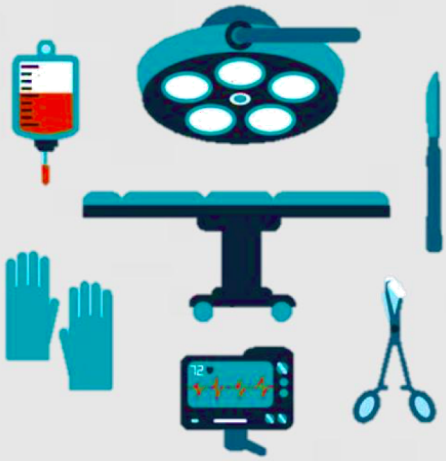


Skin and soft tissue tumors

Objectives:

1. Classify skin tumors according to their cell of origin.
2. Be able to take history of skin lesions and describe the warning signs and symptoms that you should look for.
3. Differentiate between the different types of epidermal and dermal neoplasms.
4. Differentiate between the different types of cysts.
5. Recognize the risk factors leading to skin malignancies and how to prevent them.
6. Be able to distinguish between SCC and BCC and be familiar with the clinical presentation, diagnosis, and ways of treatment.
7. Differentiate between the benign and malignant pigmented skin lesion and be familiar with the most common types.
8. Be oriented with melanoma epidemiology, risk factors, diagnosis and treatment.

Resources:

- Davidson's.
- Surgical recall.
- 435' team work.
- Dr. Nawarah's notes.

Done by: Ashwaq Almajed, Basel almeflh, Ohoud Alboqami
Leaders: Heba Alnasser, Jawaher Abanumy, Mohammed Habib, Mohammad Al-Mutlaq.
Revised by: Basel almeflh

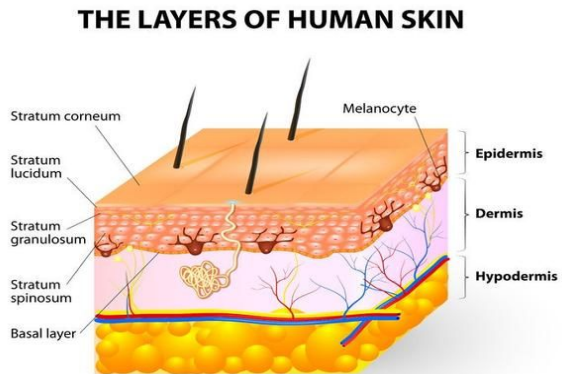
Color index:

Notes , Important , Extra , Davidson's

Editing file

Feedback

Basic review:



The skin protects us from microbes and the elements, helps regulate body temperature, and permits the sensations of touch, heat, and cold.

Skin has three layers:

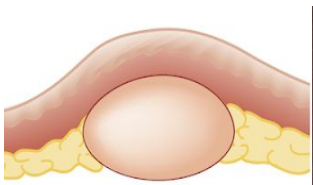
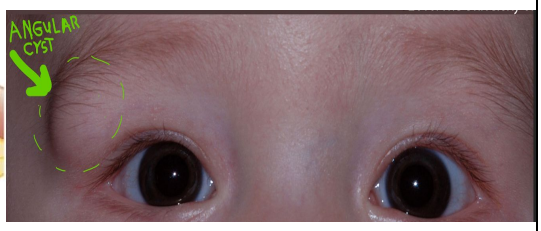
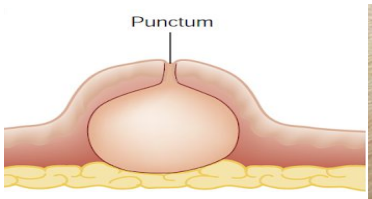
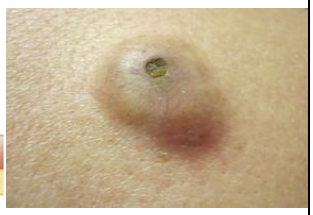
- The epidermis, the outermost layer of skin, provides a waterproof barrier and creates our skin tone.
- The dermis, beneath the epidermis, contains tough connective tissue, hair follicles, and sweat glands.
- The deeper subcutaneous tissue (hypodermis) is made of fat and connective tissue.

