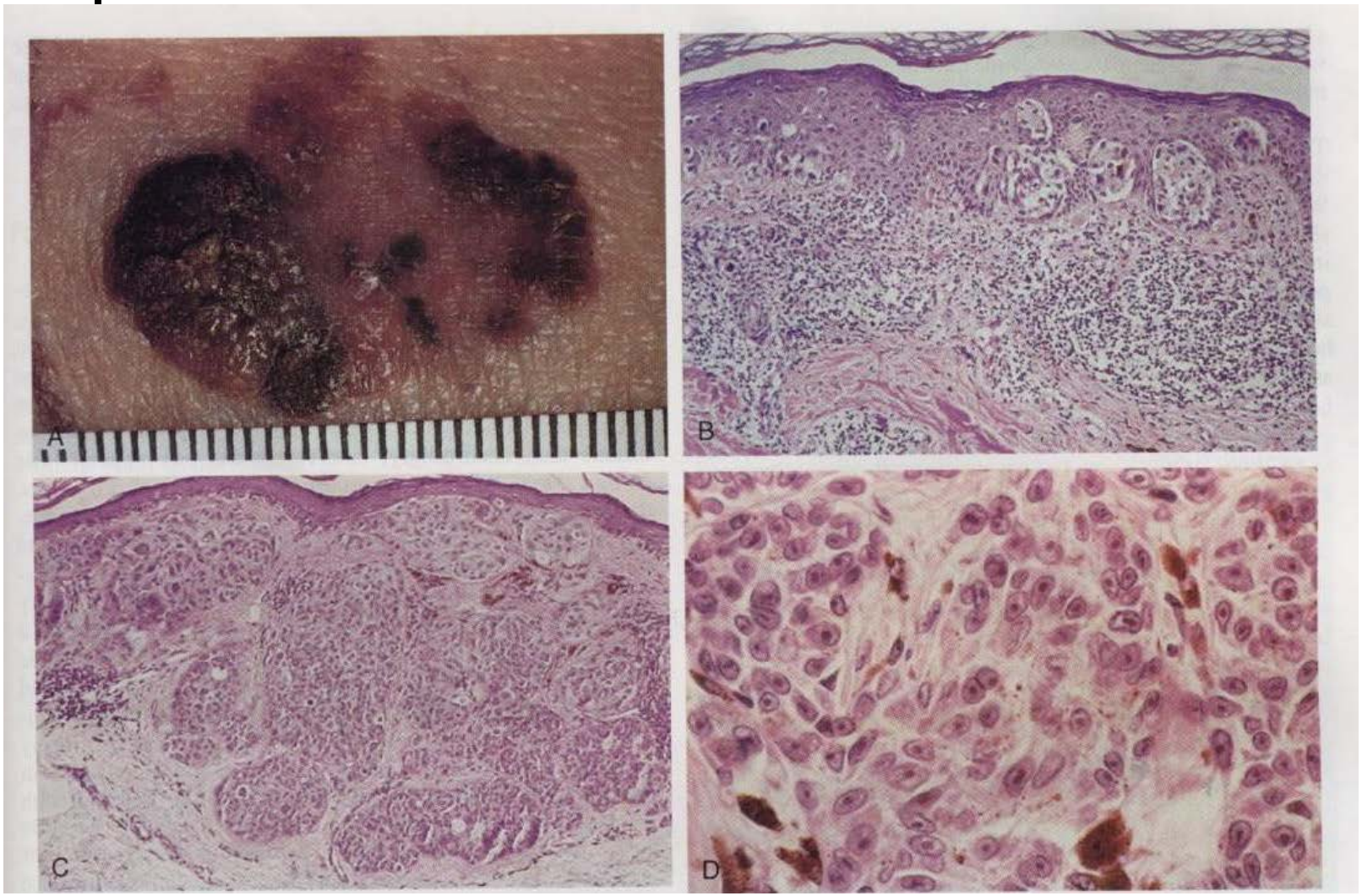
Cummings plate 2

- Superficial spreading
  - 75% overall
  - Rarely greater than 2cm prior to dermal invasion (ulceration/bleeding)
  - Better circumscribed than lentigo maligna
  - Variable coloration
  - Progress more rapidly (1 to 7 years before deep invasion)

