By the Name of ALLAH the Most Gracious the Most Mercifull

Skin and Subcutaneous Tissue

16th March, 2017

Part II

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To be read in

Bailey & Love's Short Practice of Surgery 26th Edition.

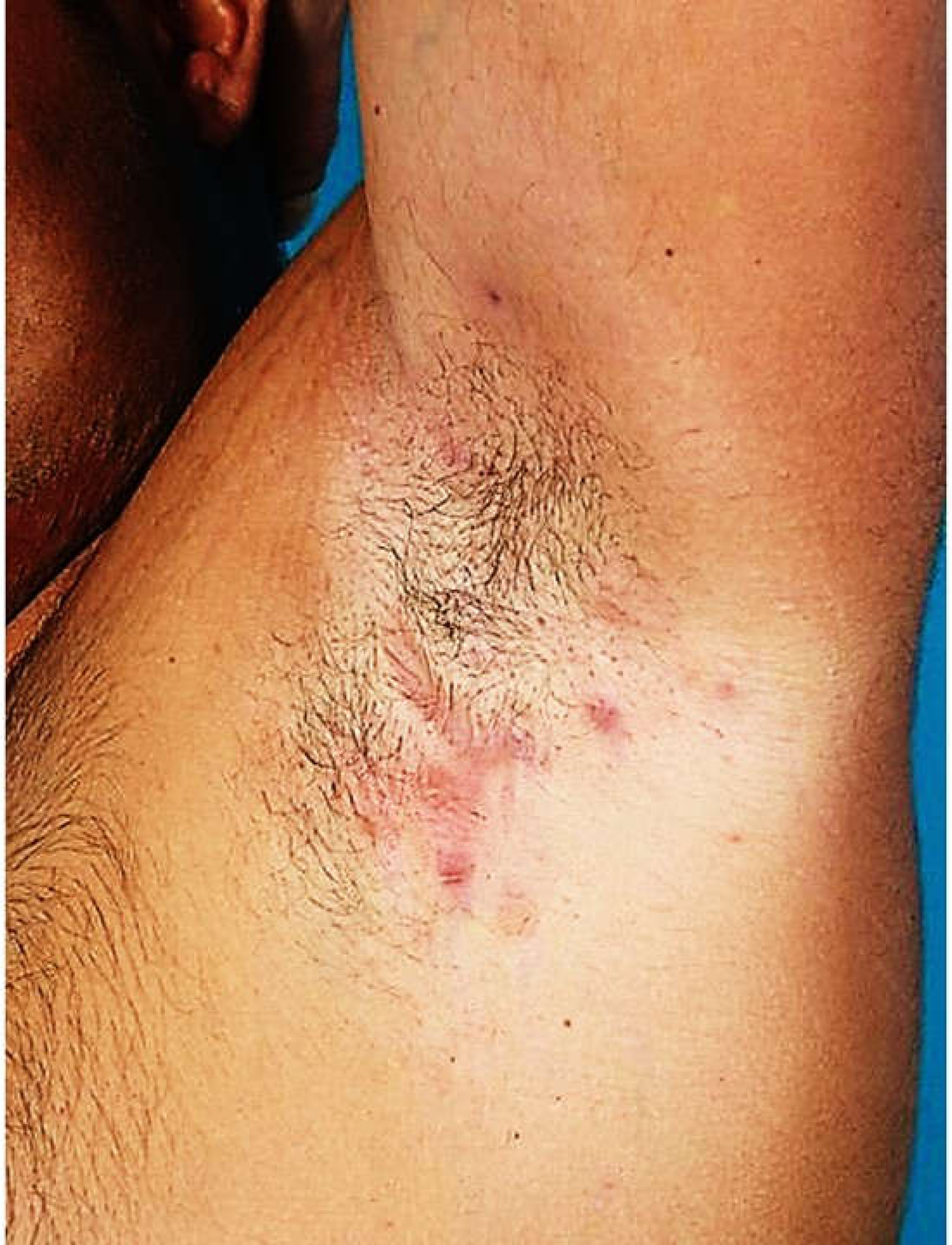
Ch 42 (577 - 602)

Infection

- **Hydradenitis Suppurativa.**
- **Impetigo.**
- **Erysipelas.**
- **Cellulitis / Lymphangitis.**
- **Necrotizing Fasciatis.**

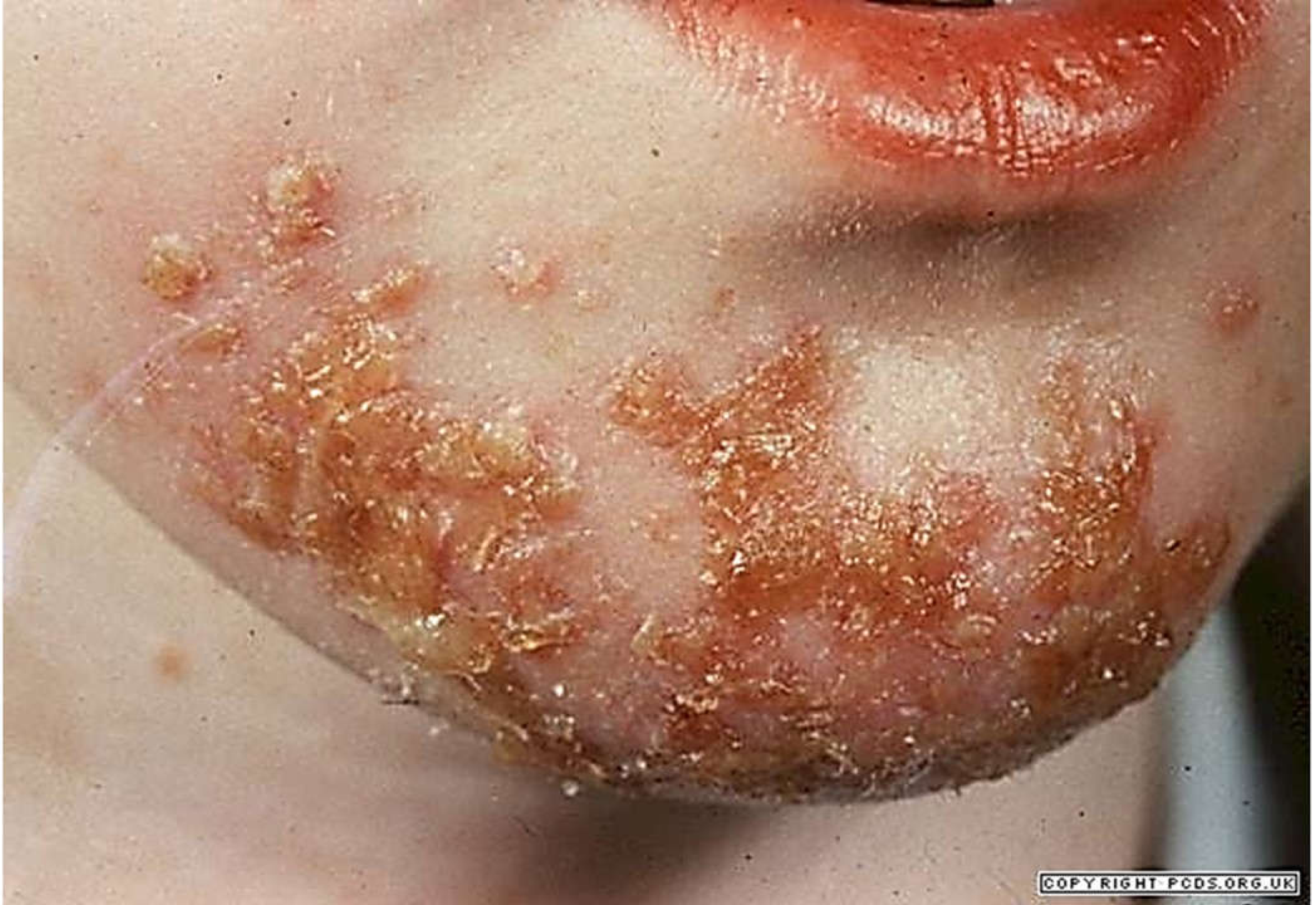
Hydradenitis Suppurativa

- Chronic inflammatory state of apocrine sweat gland mainly in the axilla and groin.
- F : M = 4:1 with genetic predisposition.
- Risk factor : obesity and smoking.
- Folliculitis with 2nd bacterial infection (*staph. aureus* & *propionobacterium acne*).
- A tender subcutaneous nodule which may discharge and leading to chronic inflammation and scar.
- Treatment (antiseptics, local and systemic antibiotics, anti androgen, Surgical excision and skin graft.



