Skin tumors

Premalignant lesions:

actinic (solar) keratoses (AK)

- premalignant lesions leading to SCC
- AKs are areas of permanent sun damage in which there is dyskeratosis and partial-thickness, cellular atypia, subepidermal inflammation, but an intact basement membrane
- up to 20% form SCC
- When an AK has a keratinous surface with a height greater than its base diameter, it is termed a keratin horn. 10% will have an underlying SCC

Keratoacanthomas

- rapidly-growing, nodular tumours, exhibiting symmetry around a central, keratin-filled crater
- Keratoacanthomas are twice as common in men than women
- usually found on the face or limbs of chronically, sun-damaged 50–70-year-old white-skinned individuals.
- they are better considered as self-healing SCCs
- Excision is recommended, rather than observation, as the differential diagnosis includes anaplastic SCC and the excision scar is often better than that which remains after resolution.

Extramammary Paget's disease (intraepidermal adenocarcinoma):

- occurs in cutaneous sites rich in apocrine glands such as the axillae, genital and perianal regions.
- Approximately 25% are associated with an underlying *in situ* or invasive adenocarcinoma
- Surgical excision forms the basis of treatment

Giant congenital pigmented naevus (GCPN) or giant hairy naevus

- It has a similar histology to compound naevi, but the naevus cells are distributed variably from the epidermis throughout all layers and into the subdermal fat and muscle.
- GCPNs are precursors of melanoma, 3–5% lifetime risk of melanoma is quoted
- Removal of GCPN should be considered for both aesthetic and oncological reasons.

Atypical (dysplastic) naevus

- lesions must have three of the following characteristics:
    1. variegated pigmentation;
    2. ill-defined borders;
    3. undulating irregular surfaces; or
    4. measure >5 mm.
- They can be sporadic or familial (familial atypical multiple mole-melanoma (FAMMM) syndrome).
- Possession of more than five confers a relative risk of melanoma six times greater than usual; within FAMM syndrome,
- they confer a life-long 10% risk of MM

Malignant lesions

Basal cell carcinoma

- slow-growing, locally-invasive, malignant tumour of pluripotential epithelial cells arising from basal epidermis and hair follicles
- it affects the pilo-sebaceous skin.
- The strongest predisposing factor to BCC is UVR
- Other predisposing factors include exposure to arsenical compounds, coal tar, aromatic hydrocarbons, ionising radiation and genetic skin cancer syndromes
- 95% occurring between the ages of 40 and 80 years.
- White skinned people are almost exclusively affected more common in men than women.
- BCCs metastasise extremely rarely.
- BCC can be divided into:
    - localized (nodular; nodulocystic; cystic; pigmented and naevoid)
    - generalised (superficial: multifocal and superficial spreading; or infiltrative: morphoeic, ice pick and cicatrizing).
- Nodular and nodulocystic variants account for 90% of BCC.
- High-risk BCCs are:
    1. large (>2 cm);
    2. located at sites where direct invasion gives access to the cranium (near the eye, nose and ear);
    3. recurrent tumours;
    4. tumours forming in the presence of immunosuppression;
    5. micronodular or infiltrating histological subtypes.
- Surgical excision including safe margins is the gold standard management with histopathology confirmation of complete excision
- In the elderly or infirm patients, radiotherapy produces similar recurrence rates to surgery Biopsy-proven,
- superficial tumours can be treated with topical treatments (5-fluorouracil, imquimod).

Cutaneous squamous cell carcinoma

- SCC is a malignant tumour of keratinising cells of the epidermis or its appendages
- It arises from the stratum basalis of the Epidermis
- the second most common form of skin cancer.
- It is strongly-related to cumulative sun exposure and damage
- IR causes SCC, as do chemical carcinogens (arsenicals, tar) and infection with HPV 5 and 16
- previous tobacco use doubles the relative risk of SCC
- SCC is also associated with chronic inflammation (chronic sinus tracts, pre-existing scars, osteomyelitis, burns, vaccination points) and immunosuppression
- it is more common in men than women.
- When a SCC appears in a scar it is known as a Marjolin’s ulcer.
- Bowen’s disease is SCC *in situ* and often develops as full-thickness dysplasia in hypertrophic AKs
- The appearance of SCC may vary from smooth nodular, verrucous, papillomatous to ulcerating lesions.
- There are several independent prognostic variables for SCC:
    1. the deeper the lesion, the worse the prognosis.
    2. lesions >2 cm have a worse prognosis than smaller ones.
    3. the higher the Broder’s grade, the worse the prognosis.
    4. Microscopic invasion of lympho-vascular spaces or nerve tissue carries a high risk of metastatic disease

5. SCCs on the lips and ears have higher local recurrence rates than lesions elsewhere, and tumours at the
6. extremities fare worse than those on the trunk.
7. SCCs that arise in burn scars, osteomyelitis skin sinuses, chronic ulcers and areas of skin that have
8. been irradiated have a higher metastatic potential.
9. SCCs will invade further in those with impaired immune response.