The skin's color is created by special cells called melanocytes, which produce the pigment melanin. Melanocytes are located in the epidermis.

Lecture outline:

Skin and soft tissue lesions	1.Cysts	Dermoid	
		Epidermoid	
	2.Lesions	A.Pigmented	Benign • Epidermal origin • Dermal origin Malignant • Melanoma
		B.Non-pigmented	Benign •Epidermal origin •Dermal origin •Sebaceous gland origin Malignant •Basal cell carcinoma •Squamous cell carcinoma

1.Cysts

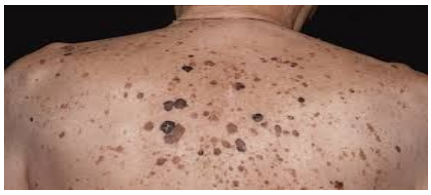
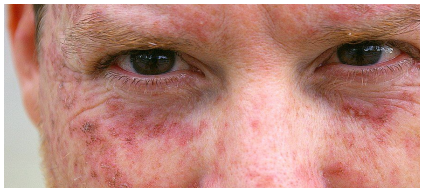
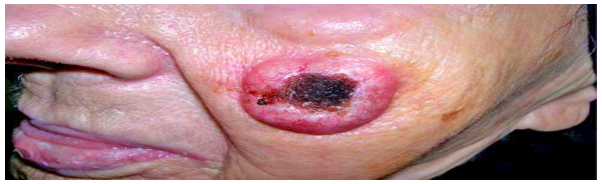
Dermoid cysts	Epidermoid (sebaceous or epithelial) Cysts
 Submuscular  -They arise from nests (appendages) of epidermal cells that have been sequestered in the dermis during development or implanted as a result of trauma. -Congenital dermoid cysts are found at the sites of embryonic fusion, commonly the root of the nose, the forehead or most commonly, adjacent to the lateral brow in the line of fusion of the maxilla and frontal bones (called **external angular cysts**). -They are lined by squamous epithelium and contain sebum, degenerate cells and sometimes hair. -Any troublesome cysts should be excised and care should be taken with congenital dermoids as they may extend deeply (CT scan is done before removal to detect the degree of invasion).	  Subcutaneous -They are subcutaneous unilocular swellings arising from inflammation in a pilosebaceous unit -Often fixed to the skin where a small central punctum is often visible. -They are NOT congenital, common places are the back, chest or scalp (called pilar cysts) -It has cheesy like material inside the cyst (because it contains **keratin** which resembles sebum[1] (hence the misnomer 'sebaceous')) -Painful when infected -Usually no treatment is required, self limited, unless it was infected its treated by incision and drainage + oral antibiotics without removing any parts.

2.Benign skin lesions

Skin lesions with epidermal origin		
Seborrhoeic Keratosis وَرَمٌ كولِيستيرُولِيّ	**Actinic (solar) keratosis**	**Keratoacanthoma** (molluscum sebaceum)
These basal cell papillomas are common in the face, trunk or back. They present as: ■Yellowish-brown or dark, thick greasy[2] plaques with a cracked irregular surface that classically appears to be "stuck on" to the skin surface with a shiny appearance. They assemble sebaceous glands (which appear oily)	■Scaly, erythematous macule or patch of skin. They can expand slowly becoming raised and crusty and may form hyperkeratotic horns or ulcers on the hands or face. ■Premalignant. ■**Sun** exposed area of **elderly,** specially those with a history of excessive sun exposure. ■1% progress to squamous cell	■Appear most commonly in the sixth decade. ■**Course of the lesions:** 1. They typically grow rapidly over 2-3 months from a small red papule to a large hemispherical nodule with a friable keratin core. 2. Growth ceases for a similar period of time before the lesion regresses spontaneously. ■Huge nodule with central ulceration. ■This lesion can be confused with squamous