Malignant Melanoma

- Nodular melanoma
  - 10-15% overall
  - Early vertical growth; little initial radial growth
  - Exposed and unexposed skin
  - Shades of blue
  - Poorer prognosis because of earlier depth of invasion

Malignant Melanoma



Cotran p. 1179

Malignant Melanoma

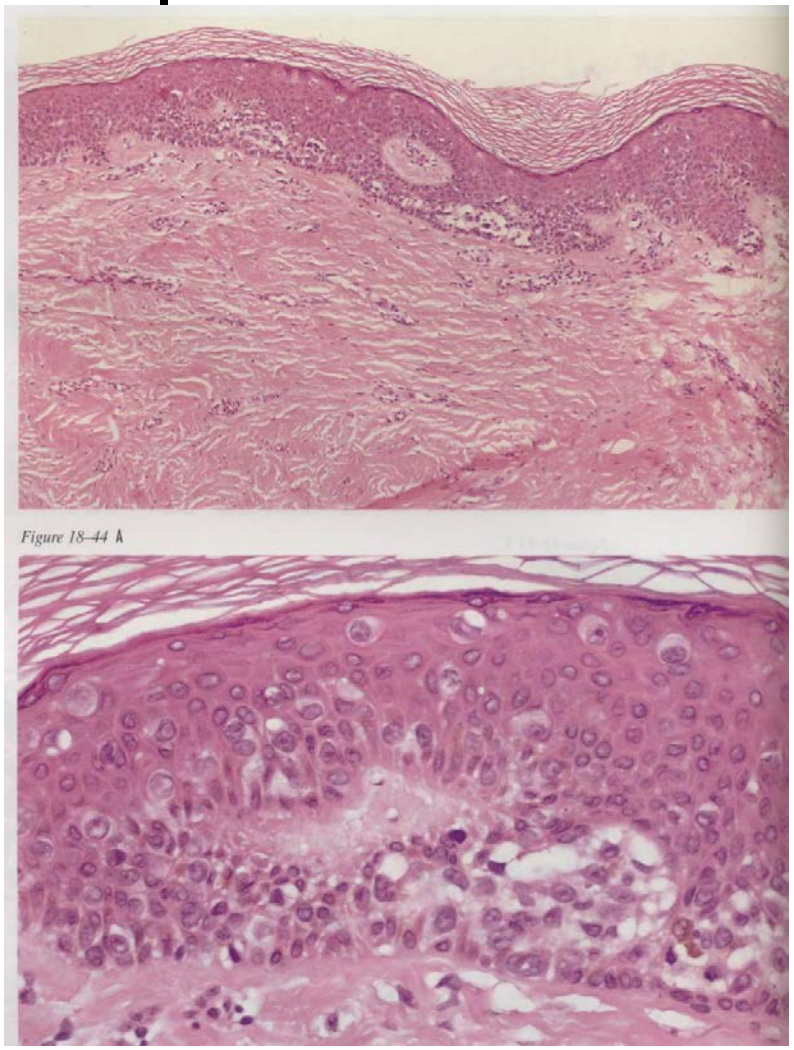


Figure 18–44 A

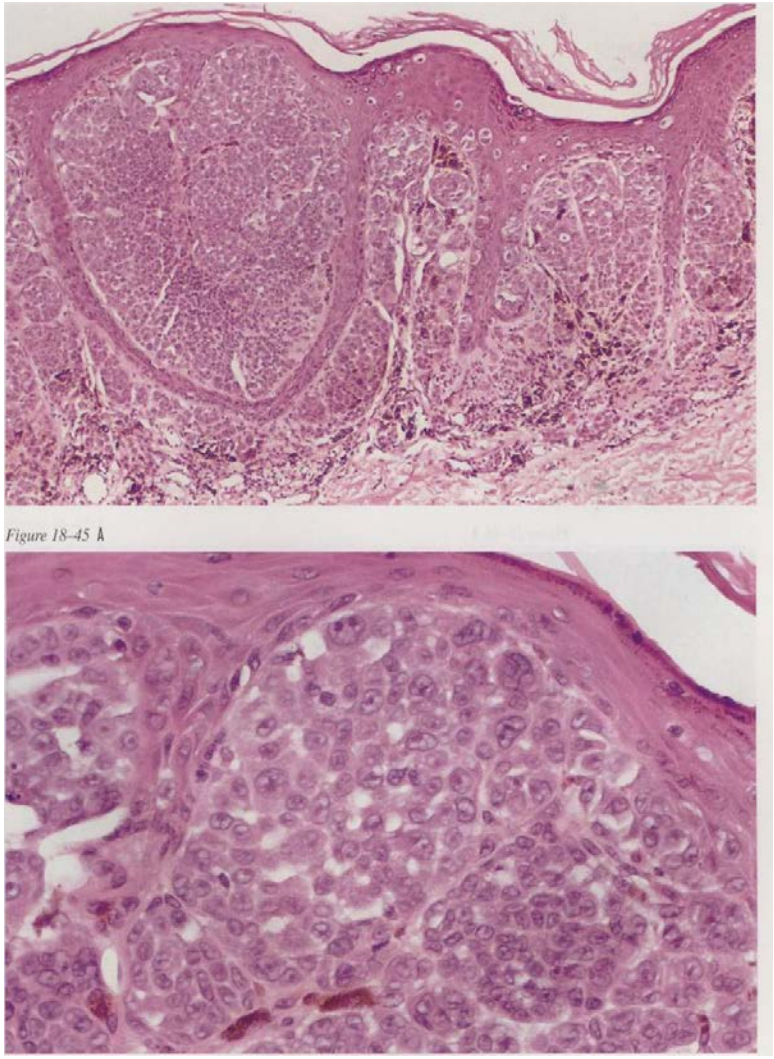
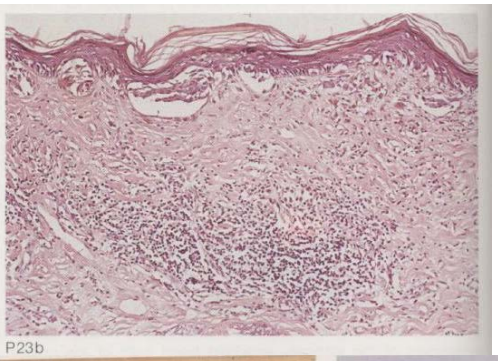
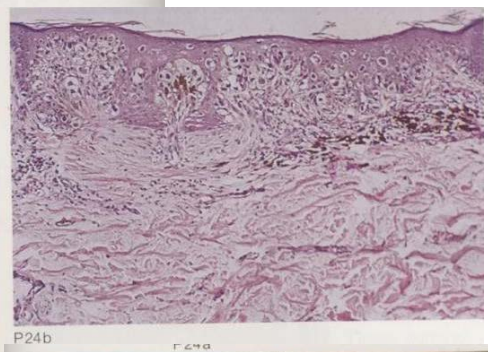