Impetigo

- Superficial skin infection with strept or staph or both.
- Blisters, ruptured , covered with a honey comb crust.
- Broad spectrum antibiotics.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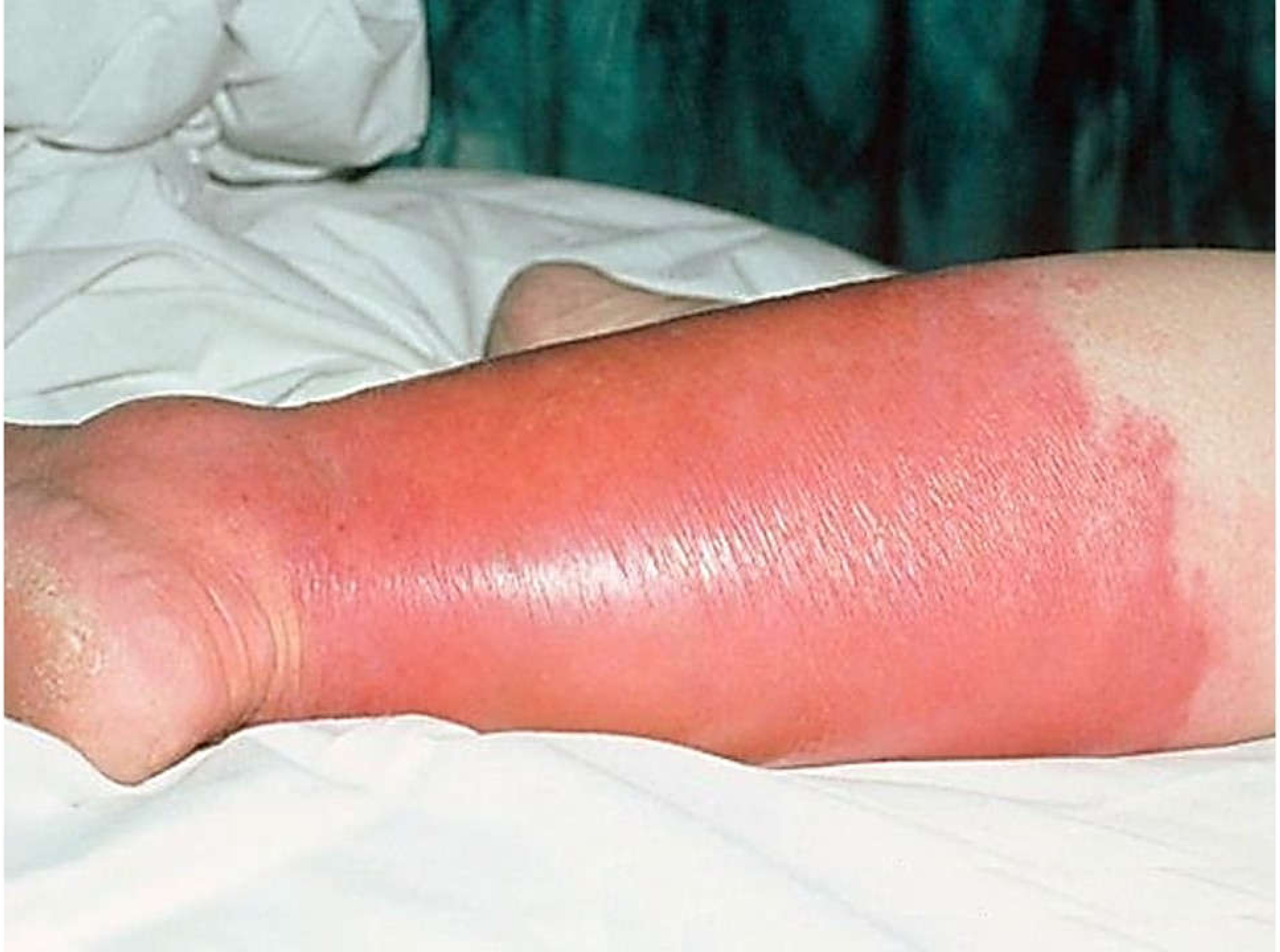
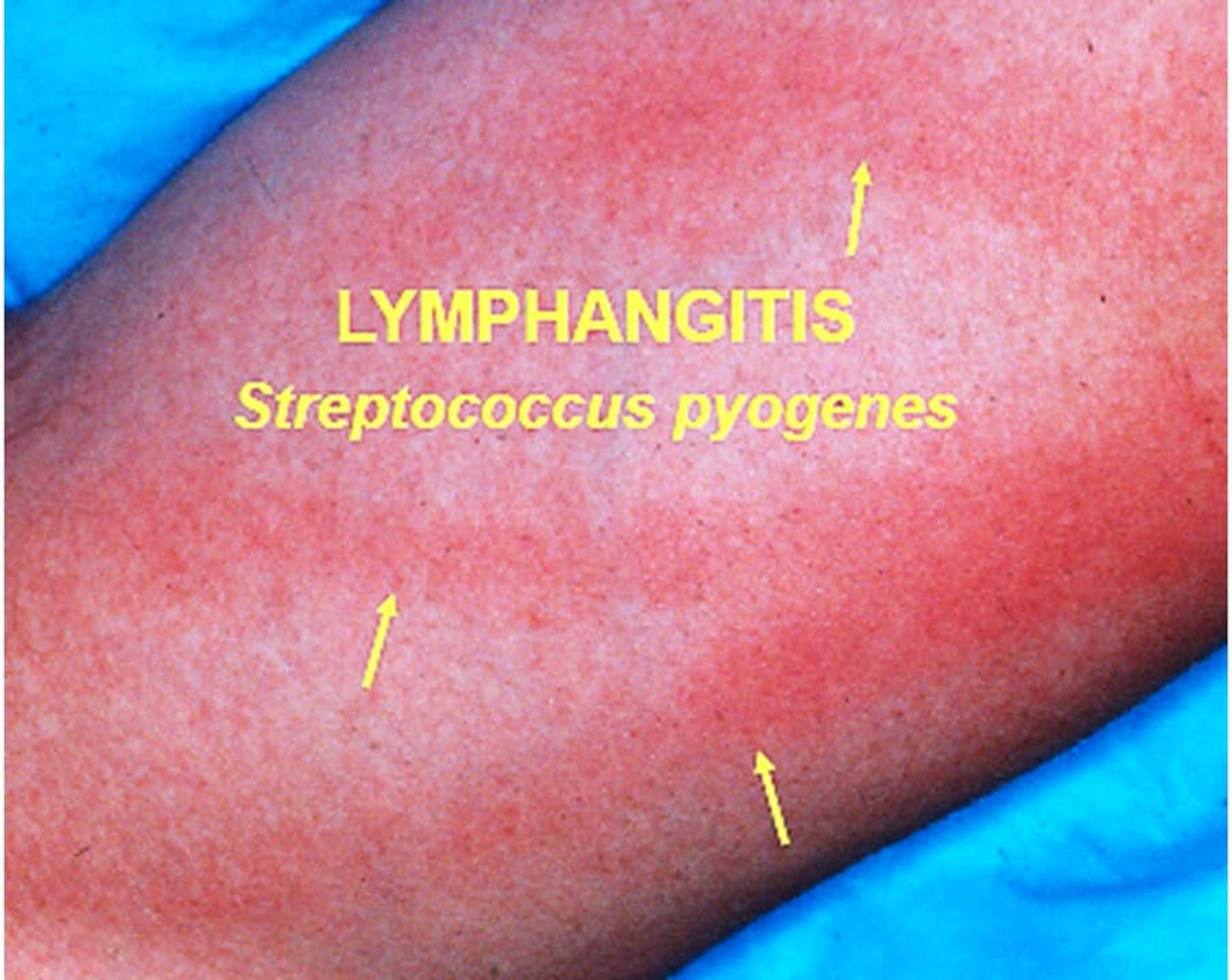
Erysipelas

- Sharply demarcated strept infection of superficial lymphatic vessels.
- Redness and oedema .
- Antibiotics.



Cellulitis / Lymphangitis

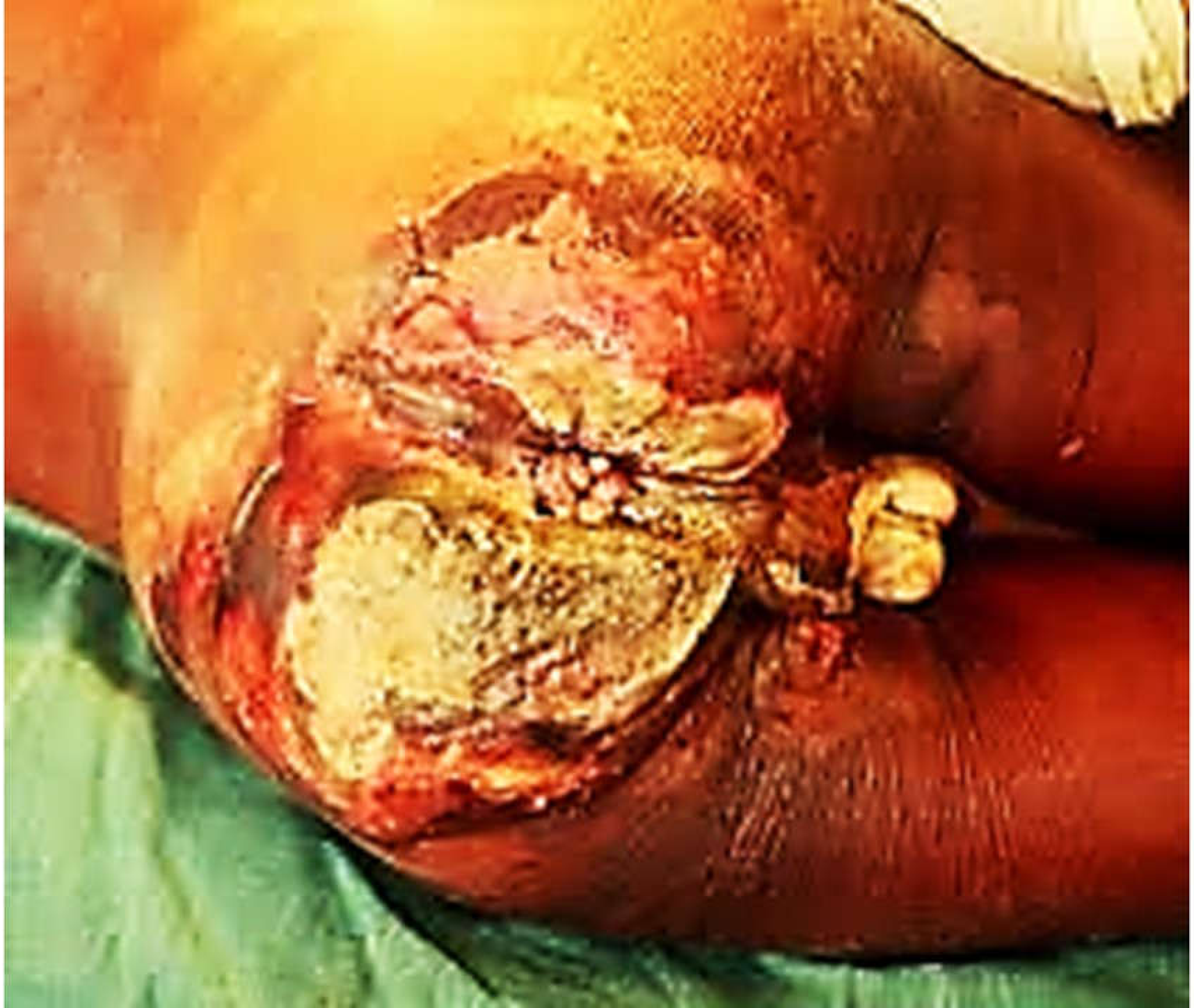
- Strepto. Infection of skin and subcutaneous tissue.
- More severe than erysipelas.
- Expanding area of erythematous and oedematous tissue .
- Associated with fever, malaise and leukocytosis.
- Erythema tracks the lymphatic vessels .
- Antibiotics.