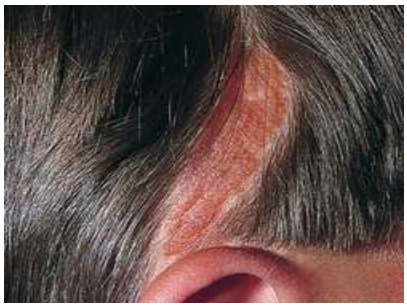
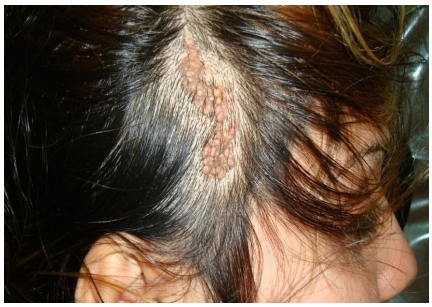
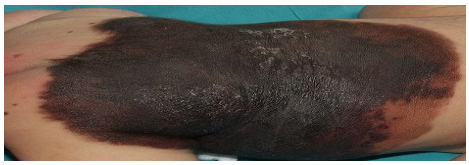
[1] But they don't actually contain sebum.

[2] دهني

■Torso of **elderly**. Most of the time patients are elderly ■**Rx:** curettage[3]	carcinoma. Treatment options (following a **biopsy**): 1. Cryotherapy. 2. Laser ablation. 3. Topical chemotherapy 4. Photodynamic therapy. 5. Surgical resection.	cell carcinoma because of its clinical and histological appearance, and for this reason simple excision is most often recommended. ■You can only differentiate it from SCC **by history**, it progresses faster than SCC. ■Heals by itself, if it gets bigger, ulcerating or caused annoyance to the patient we excise it.
		

Benign naevi

The total **number** of melanocytes in our skin is relatively fixed (800/mm^2), regardless of the color of the individual. Yet the amount of pigment produced varies greatly.
Condensation of melanocytes form a naevus or mole that can be congenital or acquired. The former are present at birth, tend to be larger and grow with the individual, often becoming darker, thicker, and hairy with age.

Sebaceous nevus of Jadassohn	Congenital melanocytic Nevus
 	 
-Congenital -Lesions arising from the sebaceous glands most commonly on the skull. -Complications include bleeding and ulceration. -For treatment multiple sessions are done to excise parts to make the healing process efficient (healing of the skin of skull is tough). -the color would be pale, brownish or same as the skin -They can transfer into malignancy.	Unlike the common mole, this lesion is present at birth. It can be large (over 20 cm) and are known as giant hairy naevi, which are associated with a significant risk of malignant degeneration. We try to excise it early in life and do skin grafting. ■Risk for malignant melanoma 0.07%-2% Excision is indicated if a mole shows: 1. An increase in pigmentation. 2. Irregular color or border. 3. Itching or bleeding. 4. If it looks different from the others - the "ugly duck" sign.

[3] To remove tissue by scraping or scooping.

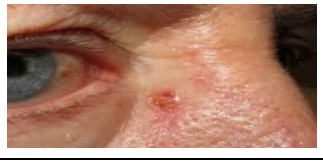
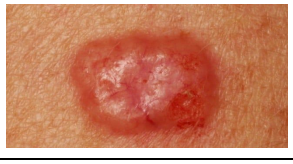
3.Malignant skin lesions

General risk factors:

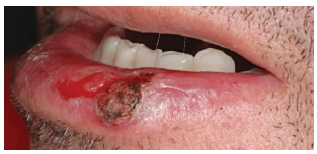
1. Sun exposure with episodes of sunburn.
2. Inherited disorders (albinism).
3. Immunosuppression.
4. Infections (e.g. HIV, HPV).
5. Irritation.
6. Chronic wounds:
   - ■Non-healing wounds like undrained abscess, malignancy or persistent infection.
   - ■Unstable scars: they're scars in specific places where they open with each movement. Cells will undergo metaplasia and eventually dysplasia, that's why we do skin grafting to avoid this type.
7. Chemical exposure (arsenic, tar).
8. Family history.
9. Large numbers of moles, especially if atypical or dysplastic.

A.Malignant nonpigmented skin lesions[BCC & SCC]:

- **Etiology of malignant non-pigmented skin lesion:** Radiation | Toxins | Immunosuppression | Genetic | Chronic wounds 'marjolin's ulcer' | Premalignant condition.