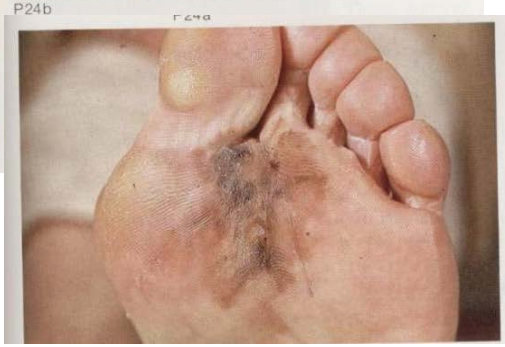
Figure 18–45 A

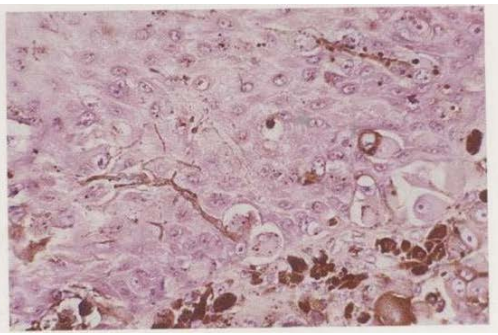
Milikowski p. 512-513

Malignant Melanoma









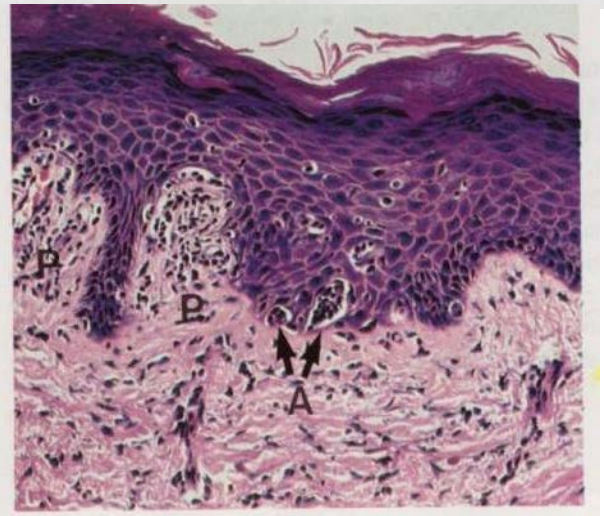
Grundman p. 212-213

Cutaneous Lymphoma

- Primary lymphoma of skin is usually T-cell
- Mycosis fungoides
  - Chronic, proliferative process
  - May evolve to generalized lymphoma
  - Usually scaly red/brown patches – large, raised, irregular plaques/nodules develop
  - Can have nodular eruptive variant
- Sezary syndrome
  - Blood seeded by malignant T-cells
  - Diffuse erythema and scaling of skin
- Histology
  - Sezary-Lutzner cells
    - Markedly infolded membranes
  - Pautrier microabscesses

Cutaneous Lymphoma

Cotran p. 1191

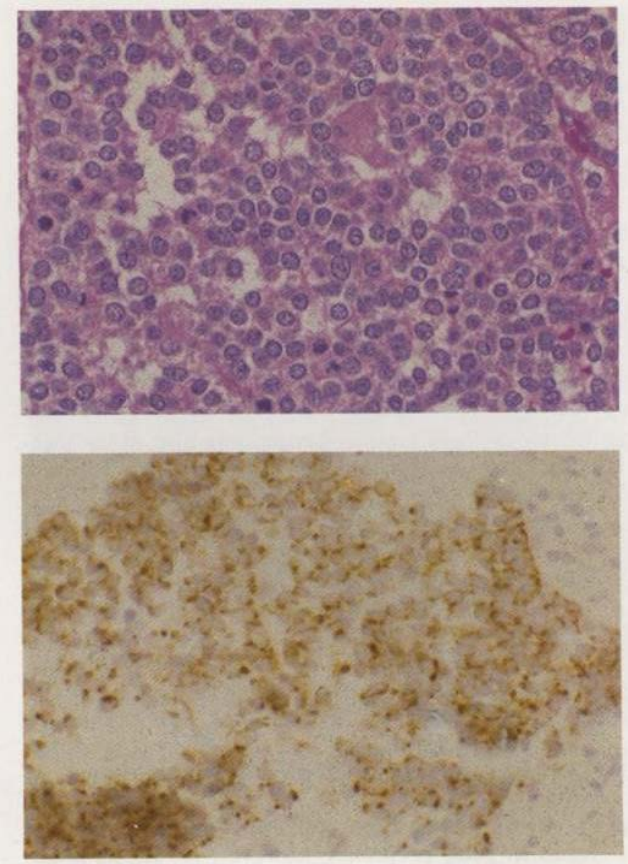


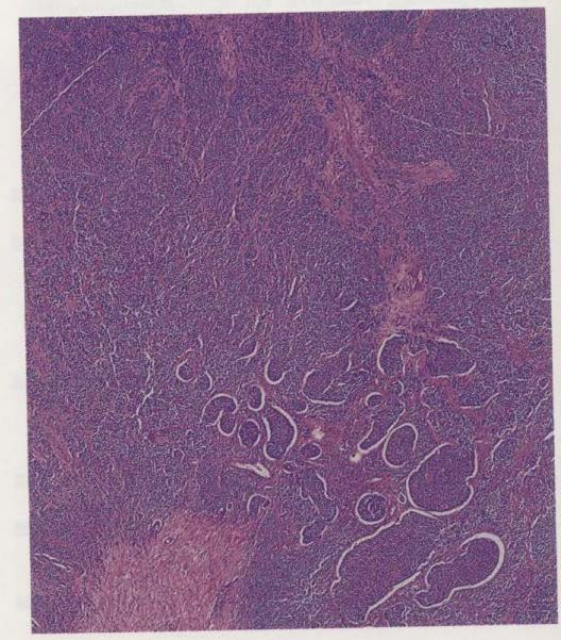
Wheater p. 225

Merkel Cell Carcinoma

- Neuroendocrine carcinoma of skin
- Potentially lethal
- Male = female
- Slow growing on head, neck, extremeties and buttocks
- Clinically similar to basal cell
- Undifferentiated small cells with neurosecretory granules
- Treat with wide local excision