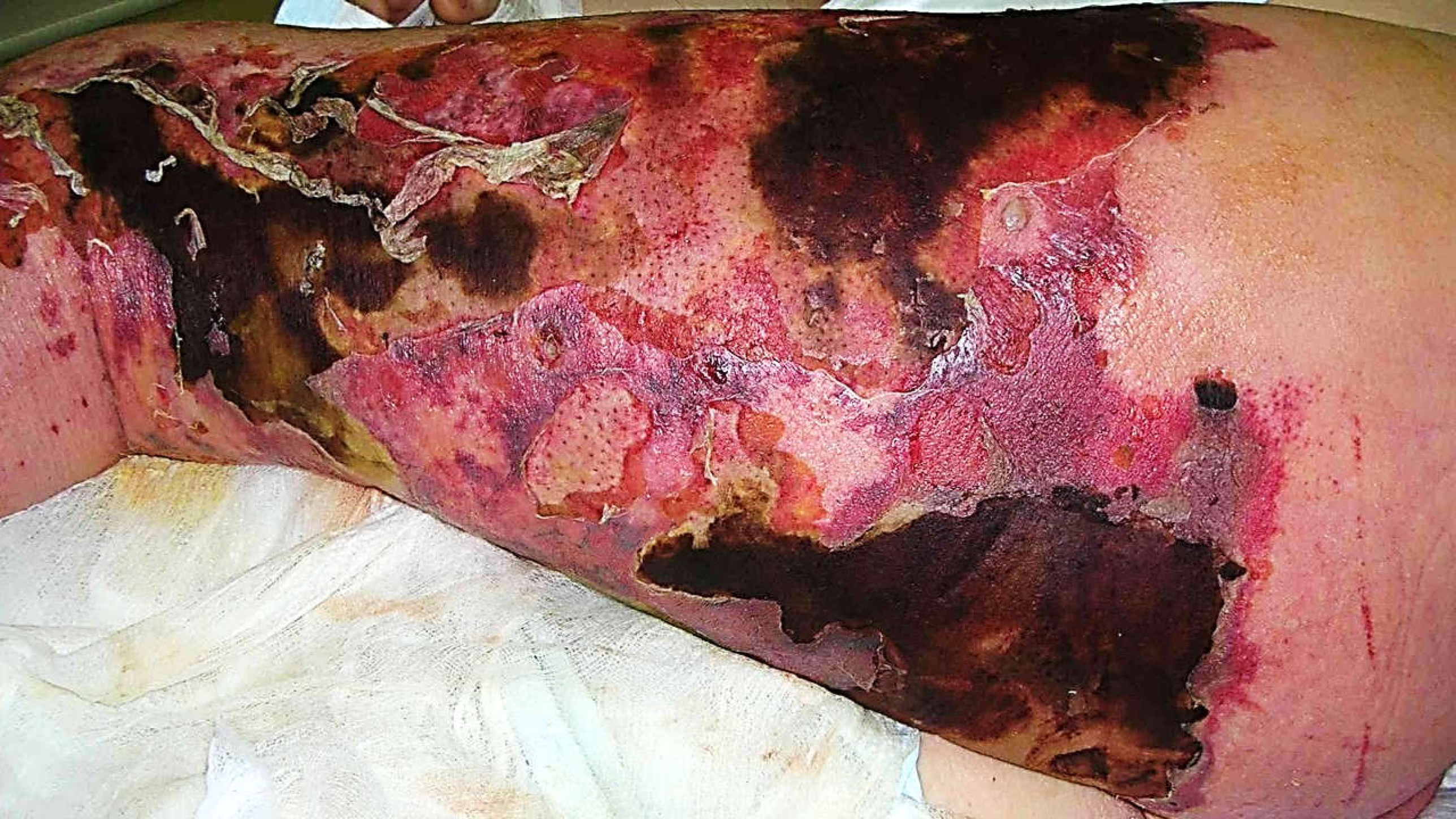

LYMPHANGITIS
Streptococcus pyogenes

Necrotizing Fasciatis

- Synergistic gangrene.
- Meleney gangrene.
- Fornier gangrene.
- Polymicrobial (sterpt (A, B) hemolytic), staph, E. coli, Proteous, bacteroids or Clostredia.
- Predisposing conditions (D.M., Trauama,smoking, pressure sore, IV drugs abuser, Immunosupressent , perineal infection and skin damage.
- Emergency condition.

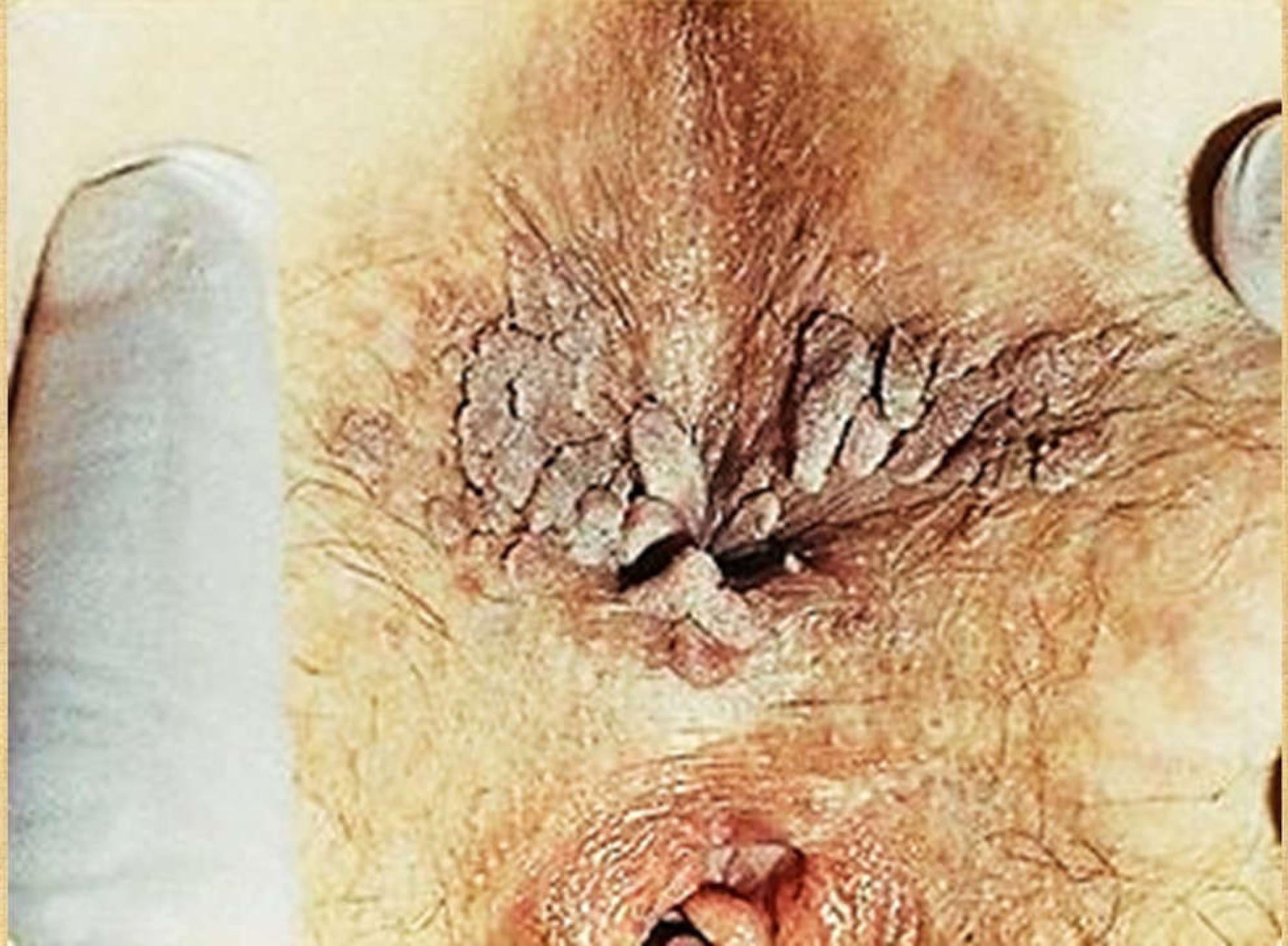
- Edema stretching beyond visible skin erythyma, a woody hard texture to the subcutaneous tissue.
- Inability to distinguish fascial plain from muscular plain.
- Toxic state.
- Radiology air in subcutaneous tissue.
- Resuscitation.
- Antibiotics.
- Debridement.
- Relook.
- Skin rotation flap if possible.





Infection (viral)

- Condylomata acuminata.
- Contagious sexually transmitted disease caused by some types of human papillomavirus (HPV)types 6 and 11.
- Treatments can be classified as either physically ablative, or topical agents.



Skin Tumours

- Benign : (Moles/ Naevous (Junctional, Compound, Intradermal,Spindle Cell & Halo.

  Café au lait spot, Mangolian Spot, Cystadenoma (sweet gland).

- Premalingnant : Solar Keratosis, Cutaneous hornm Kerato-Kanthoma, Bowen's disease, Paget's diseae , giant hairy Cells, dysplastic navous.

- Malignant Lesions:

  - Basal Cell Carcinoma:

  - Cutaneous Sequameous Cell Carcinoma.

  - Cutaneous Malignant Melanoma : (Superficial Spreading, Nodular, Lentigo Maligna, Acral Lentigious and other (Amelanotic and Desmoplastic).

  - Merckle Cell.

  - Angiosarcoma.

  - Kaposi Sarcoma.

- Metatatic Lesion (Leukeamia, Lymphoma , other distal metastatic tumors).