- The overall rate of metastasis is 2% for SCC (usually to regional nodes) with a local recurrence rate of 20%.
- Surgical excision is the only means of providing accurate information on histology and clearance.
- Surgical excision of the lesion (primary method) e,g: **Mohs surgery**
- Adjuvant treatment in cases with high-risk features
    - Radiotherapy
    - Chemotherapy (e.g., 5-fluorouracil, epidermal growth factor inhibitors) **Indicated in** case of systemic metastasis

Cutaneous malignant melanoma

- Melanoma is a cancer of melanocytes and can, therefore, arise in skin, mucosa, retina and the leptomeninges.
- Cutaneous melanoma is caused by exposure to UVR.
- Although it accounts for less than 5% of skin malignancy (and 1.6% of all malignancy worldwide), it is responsible for over 75% of skin malignancy-related deaths.
- It is the commonest cancer in young adults (20–39 years) and the most likely cause of cancer-related death.
- People at most risk of developing MM include:
    1. those with genetic syndromes;
    2. a past history of MM or with first-degree relatives who have MM;
    3. those who have more than 30 sun-acquired naevi or a history of
    4. five significant sun-burns before the age of 16;
    5. fair-skinned/red-haired people living close to the equator;
    6. anyone with excessive UVR exposure (environmental or salon-delivered);
    7. anyone with immunosuppression (which increases MM incidence 20–30-fold).

- Only 10–20% of MM form in pre-existing naevi, with the remainder arising *de novo* in previously normally pigmented skin

- Dermoscopy should be used to examine lesions for ABCDE criteria:
    - A = Asymmetry
    - B = Border (irregular border with indistinct margins)
    - C = Color (new changes in pigmentation or variations in pigmentation within the same lesion)
    - D = Diameter 6 < mm
    - E = Evolving (new lesion or a lesion that changes in size, shape, or color over time(
- A full-thickness excisional biopsy) best diagnostic test (with 3–1 mm margins from normal and abnormal skin.

- Macroscopic features in naevi suggestive of malignant melanoma
    - Change in size
    - Shape
    - Color
    - Thickness (elevation/nodularity or ulceration)
    - Satellite lesions (pigment spreading into surrounding area)

- Tingling/itching /serosanguinous discharge (usually late signs)

- Melanoma has a significant risk of metastasis, which is associated with **a poorer prognosis**.
- **Tumor depth**, as determined from the Breslow thickness or clark's classification, is **the most important prognostic factor**.

*The higher the level, **the worst the prognosis**

Clark		Breslow
Confined to epidermis	I	<0.75 mm
Invading papillary dermis	II	0.76–1.5 mm
Abutting papillary-reticular junction	III	1.51–4.0 mm
Invading reticular dermis	IV	>4.0 mm
Subcutaneous invasion	V	—

- There are four common macroscopic variants of MM and several other notables, but rarer forms:

1. Superficial spreading melanoma (SSM)

This is the most common presentation (70%), usually arising in a pre-existent naevus after several years of slow change, followed by rapid growth in the preceding months before presentation

2. Nodular melanoma (NM)

accounts for 15% of all MM and tends to be more aggressive than SSM, with a shorter clinical onset
often arise *de novo* in skin
more common in men than women
often presenting in middle age
usually on the trunk, head or neck
they lack the horizontal
growth phase, they tend to be sharply demarcated

3. Lentigo maligna melanoma LMM

presents as a slow-growing, variegated brown macule on the face, neck or hands of the elderly
positively correlated with prolonged, intense sun exposure
affecting women more than men
LMM are thought to have less metastatic potential than other variants as they take longer to enter a vertical growth phase

4. Acral lentigious melanoma (ALM)

affects the soles of feet and palms of hands
It is rare in white-skinned individuals
more common in the Afro-Caribbean, Hispanic and Asian population
It usually presents as a flat, irregular macule in later life

5. Miscellaneous
   - Amelanotic melanoma may present
     - as a flesh-colored, skin lesion;
     - as a metastasis from an unknown skin primary;
     - or, in the gastrointestinal tract, with obstruction or intussusception.
   - Desmoplastic melanoma
     - is mostly found on the head and neck region.
     - It has a propensity for perineural infiltration
     - often recurs locally if not widely excised.
     - It may be amelanotic clinically.

- Melanoma Treatment
  - Excision with margins → for lesion confined to the skin
  - Chemotherapy
  - Biologic therapy for recurrent or metastatic melanoma
  - Radiation therapy