Lesions: Any pathological or traumatic discontinuity of tissue or loss of functioning of a part.

The skin is the largest organ of the body with a surface area of about 10000-18000 cm² in the average adult.

The skin is about 15% of the total body wt.

Functions of the skin:

1. Protection against minor trauma and microorganisms
2. Thermoregulation; via the activity at the blood vessels & sweat gland activity.
3. Role in metabolism; vit. D-production, immunological defense, sensory interface with our surrounding & psychological expression of an individual to their surrounding.

The skin as an organ is vulnerable to wide variety of disease & conditions.

Ageing is accompanied by a loss of elasticity & wrinkling

Degenerative change result from excessive exposure to ultraviolet radiation and environmental factors.

Reaction to chemical & drugs are also common & the skin is probably susceptible to more different types of tumours than any other organ.

Lesions arise from any of the structures present in the skin.

The skin is composed of 2 layers (the epidermis & dermis)

The epidermis is the upper layer, the epithelium is stratified squamous in nature & cornified with 4 cell types (keratinocytes, melanocytes, langerhans cells & merkel cells) in decreasing numbers.

The dermis consists primarily of non cellular C.T., composed of collagen, elastic fibers and ground substance.

Interspersed within are nerve, blood vessels, lymphatics, muscle units, pilosebaceous & apocrine units & eccrine sweat units.

The entire dermis including papillary & reticular layers is 15-40 times thicker than the epidermis.

The dermis contains fibroblasts, mast cells, histocytes, langerhans cells & lymphocytes.

The thin upper zone of the dermis is called Papillary dermis and a thick lower zone called the reticular layer which is significantly larger and extend from the base of the papillary dermis to the subcutaneous fat.

PREMALIGNANT LESIONS

1- Actinic keratosis (Senile keratosis, Solar keratosis):

   It’s the most common premalignant lesion usually seen in older, light complexioned individual.

   The lesions are potentially malignant they are dry, scaly and vary in color from reddish to light brown, frequently multiple.

   Their roughness is due to adherent parakeratotic scales.
(Parakeratosis; persistence of the nuclei of keratinocyte).

The % of actinic keratosis that progress to invasive SCC varies from 20 -25%, which rarely metastasize, multiple lesions may clear with 5-Flurouracil cream,

An effective sunscreen is important with the avoidance of sunlight.

Radiotherapy should not be used for Solar keratosis.

**2- Bowen’s disease ;**

It’s seen in older patients in both sun exposed & non sun exposed areas.

It is an intra epidermal SCC (carcinoma in situ), potentially malignant and appears as a persistent, progressive usually flat, red, scaly or crusted plaque.

Can involve the skin or mucous membrane, including mouth, anus or genitalia.

The lesion appears as a solitary, sharply defined erythematous, reddish, dull, scaly plaque, pruritus, superficial crusting and oozing may be noted.

Etiologic considerations include sunlight, exposure to arsenic, viruses, chronic trauma & heredity.

There is also a relation between Bowen’s disease and internal malignancies of (bladder, bronchus, breast & esophagus 7%)

Untreated 3 – 5 % of patients will develop an invasive SCC.

*The lesions most likely to be mistaken for Bowen’s disease (D Dx) are :*

1- Solar keratosis

2- Psoriasis

3- Multifocal (superficial )BCC.

4- SCC.

Chemotherapy with local cytotoxic agents such as 5FU can be applied to small lesions with good effect.

Responds poorly to x- radiation.

Adequate excision is indicated as these lesions can subsequently become invasive SCC & metastasize.

**3- Erythroplasia of Querat ;**

It is often referred as bowen’s disease of the mucous membrane, most often glans penis & it is seen during the 5th & 6th decade of life, primarily in uncircumcised men.

It is much more likely than bowen’s disease to become invasive & carries with an increased tendency to metastatic distention.