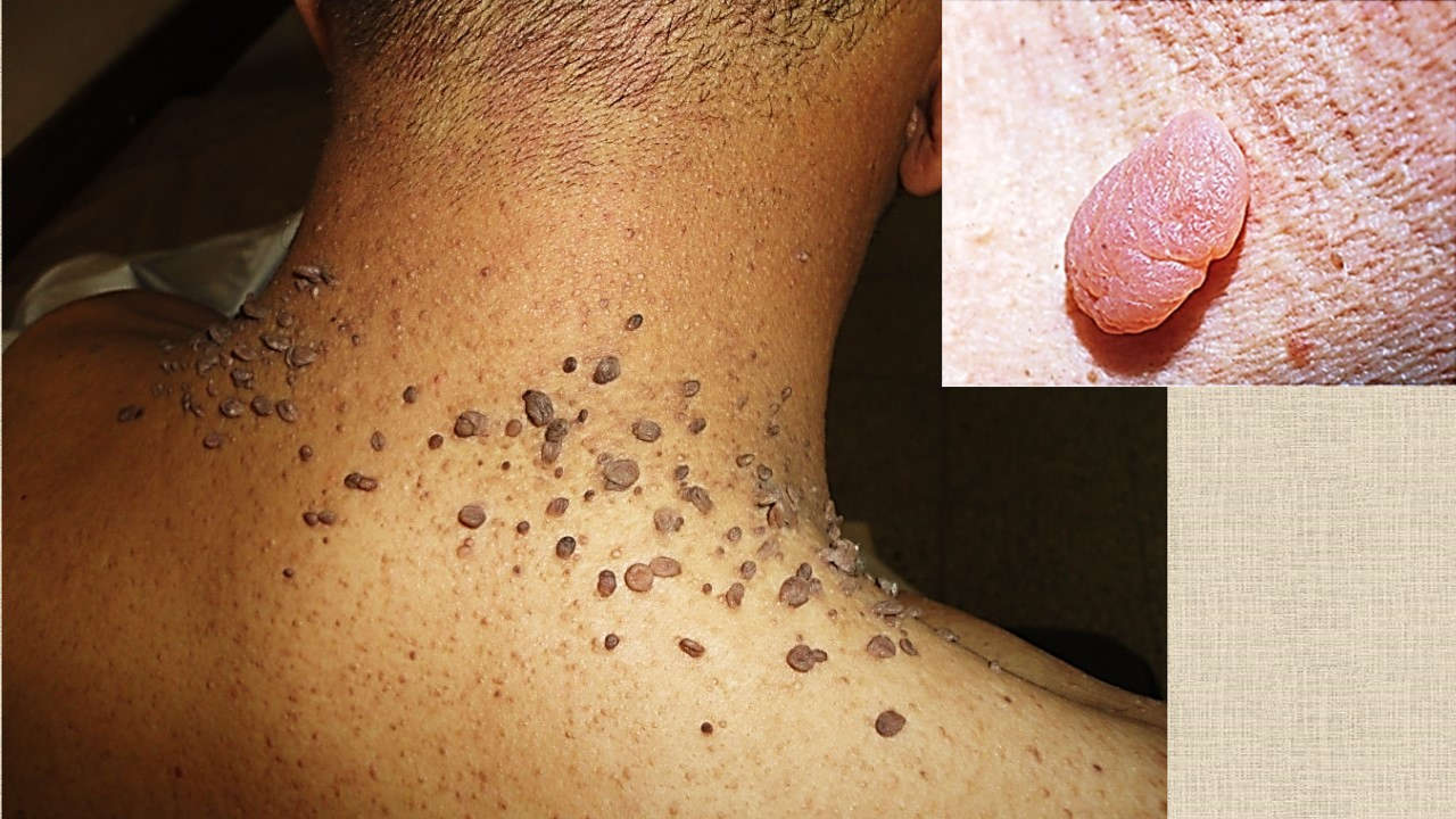
- Recurrent Tumours. (Not well compltet excision of the tumors).

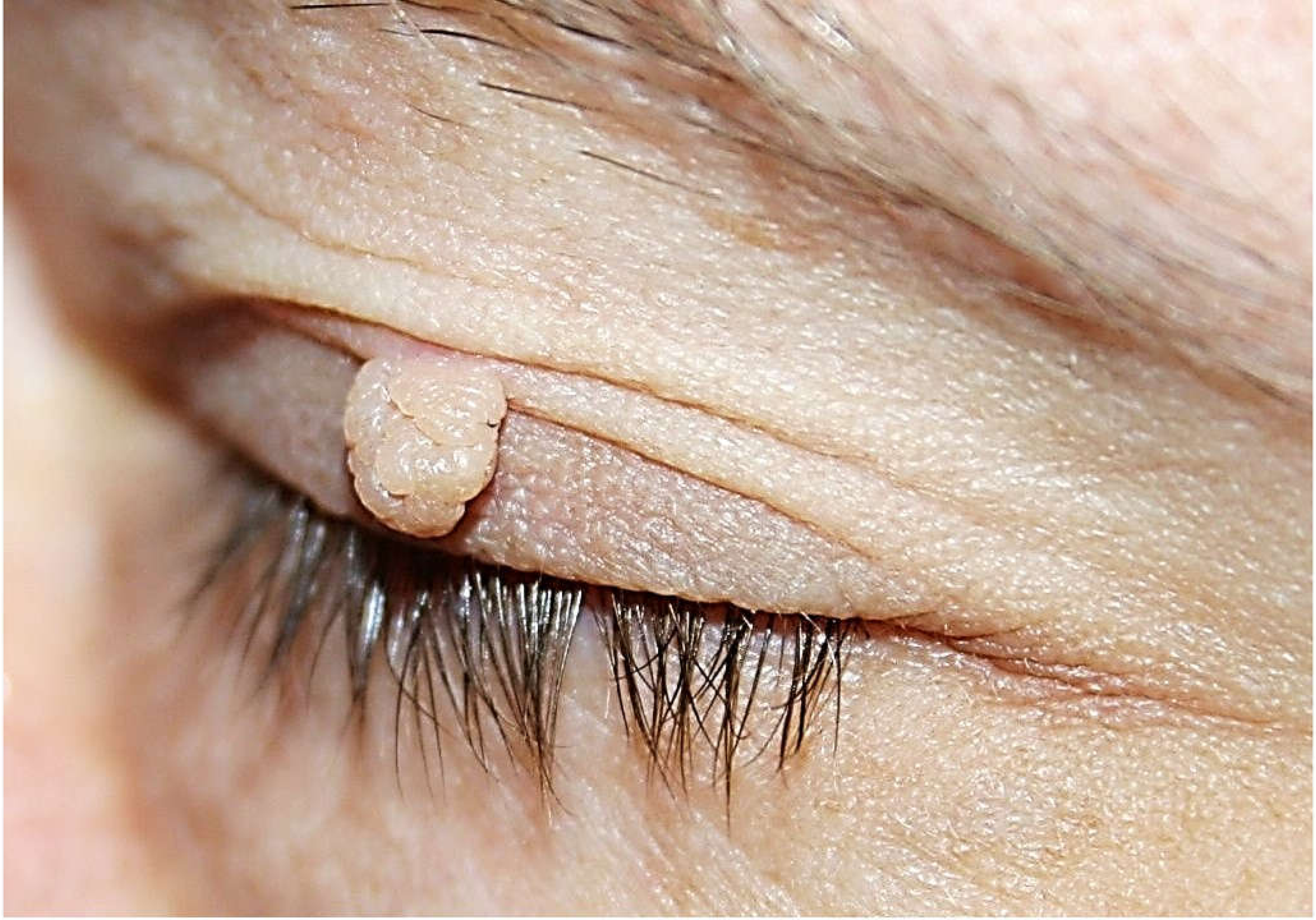
Benign Skin Tumours

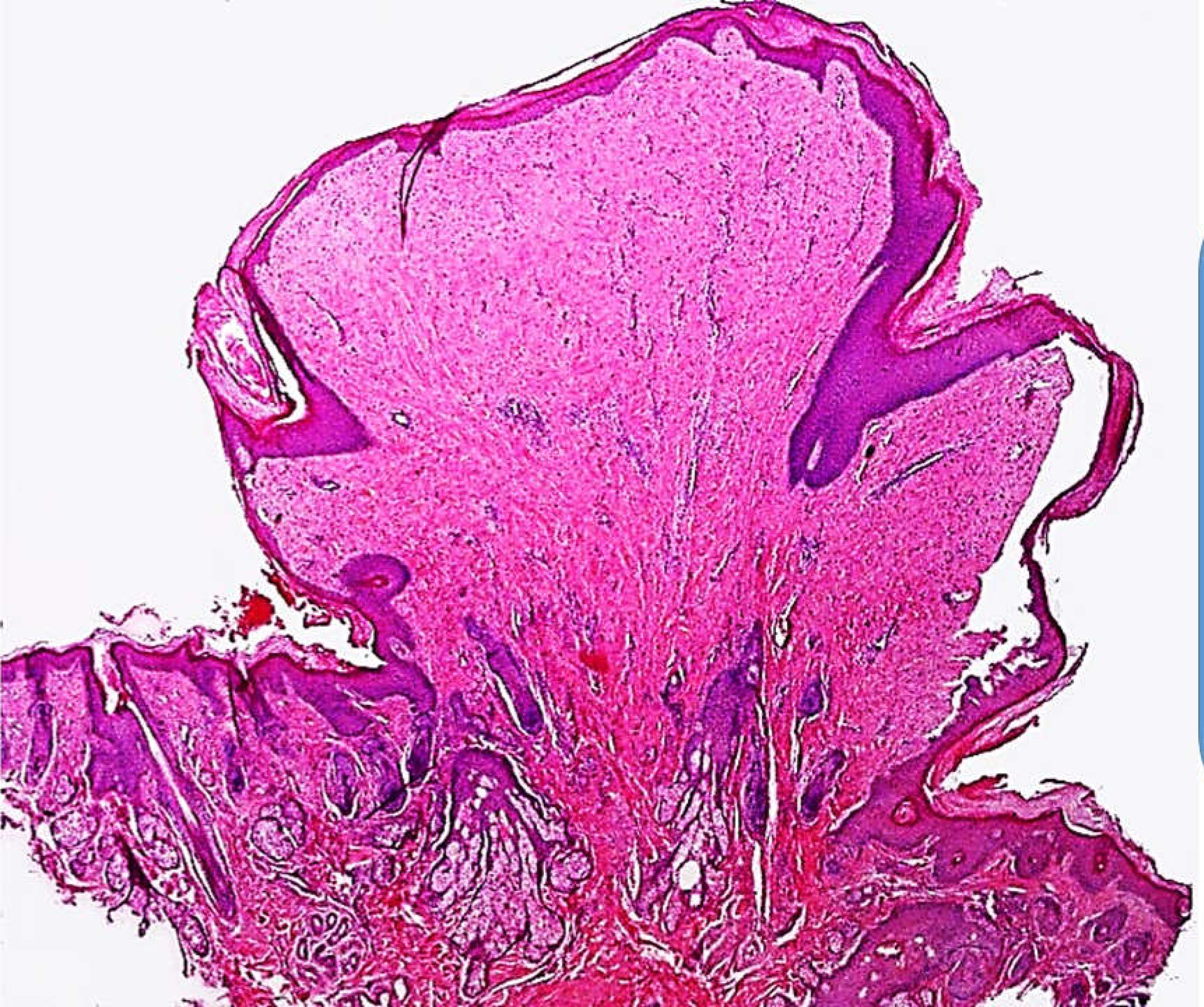
- **Acrochordon.**
- **Lipoma.**
- **Basal Cell Papilloma (Seborrhoeic Keratosis).**
- **Papillary wart.**
- **Mole and Naevus.**
- **Hemangioma.**