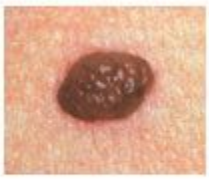
Basal Cell Carcinoma	Cutaneous Squamous Cell Carcinoma
■SLOW growing, **LOCALLY** invading (can go as deep as the bone), **RARELY** metastasizes. ■Most common neoplasm in caucasians in the western world and the most common skin cancer. ■They classically present as firm nodules with pearlescent, shiny telangiectatic; rolled borders and occasional central ulceration. ■85% after the age of 40. ■80% in **SUN** exposed areas (head, neck and trunk) especially on the nose. ■Clinical subtypes include superficial, nodular, sclerosing, infiltrative, cystic and pigmented lesions. ■ Sunburns can result in skin cancer on the long run. ■**Treatment:** ○ Surgical excision with safety (2-4mm) margin. ○ Moh's micrographic surgery (used for infiltrative and sclerosing forms as they have less distinct features and are therefore more difficult for full excision. It is also indicated for recurrent lesions and for lesions with malignant[4] position). We perform this type if the safety margin isn't there. ○ Radiation. For older patients who can't undergo surgery ■Occasionally, the tumor is highly invasive and can burrow deeply, despite little apparent surface activity.  	■This is less common but more aggressive and faster growing than a BCC. ■It arises from the stratum spinosum of the epidermis and may affect any area although is particularly common on exposed parts such as the ear, cheeks, lower lips and backs of the hands. ■It may develop from an area of epithelial hyperplasia or keratosis. ■Presentation: hard erythematous nodules which proliferate and occasionally ulcerate. ■**Additional risk factors :** ○ Smoking ○ human papillomavirus ○ herpes simplex ○ Here in KSA people who use قات in the south are commonly the patients w/SCC on gum, tongue or lips. ○ Can metastasize to nearby lymph nodes. Rx: complete surgical excision or radiotherapy if surgery is not possible.

[4] By malignant; we mean that it's in a position close to vital structure.

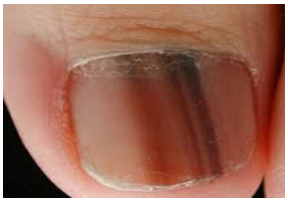
B.Malignant pigmented skin lesion [Malignant melanoma]:

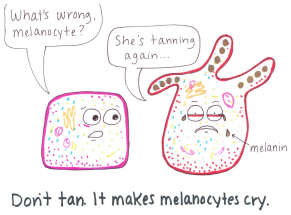
- **Malignant melanoma Risk factors:** Premalignant lesions | Previous melanoma | Age | Race | Fitzpatrick type1 and type 2 | Sunburn and sunbed use | Naevi



BENIGN

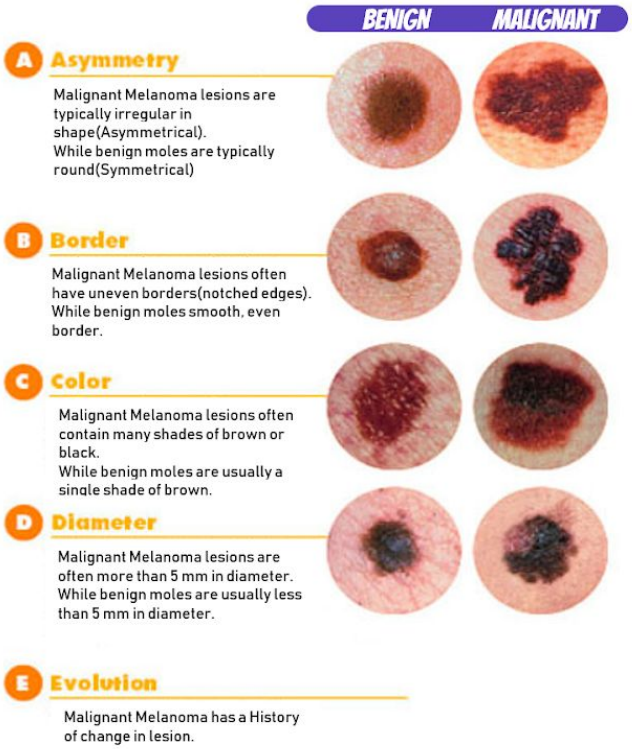
MALIGNANT





Malignant lesions are ill defined, dark and more than one while benign lesions are well circumscribed and one only.