**4 – Radiation dermatitis :**

Low dose skin irradiation from the treatment of chronic acne & fungal infection of the scalp popular 50 years ago.

Chronic radiation exposure is found in the finger & hand of dentist who had held intraoral x-ray film with out protection during the long exposures required for obtaining dental radiographs.

If the dose is very great ulceration may occur, later atrophy, irregular hyperpigmentation, telangectasia & hair loss occur.
Chronic radiation dermatitis followed by either BCC or SCC. Early erythema occurs which goes on to desquamation & pigmentation

5- Chronic scar:
A carcinoma which develops in a scar (Marjolins ulcer) presents the following characteristics:
   a. It grows slowly as the scar is relatively avascular.
   b. It is painless as the scar tissue contains no nerve
   c. Secondary deposits do not occur in the regional L.N as lymphatic vessels have been destroyed.

6- Sebaceous epidermal nevus (Jadassohn):
Also called organoid naevus, is well circumscribed verrucose or finely nodular raised irregular hairless plaque.
Occur mostly on the scalp & less often on the face & neck.
It is present at birth & remains through out life, being quiescent during childhood & tending to become verrucose & nodular during puberty.
Up to 10% of these may develop in to BCC.
Treatment is complete excision.

7- Porokeratosis (of Mibelli):
Is characterized by annular plaques with horny border, about 13% may transform into BCC or SCC.
Porokeratosis is a hereditary dermatosis marked by centrifugally spreading hypertrophy of the stratum corneum around sweat pores followed by atrophy.

MALIGNANT LESIONS

1- BASAL CELL CARCINOMA (RODENT ULCER):
   Is the commonest form of skin cancer, arising from the pluripotential epithelial cells of the epidermis & hair follicles.
   It is directly related to sun exposure
   BCC occur mostly at the sites of greatest concentration of pilosebaceous follicles.
   BCC is differing from SCC in that it does not arise from malignant changes occurring in the preexisting mature epithelial structure.
   Typically affect ages between 40 – 79 years.
   >50% are male, & >85% of these lesions occur in head & neck region.
   BCC grow slowly but become locally invasive & penetrate deeper tissue hence the term Rodent Ulcer.
   Metastasis is rare.
   The patient gives history of spot that fails to heal.

Types of BCC:
Clinically the following are recognized in order of frequency
1- Nodular : 50 – 54%
   Usually single occur mostly on the face & begin as small translucent papules that remain firm & exhibit Telangectasia.
   Grow slowly & tend to ulcerate which can result in tissue destruction.

2- Superficial BCC: 9 – 11%
   Often occur multiple, usually on the trunk.
   They are highly pigmented erythematous & patch-like.

3- Cystic: 4 – 8%
   May yield extrusion of mucinous material on puncture.

4- Pigmented: 6%
   These lesions combine the feature of the nodular ulcerative type with a deep brownish – black pigmentation.

5- Morphic or Sclerosing BCC: 2%
   These lesions tend to be yellow – white with ill defined borders & resemble small patches of scleroderma.
   This type is most Frequently recurs.
   Characteristically one sees peripheral growth with central sclerosis & scaring

Recurrent BCC:
Recurrence is defined as a tumor that is diagnosed within the immediate area of a previously removed BCC up to 5 years after the initial removal, the recurrence must have the same Histology as the original tumor.

BCC is most likely to recur if the lesion is:
   a. >2 cm in diameter
   b. Morphea form (Sclerosing)
   c. Located in area of embryological fusion planes (nasolabial fold, nose – cheek angle, posterior ear sulcus, canal of the ear, periorbital area & scalp).