Merkel Cell Carcinoma



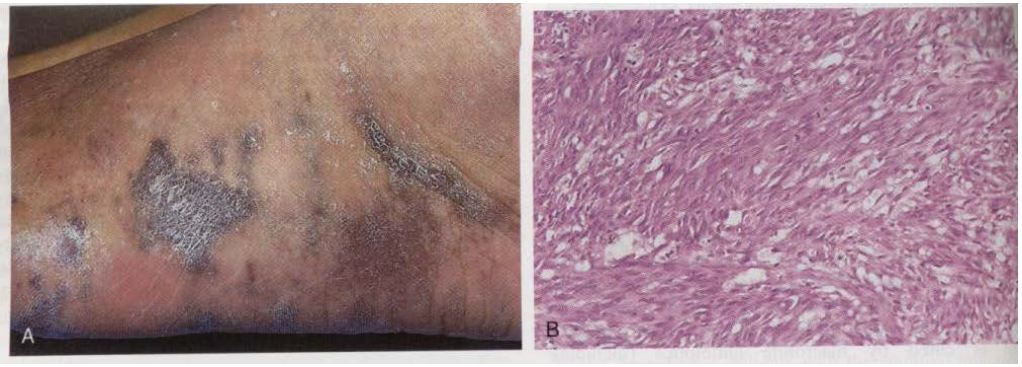


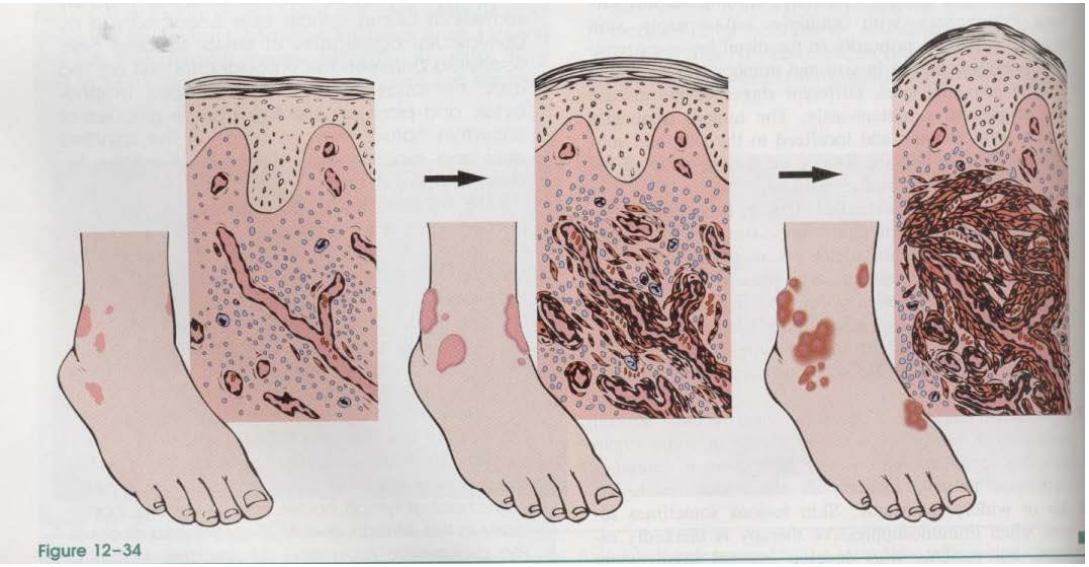
Wenig p. 378, 379

Kaposi Sarcoma

- Older eastern european men, transplant patients, AIDS patients
- Patches
  - Pink/red/purple macules (esp feet)
  - Irregular vessels with lymphocytes/ macrophages/plasma cells
- Plaques
  - Dilated jagged vessels lined with spindle cells and inflammatory cells
- Nodules
  - Sheets of plump spindle cells in dermis/SQ
  - Hemorrhage in stroma