- **How to differentiate benign lesion from melanoma:** Important for OSCE.



7 points checklist for assessing risk of melanoma

Suspect melanoma if there are 1 or more **major signs:**

1. Change in size
2. Change in shape
3. Change in color

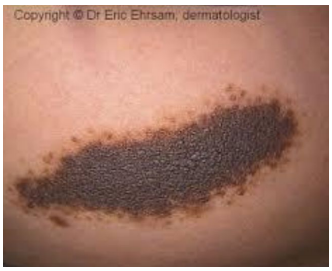
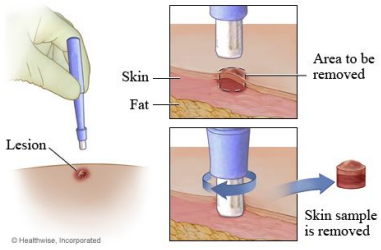
3 or 4 **minor signs** without a major sign can also indicate a need to biopsy suspicious moles:

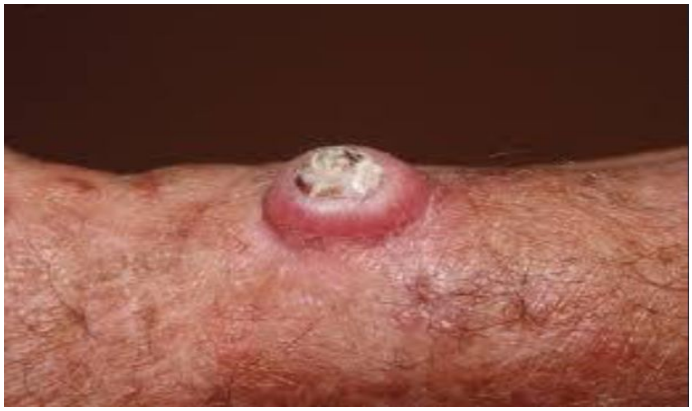
4. Inflammation
5. Crusting or bleeding
6. Sensory change
7. Diameter (equal or more than 7)

❖ Marjolin's ulcer:

This represents malignant degeneration within a pre-existing scar or chronic inflammatory lesion with an average latency period of around 30 years. The incidence is highest in **old burn scars followed by osteomyelitic wounds**; however, they also occur in areas of venous insufficiency and on pressure sores.

- The lesions are typically slow to develop and metastasise late but are very aggressive thereafter.
- Treatment involves excision and appropriate reconstruction.

	This is Malignant melanoma, ill defined and dark. We take a good history from the patient, know risk factors such as family history and examine other areas to see other lesions, biopsy is taken, named **punch biopsy** from the margins to see the levels of differentiation.	



Dermoid cyst. We try first to see the extension of the cyst by CT scan. Excision is the treatment	The DDx here is keratoacanthoma and SCC, the fast or slow progression info from the history will help in giving a definite diagnosis.

[⊠for skin lesion examination check out the link]

Surgical Recall:

What are the most common skin cancers?1. Basal cell carcinoma (75%) - 2. Squamous cell carcinoma (20%) - 3. Melanoma (4%)
What is the most common fatal skin cancer? Melanoma