Acrochordon

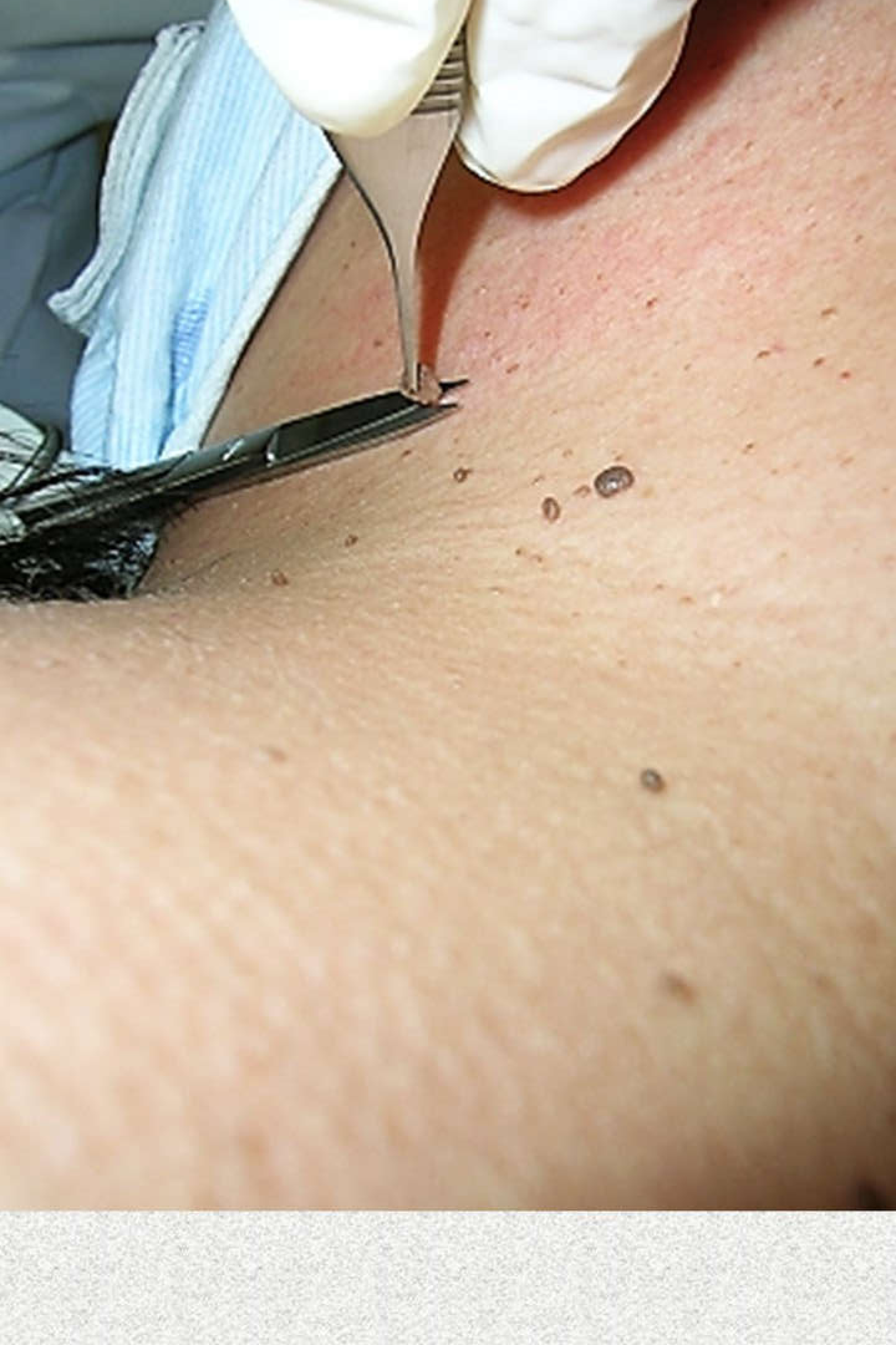
- Also known as a *skin tag* or *fibroepithelial polyp*.
- They are more common in women than in men.
- It is a small benign tumor that forms primarily in areas where the skin forms creases, such as the neck, armpit, and groin. They may also occur on the face usually on the eyelids.
- Is harmless, typically painless and usually do not grow or change over time.
- They are typically the size of a grain of rice. The surface may be smooth or irregular in appearance and is often raised from the surface of the skin on a fleshy stalk called a peduncle.
- Microscopically, an acrochordon consists of a fibrovascular core, sometimes also with fat cells, covered by an unremarkable epidermis. However, tags may become irritated by shaving, clothing, or eczema.
- Pathogenesis: Low-risk HPV 6 and 11. A causal genetic component is thought to exist.
- Because tags are benign, treatment is unnecessary unless the tags become frequently irritated or present a cosmetic concern. If removal is desired or warranted, then cauterization, cryosurgery or surgical excision, may be used.





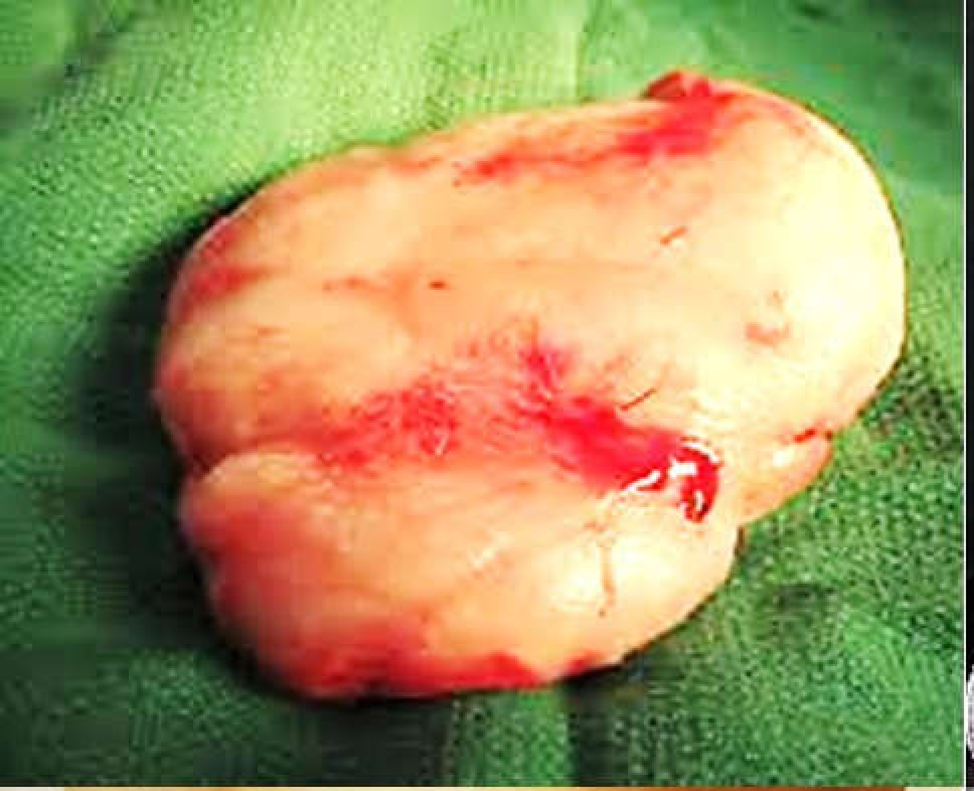
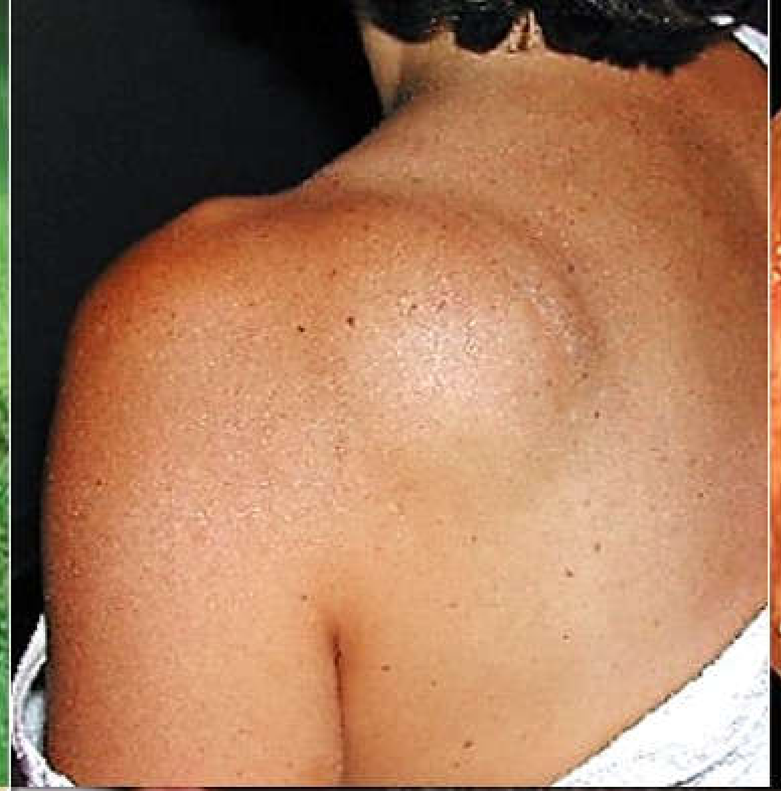
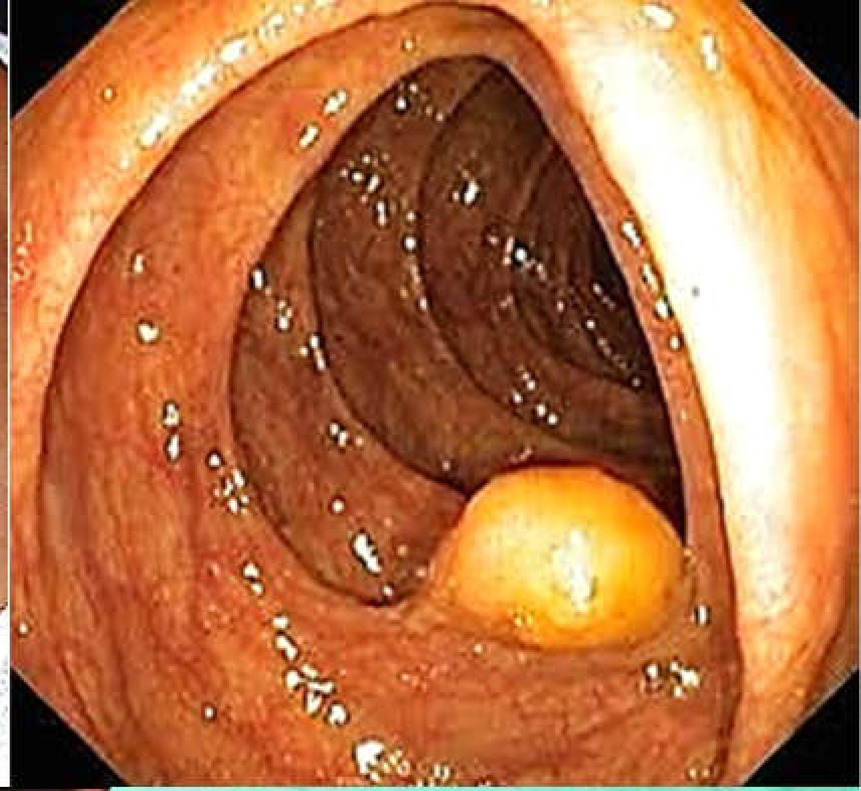
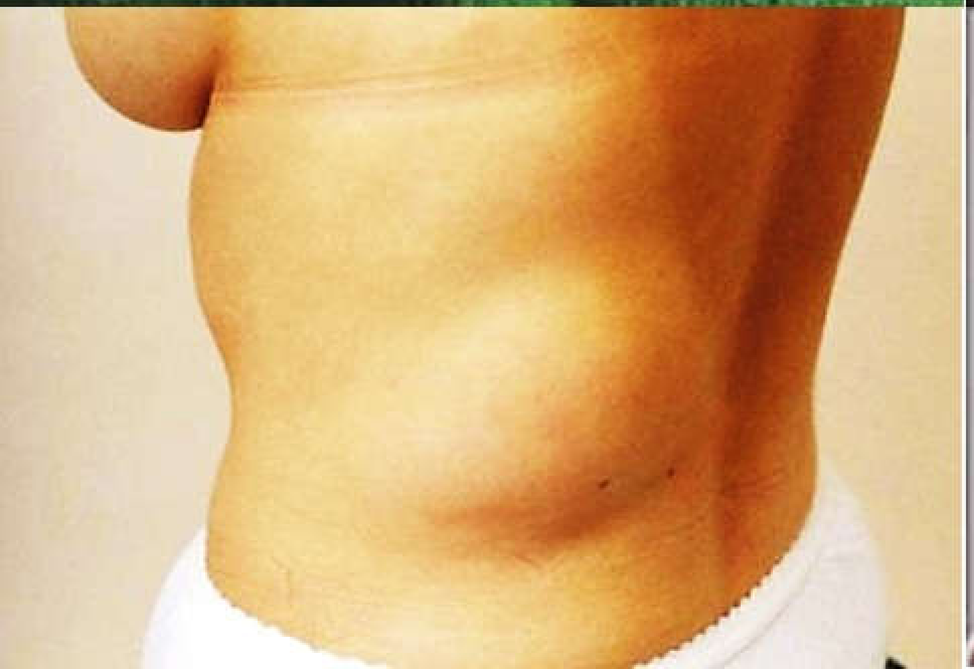
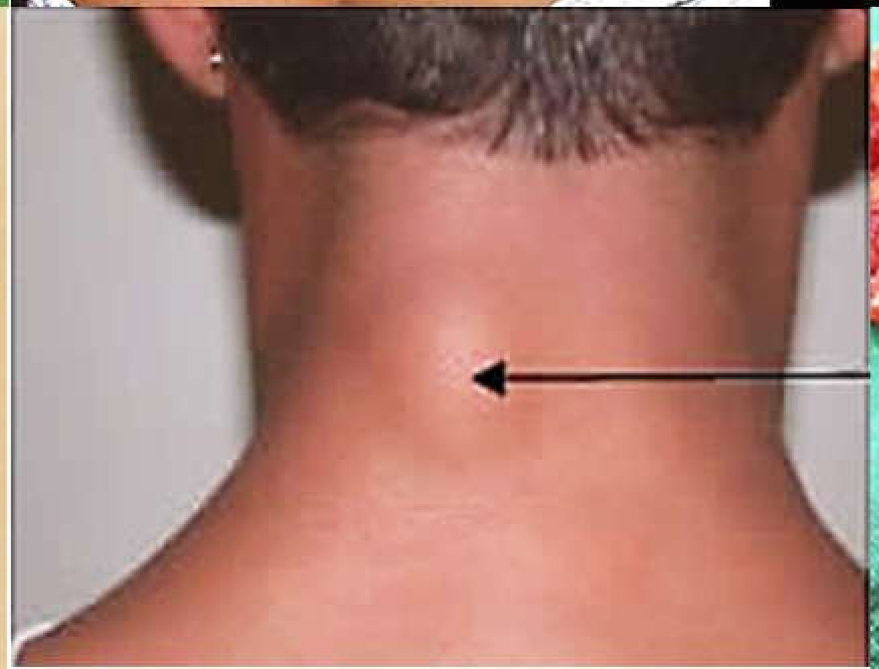
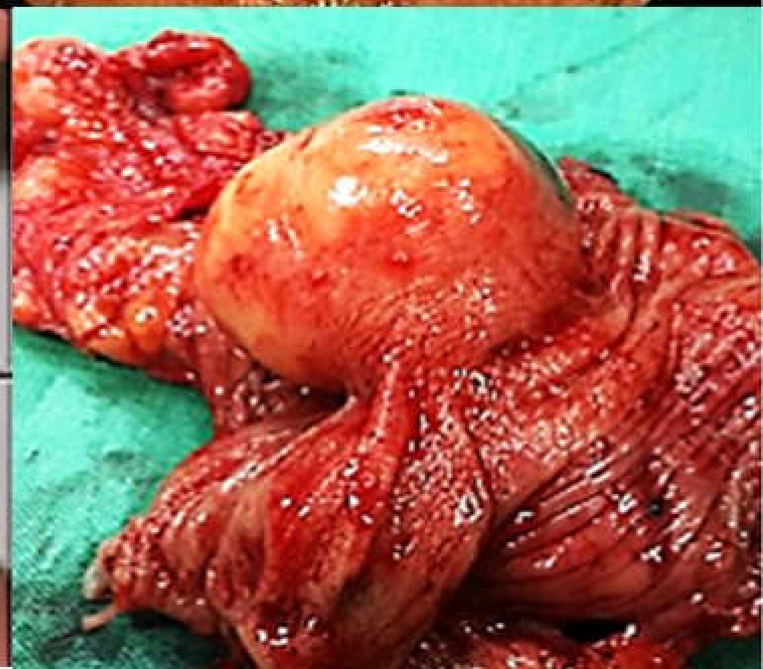