Kaposi Sarcoma





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Bye

Keratocanthoma

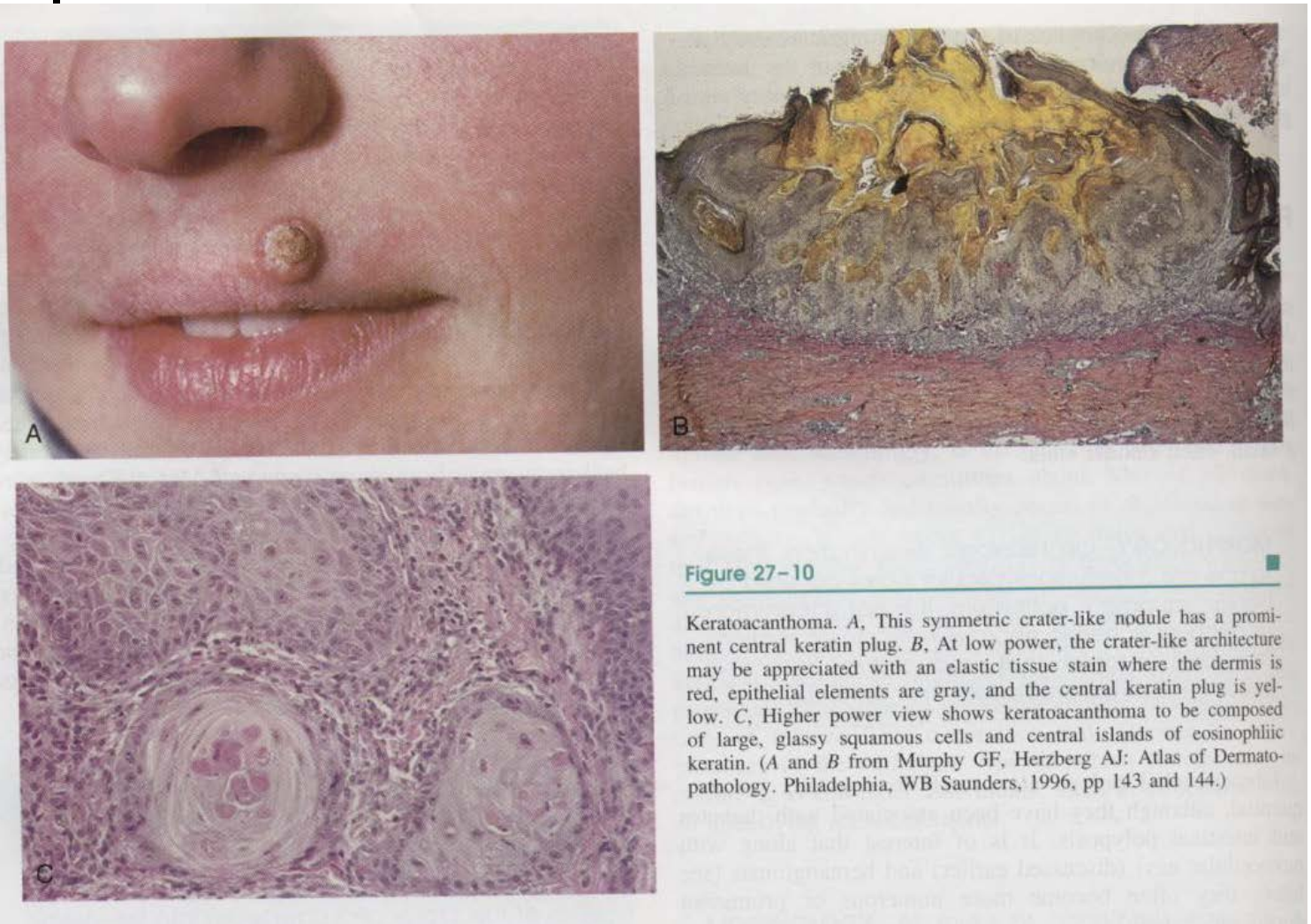

Figure 27–10

Keratoacanthoma. *A*, This symmetric crater-like nodule has a prominent central keratin plug. *B*, At low power, the crater-like architecture may be appreciated with an elastic tissue stain where the dermis is red, epithelial elements are gray, and the central keratin plug is yellow. *C*, Higher power view shows keratoacanthoma to be composed of large, glassy squamous cells and central islands of eosinophliic keratin. (*A* and *B* from Murphy GF, Herzberg AJ: Atlas of Dermatopathology. Philadelphia, WB Saunders, 1996, pp 143 and 144.)

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