MELANOMA

What is it? Neoplastic disorder produced by malignant transformation of the melanocyte; melanocytes are derived from neural crest cells
Which patients are at greatest risk? White patients with blonde/red hair, fair skin, freckling, a history of blistering sunburns, blue/green eyes, actinic keratosis,
What are the three most common sites?1. Skin 2. Eyes 3. Anus (T ink: SEA Skin, Eyes, Anus)
What is the most common site in African Americans? Palms of the hands, soles of the feet (acral lentiginous melanoma)
What characteristics are suggestive of melanoma? Usually a pigmented lesion with an irregular border, irregular surface, or irregular coloration,Other clues: darkening of a pigmented lesion, development of pigmented satellite lesions, irregular margins or surface elevations, notching, recent or rapid enlargement, erosion or ulceration of surface, pruritus
What are the "ABCDs" of melanoma?Asymmetry_Border irregularity_Color variation_Diameter 6 mm and Dark lesion
What are the associated risk factors? Severe sunburn before age 18, giant congenital nevi, family history, race (White), ultraviolet radiation (sun), multiple dysplastic nevi
How does location di er in men and women? Men get more lesions on the trunk; women on the extremities
Which locations are unusual? Noncutaneous regions, such as mucous membranes of the vulva/vagina, anorectum, esophagus,& choroidal layer of the eye
What is the most common site of melanoma in men? Back (33%)
What is the most common site of melanoma in women?Legs (33%)
What are the four major histologic types?1. Super cial spreading_ 2. Lentigo maligna_ 3. Acral lentiginous_ 4. Nodular
Define the following terms:

- Super cial spreading melanoma: Occurs in both sun-exposed and non-exposed areas; most common of all melanomas (75%)
- Lentigo maligna melanoma:Malignant cells that are super cial, found usually in elderly patients on the head or neck Called "Hutchinson's freckle" if noninvasive Least aggressive type; very good prognosis Accounts for 10% of all melanomas
- Acral lentiginous melanoma:Occurs on the palms, soles, subungual areas, and mucous membranes Accounts for 5% of all melanomas(most common melanoma in African American patients; 50%)
- Nodular melanoma:Vertical growth predominates Lesions are usually dark Most aggressive type/worst prognosis Accounts for 15% of all melanomas
- Amelanotic melanoma: Melanoma from melanocytes but with obvious lack of pigment

What is the most common type of melanoma? Superficial spreading (75%) (Think:SUPERficial SUPERior)
What type of melanoma arises in Hutchinson's freckle? Lentigo maligna melanoma
What is Hutchinson's freckle? Lentigo maligna melanoma in the radial growth phase without vertical extension (noninvasive); usually occurs on the faces of elderly women

SQUAMOUS CELL CARCINOMA

What is it? Carcinoma arising from epidermal cells
What are the most common sites?Head, neck, and hands
What are the risk factors? Sun exposure, pale skin, chronic inflammatory process, immunosuppression, xeroderma pigmentosum, arsenic
What is a precursor skin lesion? Actinic keratosis
What are the signs/symptoms? Raised, slightly pigmented skin lesion;ulceration/exudate; chronic scab; itching
How is the diagnosis made? (Small lesion—excisional biopsy)-(Large lesions—incisional biopsy)
What is the treatment? Small lesion (, <1 cm): Excise with 0.5-cm margin
Large lesion (>1 cm): Resect with 1- to 2-cm margins of normal tissue (large lesions may require skin graft / flap)
What is the dreaded sign of metastasis?Palpable lymph nodes (remove involved lymph node basin)
What is Marjolin's ulcer? Squamous cell carcinoma that arises in an area of chronic inflammation (e.g., chronic fistula, burn wound, osteomyelitis)
What is the prognosis? Excellent if totally excised (95% cure rate); most patients with positive lymph node metastasis eventually die from metastatic disease
What is the treatment for solitary metastasis? surgical resection

BASAL CELL CARCINOMA

What is it? Carcinoma arising in the germinating basal cell layer of epithelial cells
What are the risk factors? Sun exposure, fair skin, radiation, chronic dermatitis, xeroderma pigmentosum
What are the most common sites?Head, neck, and hands
What are the signs/symptoms? Slow-growing skin mass (chronic,scaly); scab; ulceration, with or without pigmentation, often described as "pearllike"
How is the diagnosis made? Excisional or incisional biopsy
What is the treatment? Resection with 5-mm margins (2-mm margin in cosmetically sensitive areas)
What is the risk of metastasis? Very low (recur locally)