Acrochordon
A pedunculated, fibrous mass covered with epithelium of varied thickness.

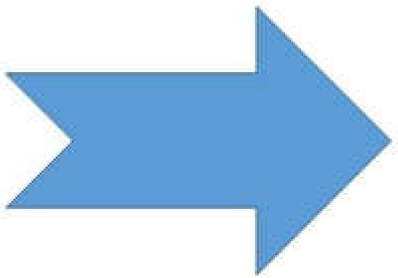


Lipoma

- Benign tumor of adipose tissue.
- It is the most common benign form of soft tissue tumor.
- Lipomatosis is believed to be a hereditary condition in which multiple lipomas are present on the body.
- Slow growing tumor.
- Freely mobile, not fixed to the underlying fascia (Slip sign).
- Fluctuation sign.
- Tx :Surgical excision.

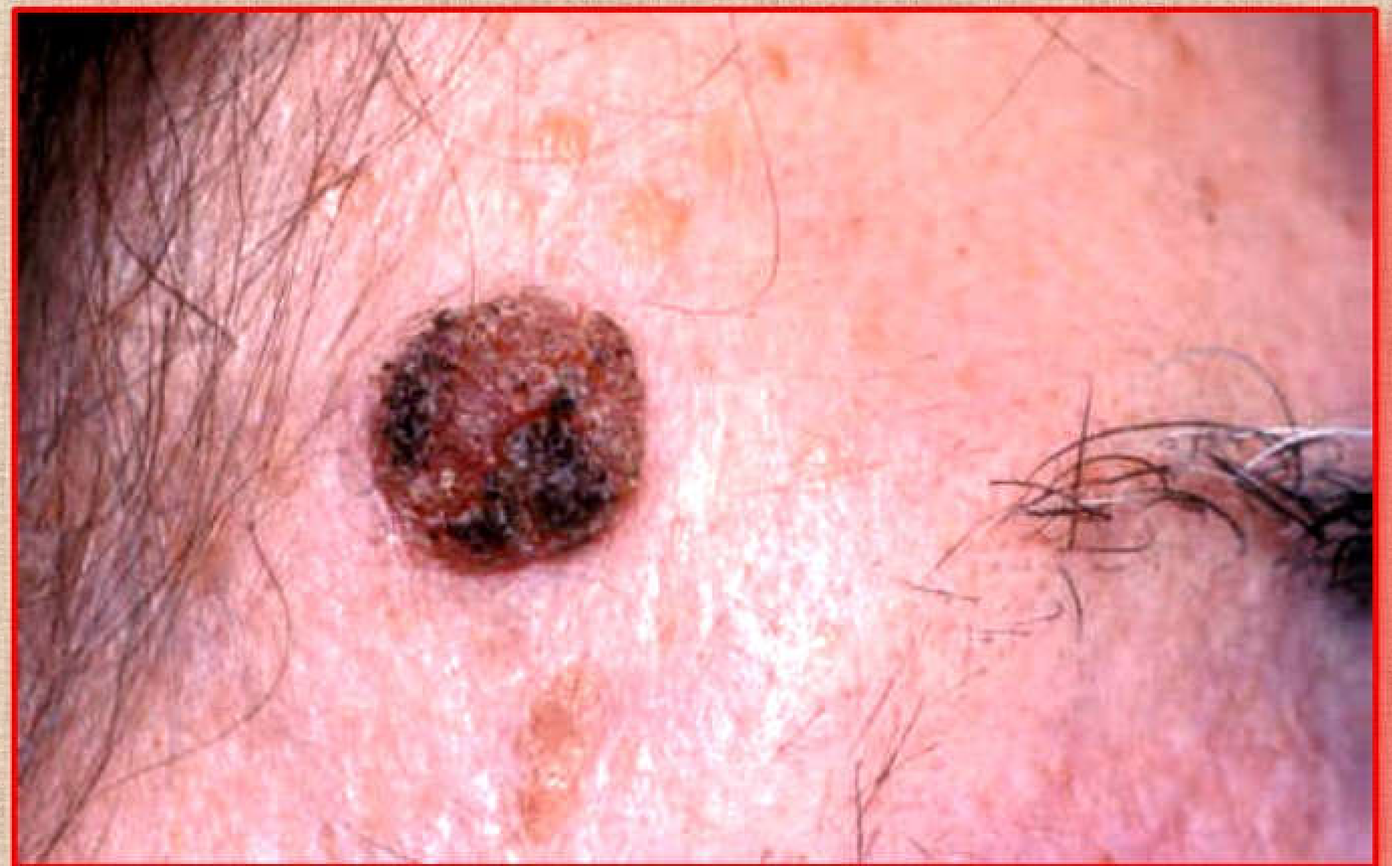
Common Sites for Lipoma are



- Lipomas in the major airways can cause respiratory distress related to bronchial obstruction; patients may present with either endobronchial or parenchymal lesions
- Previously undiagnosed lipomas of the oropharynx may also lead to airway difficulty at the time of intubation
- Patients with esophageal lipomas can present with obstruction, dysphagia, regurgitation, vomiting, and reflux; esophageal lipomas can be associated with aspiration and consecutive respiratory infections
- Cardiac lipomas are located mainly subendocardially, appearing as a mass projecting into the cardiac chamber
- Intramediastinal lipomas may impinge on the superior vena cava, thereby leading to superior vena cava syndrome
- Intestinal lipomas may manifest as classic obstruction, intussusception, volvulization, or hemorrhage
- Lipomas arising from fat in the intramuscular septa cause a diffuse, palpable swelling, which is more prominent when the related muscle is contracted
- Lipomas in intra-articular joint spaces or intraosseous sites, such as the calcaneus, may lead to joint dysfunction and pain that preclude normal ambulation
- Lipomas may also arise in the dural or medullary components of the spinal cord, thereby leading to cord compression and attendant sequelae .
- Lipomas occur frequently in the breast but not as frequently as expected considering the extent of fat that is present
- Lipomas may arise from the subcutaneous tissues of the vulva; they usually become pedunculated and dependent

