

Skin and subcutaneous surgery

Cyst:

A *cyst* is a closed sac, usually filled with liquid, semisolid, or gaseous material.

Classification:

1. True cysts: A true cyst has an epithelial lining which secretes fluid.

Causes: congenital (congenital dermoid cyst, Branchial cysts, thyroglossal cyst)

Acquired: (epidermoid cyst, sebaceous cyst)

2. Pseudocysts: have a fibro-inflammatory lining. The fibro-inflammatory lining is made up of fibrous and granulation tissue but lacks an epithelium.

Examples of Pseudocysts: pancreatic pseudocysts, ganglion cyst

*If the cyst contain pus then it's called an abscess.

Sinus: A sinus is a sac or cavity connected to surface epithelium and can be normal part of organ or tissue, or an abnormal cavity or passage caused by the destruction of tissue. It can be lined by epithelium or granulation tissue.

- Examples: normal body sinuses: paranasal sinuses
- Congenital: *Congenital dermal sinus*
- *Acquired: pilonidal sinus*

Fistula: A *fistula* is an abnormal connection between two hollow spaces (technically, two epithelialized surfaces)

Causes:

Congenital :

- tracheoesophageal fistula (TEF)
- patent urachus, there is an opening between the bladder and the umbilicus.

Acquired: e.g fistula in ano, Vesicovaginal fistula, *arteriovenous fistula* in hemodialysis.

Ulcer: is the breach of the continuity of epithelium of skin, or mucous membrane and is a kind of open wound:

Parts of an Ulceration

- **Margin-** Line of demarcation between normal and abnormal
- **Floor** – The exposed part of an ulceration (Inspection)
- **Edge** – Part between the margin and the floor
- **Base**-the structure on which the ulceration rests (Felt on palpation)

The base is different from the floor and it is important to understand the difference. If an attempt is made to pick up the sore between the thumb and the index finger, the base will be felt. Marked induration of the base is an important feature of squamous cell carcinoma.

Types: there are many classifications of ulcer but the most important one is according to the edge type:

- **Undermined edge** – Mostly seen in tuberculosis. The disease-causing the sore spreads in and destroys the subcutaneous tissue faster than it destroys the skin. The overhanging skin is thin friable, reddish blue and unhealthy.
- **Punched out edges** – it is mostly seen in gummatous ulceration or in a deep trophic sore. The edges drop down at a right angle to the skin surface as if it has been cut out a punch. It is seen in diseases in which activity is limited to the sore itself and does not tend to spread to the surrounding tissues.
- **Sloping edge** – it is seen mostly in healing traumatic or venous ulceration. Every healing sore has a sloping edge, which is reddish purple in color and consists of a new healthy epithelium.
- **Rolled** Raised and the pearly white beaded edge is a feature of rodent ulcer (basal cell carcinoma) invasive cellular diseases that become necrotic at the center.
- **everted edge** – it is a characteristic feature of squamous cell carcinoma or an ulcerated adenocarcinoma. This ulceration is caused by fast-growing cellular disease, a growing portion at the edge of the ulceration heaps up and spills over the normal skin to produce an everted edge.

CUTANEOUS MALIGNANCIES

Types:

1. Basal cell carcinoma (BCC)
2. Cutaneous Squamous cell carcinoma (cSCC)
3. Malignant melanoma (MM)

Epidemiology and risk factors:

It is estimated that one in five Americans will be diagnosed with skin cancer during their lifetime.

- BCC accounts for nearly 80% of all skin cancers
- (cSCC) accounting for 15% to 20% of all skin cancer.
- MM account for less than 5% of cutaneous malignancies.

Risk Factors:

Patient factors:	Environmental factors
Male patient.	Human papilloma virus HPP
Increased age.	Radiation
+ve family Hx.	Arsenic and hydrocarbon
Skin type I or II Fitzpatrick.	Smoking
Part of syndrome e.g. gorline syn. (BCC)	Sun light
	Immunosuppression
	Chronic inflammation

Basal cell carcinoma (BCC) Vs. Cutaneous Squamous cell carcinoma (cSCC)