Treatment:
1- Surgical excision: Is the treatment of choice with cure rate between 85 – 95%.
2- Electro desiccation & curettage: Commonly used for small superficial lesion( 2 – 5 mm).
   cure rate is 85 – 100%.
3- Radiotherapy: BCC is very radiosensitive & has an over all response of 92% in selected cases. This is reserved for old patients who are not suitable for surgery, or specialized anatomical sites (eye lid, nose, mouth).
4- Mohs microsurgery (chemosurgery): Involve serial horizontal excisions & mapping of the tumor, usually. Reserved for recurrent lesions, tumor in difficult areas, or those with indistinct border (Morphea form).
5- CO₂ LASER: Most frequently applied to the superficial type of BCC & can be conserved when bleeding diathesis is present, bleeding is unusual when LASER is used.
II-SQUAMOUS CELL CARCINOMA:

SCC is the 2nd most common type of skin cancer.

Originating from keratinizing or malpighian (spindle) layer of cell epidermis.

Arises in an area that has had some pre malignant change.

These tumors appear more inflammatory, feel more indurated and ulcerate sooner compared with BCC.

It is seen primarily in older patients mostly men, the prime etiologic factor is solar radiation (sun exposure).

Occasionally it arises as a complication of long standing scars (chronic scar in processes includes burn scars), draining sinuses, osteomyelitis, hidradenitis suppurativa, long standing venous ulcer.

infection, particularly with specific subtype of human papilloma virus.

Occupational exposure to tar & polycyclic aromatic hydrocarbons.

Farmer, Rancher, sailor & all occupations require excessive sun exposure are predispose to SCC.

Smoking

Cytotoxic drugs & immunosuppressant drugs.

Hereditry factors are important with blue eyed, thin skinned more likely to develop SCC than darkers (hereditry factor: Xeroderma pigmentosum & Albinism.

Histologically:

Characterized by invasive nests of cells showing variable central keratinisation & horn cell formation.

There is no peripheral palisading as occur in BCC.

The cells vary from large well-differentiated cells to completely anaplastic cells.

Lesions of the ear & lip metastasis much earlier even if they are relatively well - differentiated.

Regional L.N may become enlarged either as a result of ulcer or from metastasis.

Two general types of SCC are seen:

1. Slow growing variety: is verrucous in nature & exophytic in appearance.
2. Rapid growing variety: more nodular & indurated type with rapid growth & ulceration combined with local invasiveness.

D. Dx of SCC:

1. Actinic keratosis: induration & skin thickening should be absent.
2. Pseudoepitheliomatous hyperplasia: long history chronic ulceration.
3. BCC: Biopsy & appearance.

Factors predisposing to recurrence:

1. Size > 1cm in diameter.
2. Poorly differentiated cytological features.
3. Histologically invasion into deep dermis or fat.

**Treatment:**

Depends on the age of the patient & size of the lesion.

- Surgical excision is the most appropriate treatment for SCC of the skin. Surgical margin depends on the tumor diameter & on the site of the lesion.
- Older patients are treated conservatively. Location of the lesion is the factor for choosing the technique.
- A recurrent lesion is best treated by excision & skin grafting rather than flapping.
- Radiotherapy should be used for massive unresectable tumor in critical sites e.g. around eye-lid, nose, & lip especially in patients > 55 years. Post operative radiotherapy may be used for persisting tumor or where clearance is doubtful.

**LLL-VERRUOCOUS CARCINOMA (CARCINOMA CUNICULATUM):**

Is a warty, slow growing well-differentiated SCC (a variant of low degree SCC).
- Invade locally but rarely metastasise.
- Commonly occur in palm & sole.
- Also can occur in mouth & genitalia.

**IV-KERATOACANTHOMA (MOLLUSCUM SEBACEUM):**

Arises as a rapid proliferation of squamous epidermal cells.
- Is the self-healing SCC.
- Seen mostly on the sun exposing areas.
- Usually solitary but can be multiple.
- Clinically is well demarkated nodule with rolled firm border & a central cup filled with keratinaceous debris.
- Central wedge biopsy may reveal the hall marks of the histologic diagnosis.
- Short history & rapid increasing in size suggest keratoacanthoma rather than SCC.

*See the slideshow for the images.*