Basal Cell Papilloma (Seborrhoeic Keratosis)

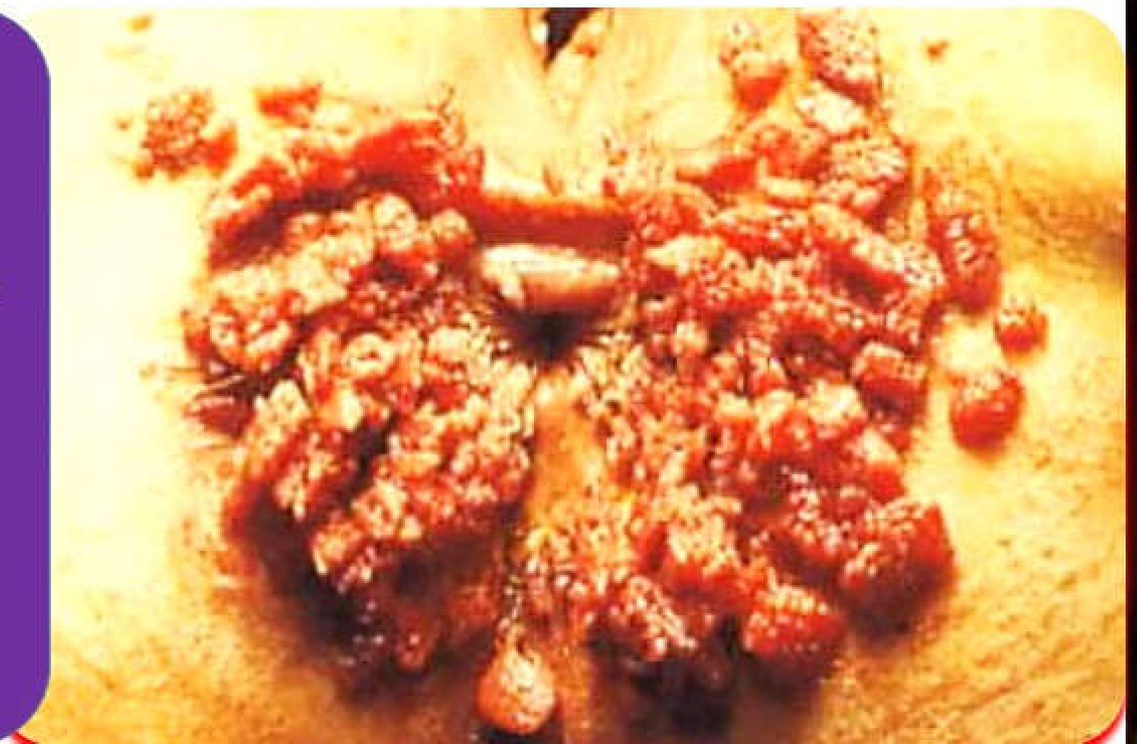
- Most common in elderly.
- Origin : Basal layer of epidermal cells containing melanocyte.
- A soft warty lesion, oftenly are pigmented and hyperkeratotic .

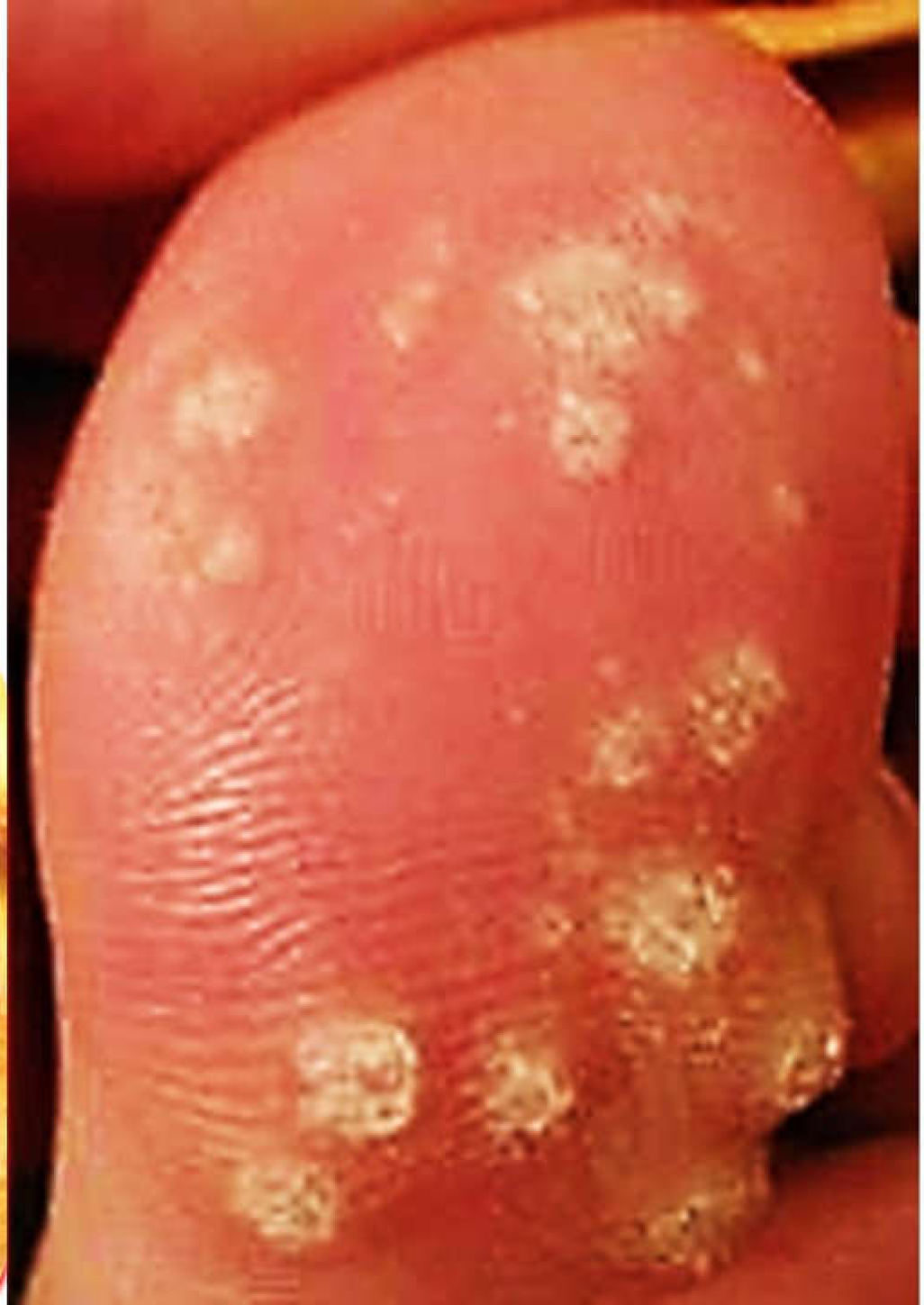


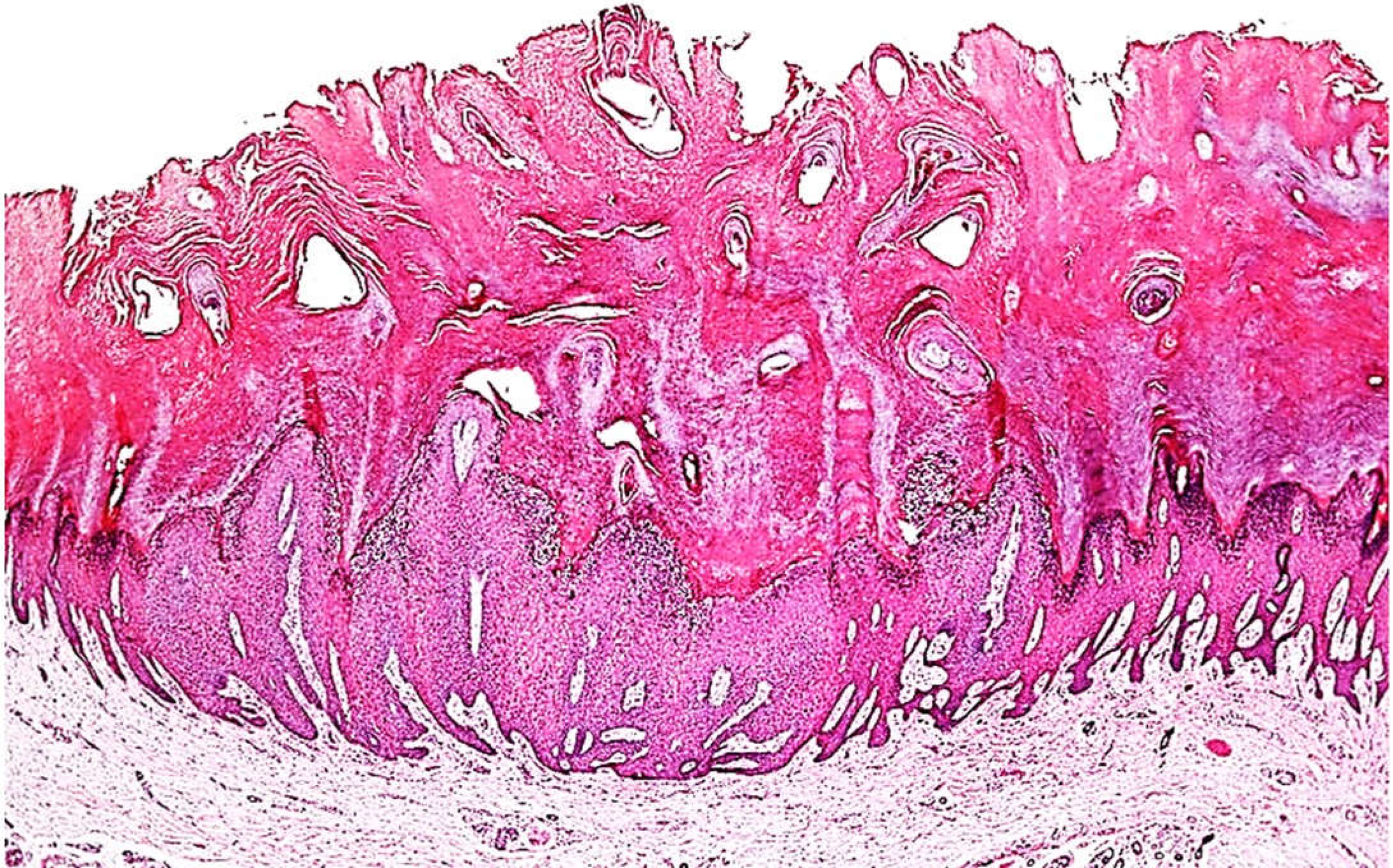
Papillary wart

- Is a benign epithelial tumor growing exophytically (outwardly projecting) in nipple-like and often finger-like fronds.
- Cuase : HPV infection.
- It may presented as Plantar warts and condylomata acuminata.