MISCELLANEOUS SKIN LESIONS

What is an Epidermal Inclusion Cyst? EIC Benign subcutaneous cyst filled with epidermal cells (should be removed surgically) filled with waxy material; no clinical difference from a sebaceous cyst
What is a sebaceous cyst? Benign subcutaneous cyst filled with sebum (waxy, paste-like substance)from a blocked sweat gland (should be removed with a small area of skin that includes the blocked gland); may become infected; much less common than EIC
What is actinic keratosis? Premalignant skin lesion from sun exposure; seen as a scaly skin lesion (surgical removal eliminates the 20% risk of cancer transformation)
What is seborrheic keratosis? Benign pigmented lesion in the elderly; observe or treat by excision (especially if there is any question of melanoma), curettage, or topical agents
What is Bowen's disease of the skin? Squamous carcinoma in situ (should be removed or destroyed, thereby removing the problem)
What is "Mohs" surgery? Mohs technique or surgery: repeats thin excision until margins are clear by microscopic review (named after Dr. Mohs)—used to minimize collateral skin excision (e.g., on the face)

Summary

Dermoid cyst	-Arise from nests of epidermal cells. -Contain sebum, degenerate cells and sometimes hair. -Dermoid cysts are found at sites of embryonic fusion. External angular dermoid is the most common congenital dermoid cyst.
Sebaceous cysts (epidermoid)	-Epidermal cells and contain keratin which appear cheesy white. -They result from inflammation in a pilosebaceous unit. -Have a small central surface punctum.
Keratoacanthoma	-Found mainly in those over 50 years of age. -Most commonly on the face as a hemispherical nodule. -It grows rapidly and then involutes. -The distinction between keratoacanthoma and squamous cell carcinoma is the HISTORY.
Actinic keratosis	-Common in older, fair-skinned people who have been exposed to excessive sunlight. -Premalignant.
Seborrhoeic Keratosis	-Basal cell papillomas and are common in elderly common in the face and trunk. -Yellowish-brown or dark, thick greasy plaques. -Shiny appearance.
Sebaceous nevus of Jadassohn	-Lesion arising from the sebaceous glands most commonly on the skull. -Bleeding and ulceration are complications.
Congenital melanocytic Nevus	-Risk for malignant melanoma 0.07%-2%. -It's pigmented lesion, if it's big in size 'more than 20 cm' and hairy ,we call it giant hairy nevus.
Basal cell carcinoma	-Malignant lesion. -It is a slow growing locally invasive disease and it never metastasizes.
Cutaneous squamous Cell Carcinoma	-Less common but more aggressive and faster growing than a BCC.
Marjolin's ulcer	-Malignancy that develops in a chronic non-healing burn scar. -Nerves are destroyed making this lesion painless.
Malignant melanoma	-Affect fair-skinned people -Is invasion of the dermis by proliferating melanocytes. -Spreads rapidly by the lymphatic system and blood stream.

Questions

1- 71 year-old male came to dermatology clinic complaining of (huge nodule with central ulceration) in his cheek, the nodule suddenly appeared 6 weeks ago and is growing rapidly, what is the most likely diagnosis?
a. Squamous Cell Carcinoma.
b. Seborrhoeic Keratosis.
c. Keratoacanthoma.
d. Basal Cell Carcinoma.

2- What is the most common site of Dermoid cyst?
a. Nose.
b. adjacent to the lower lip.
c. scalp.
d. adjacent to the lateral brow.

3- 70 year old male of Caucasian origin developed an ulcer on the right side of his forehead which was slowly growing over 5 years. What is the most likely diagnosis?
a. Squamous cell carcinoma .
b. Melanoma .
c. Basal cell carcinoma .
d. Keratoacanthoma .

4- A 60-year old farmer, who is a tobacco smoker, developed an ulcerating lesion of his lower lip, which came out to be malignant after taking a biopsy Which of the following is the most likely primary diagnosis?
a. Marjolin ulcer.
b. Squamous cell carcinoma.
c. Basal cell carcinoma.
d. Keratoacanthoma.

5- A patient with scar following a burn presented later with a malignant tumor in the same area. What is the most likely type of cancer she developed?
a. Squamous cell carcinoma
b. Basal cell carcinoma
c. Melanoma
d. Fibroma

Answers:

1- c. (the clinical difference between Squamous cell carcinoma and Keratoacanthoma is that Keratoacanthoma grows faster).
2- d.
3- c.
4- b.
5- a. it is Marjolin's ulcer (type of squamous cell carcinoma that arise in areas of chronic wounds like burnes).