	BCC	cSCC
Histologically	Arise from the basal layer of the epidermis.	Similar to BCC
Edge if ulcerated	Raised borders rolled edge.	everted overhanging edge.
Types	<ol style="list-style-type: none"> Nodular BCC: dome-shaped nodular papule with a pearly surface, scattered telangiectasia, typically ulcerates centrally, giving it the classic RODENT ULCER appearance. Cystic and Pigmented BCC are another variations of a nodular tumor. Superficial BCC: multi-centric erythematous patch on the trunk and extremities. Morpheaform or sclerosing BCC is the most aggressive type, found in the head and neck. Indurated plaque that resembles a scar without a history of trauma. Other aggressive types infiltrative, or micro nodular. 	<ol style="list-style-type: none"> Well-differentiated tumor types: firm, Raised, pink- or .flesh-colored papules with frequent keratinization, scaling, ulceration, or crusting on the surface. Poorly differentiated type: soft, granulomatous nodules with areas of hemorrhage, necrosis, and ulceration and lacking in keratinization.
Metastasis	<0.05%	As high as 14%.

DIAGNOSIS:

- Clinical examination: upper lip usually BCC , lower lip usually cSCC
- Tissue biopsy for histological examination.

T TREATMENT:

1. **Destructive modalities:** for low risk basal cell tumors and selected low-risk cSCC cases by using a variety of methods including electrosurgery, cryosurgery, topical 5-fluorouracil, topical imiquimod, intralesional interferon, radiation, and photodynamic therapy.
2. **Surgical\ excisional modalities:**
 - **Direct excisional biopsy** with evaluation of the surgical margins to ensure that they are free of tumor. for tumors <1 cm a **clinical margin of 5 mm**, and for tumors > 1 cm a **clinical margin of 10 mm** is recommended.
 - **Mohs' micrographic surgery** is the most definitive treatment of choice in high-risk BCC of anatomically complex areas on the face.

MALIGNANT MELANOMA

Malignant tumor arise from melanocytes. It form >75% of skin cancer deaths.

RISK FACTORS

Host factors: Fitzpatrick I-II skin types, and blue/ green eyes. Congenital nevi, atypical nevi, and giant nevi.

Environmental factors sun exposure, particularly intermittent and intense exposure. UV A and UVB

ABCDE diagnostic tool:

The decision to biopsy a suspicious lesion utilizes five simple criteria for identifying pigmented lesions that are suspicious for melanoma:

1. **A**symmetry
2. **B**order Irregularity
3. **C**olor Variegation
4. **D**iameter > 6 mm
5. **E**volution or change in the appearance of lesion over time.

CLASSIFICATION:

Type	Site	Age group	Comments
1. Superficial spreading,	trunk in men and the legs in women	30 to 50 years	Most common type, flat or slightly elevated lesion with variegate pigmentation
2. Nodular	Legs or trunk.	Same above	Second most common, smooth, single colored (black or brown) elevated nodule or an ulcerated mass. high incidence of lymph node involvement.
3. Lentigo maligna,	sun-damaged anatomic sites (head and arms)	older patients average age at 65 years	variegate pigmentation in longstanding pigmented lesion
4. Acral lentiginous	palms of the hand, sole of the feet, or beneath the nail plate (subungual)	Majority above 40 year.	most common in African Americans,
5. Desmoplastic melanoma	head and neck	older patients	Plaque or nodule, low incidence of lymph node involvement.

DIAGNOSIS:

1. Full thickness excisional or incisional biopsy to determine thickness of the tumor.
2. Lymph node assessment.
3. Screening for metastasis.

TREATMENT:

WIDE and **DEEP** Excision + regional **LYMPH NODE** treatment

Wide:

TUMOR THICKNESS	EXCISION MARGIN
In situ	0.5 cm
Less than 1.0 mm.	1 cm
1.0to4.0mm	2cm.
Greater than 4.0 mm	2 to3 cm

Deep Excision:

- A full thickness elliptical excision, down to the level of deep muscular fascia.
- Melanoma of the ear is generally treated by full thickness wedge excision and primary closure due to the proximity of the underlying cartilage to the thin overlying skin.
- subungual melanoma of the index, middle, ring, or little fingers, this requires amputation through the mid-portion of the middle phalanx; for the thumb, through the proximal phalanx.

Regional Lymph Node Treatment:

- 1. Sentinel Lymph Node Biopsy:** The sentinel lymph node is the first lymph node in the drainage basin to receive afferent lymphatic communication from the primary tumor site, indicated in clinically negative node involvement.
- 2. Lymphadenectomy:** Complete surgical lymphadenectomy is indicated in patients with clinically involved nodes diagnosed by examination, fine needle aspiration, and/or sentinel lymph node biopsy.