Keratolysis.
Electrodesiccation
Cryosurgery
Laser treatment







Mole and Naevus

Aggregation of melanocytes

Naevus = macule (بُقْعَة)

Mole = papule (بَثْرَة)

A junctional nevus is a mole found in the junction (border) between the epidermis and dermis layers of the skin.

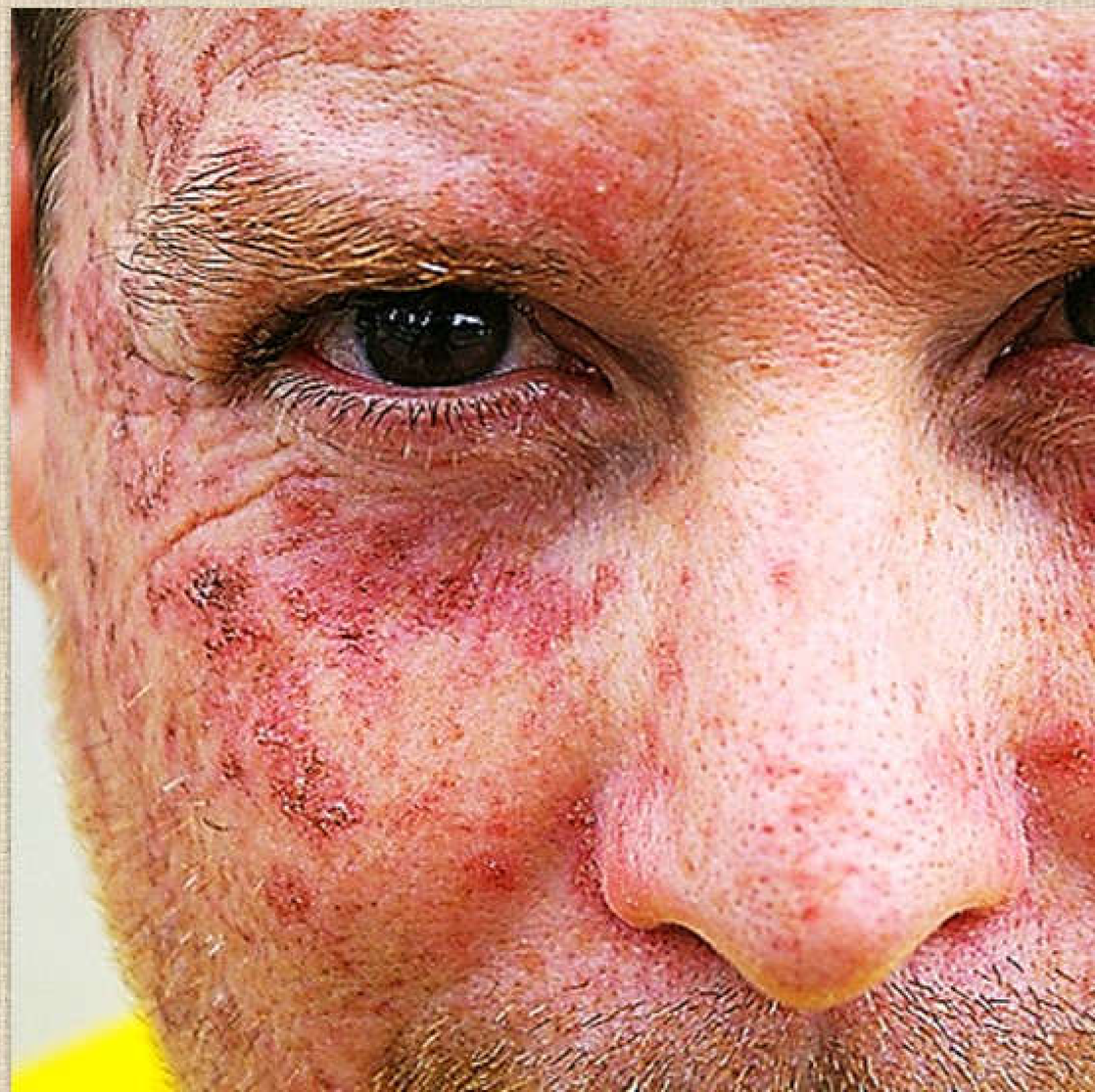
A compound nevus is a type of mole formed by groups of nevus cells found in the epidermis and dermis

Pre-malignant Skin Lesion

- **Solar Keratosis.**
- **Cutaneous Horn.**
- **Keratokanthoma.**
- **Bown’s disease.**

Solar Keratosis

- Is the most common skin condition caused by sun damage.
- Dyskeratosis and cellular atypia.
- Normal dermo-epidermal junction.
- 20 % S.C.C.



Topical Therapy

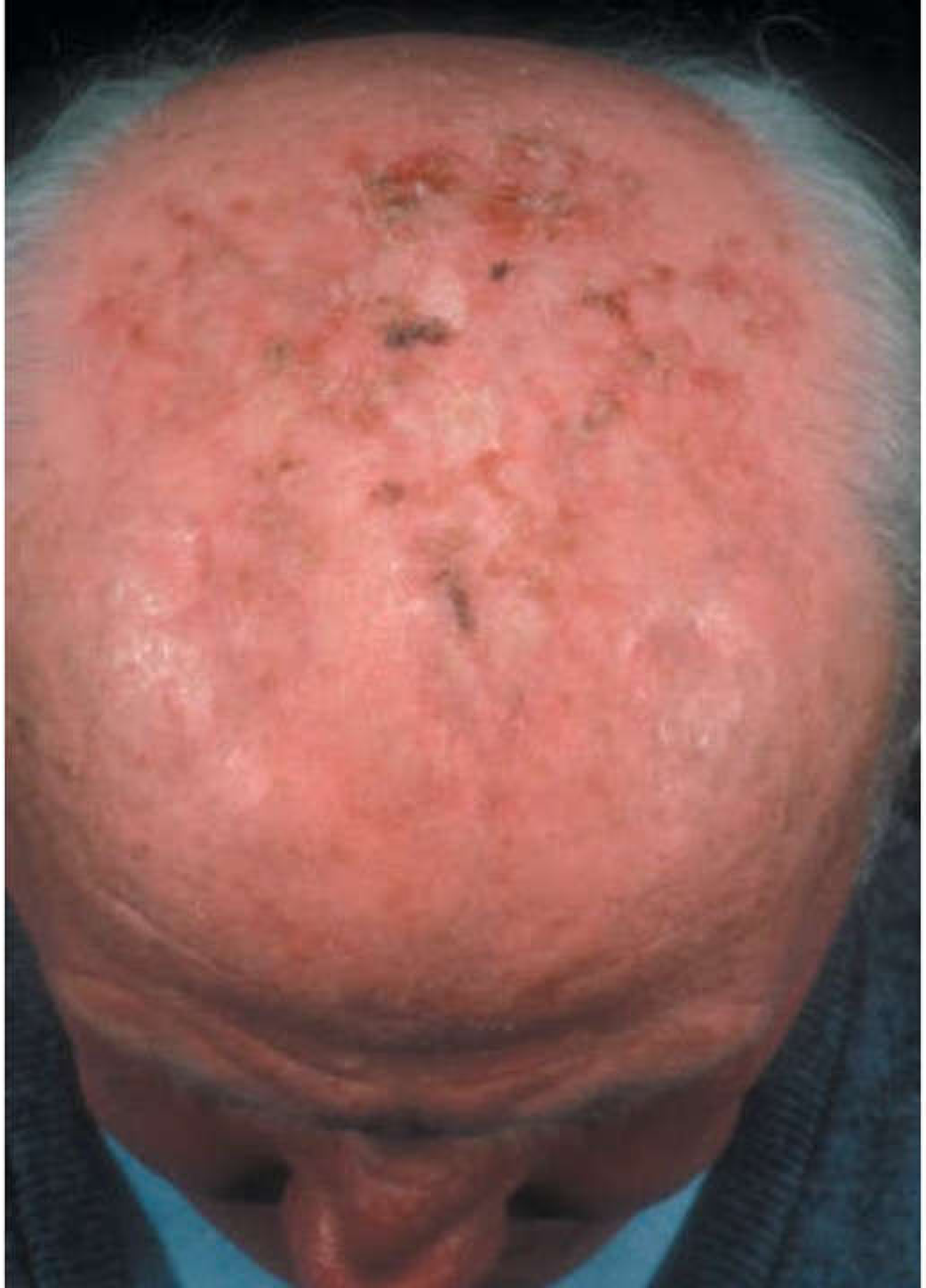
- **5-fluorouracil :** Topical chemotherapy.
- **Chemical peel:** Best known for reversing the signs of photoaging (trichloroacetic acid causing the top skin layers to slough off).
- **Imiquimod :** Topical immunotherapy, it stimulates the immune system to produce interferon to attack cancerous and precancerous cells.

Surgical Procedures

- **Cryosurgery:** The physician applies liquid nitrogen to the AK to freeze the tissue. Later, the lesion and surrounding frozen skin may blister or become crusted and fall off.
- **Curettage and desiccation:** The physician scrapes or shaves off part or all of the lesion, then applies heat or a chemical agent to stop the bleeding and potentially kill any remaining AK cells.
- **Laser surgery:** The physician uses intense light to vaporize AK tissue.

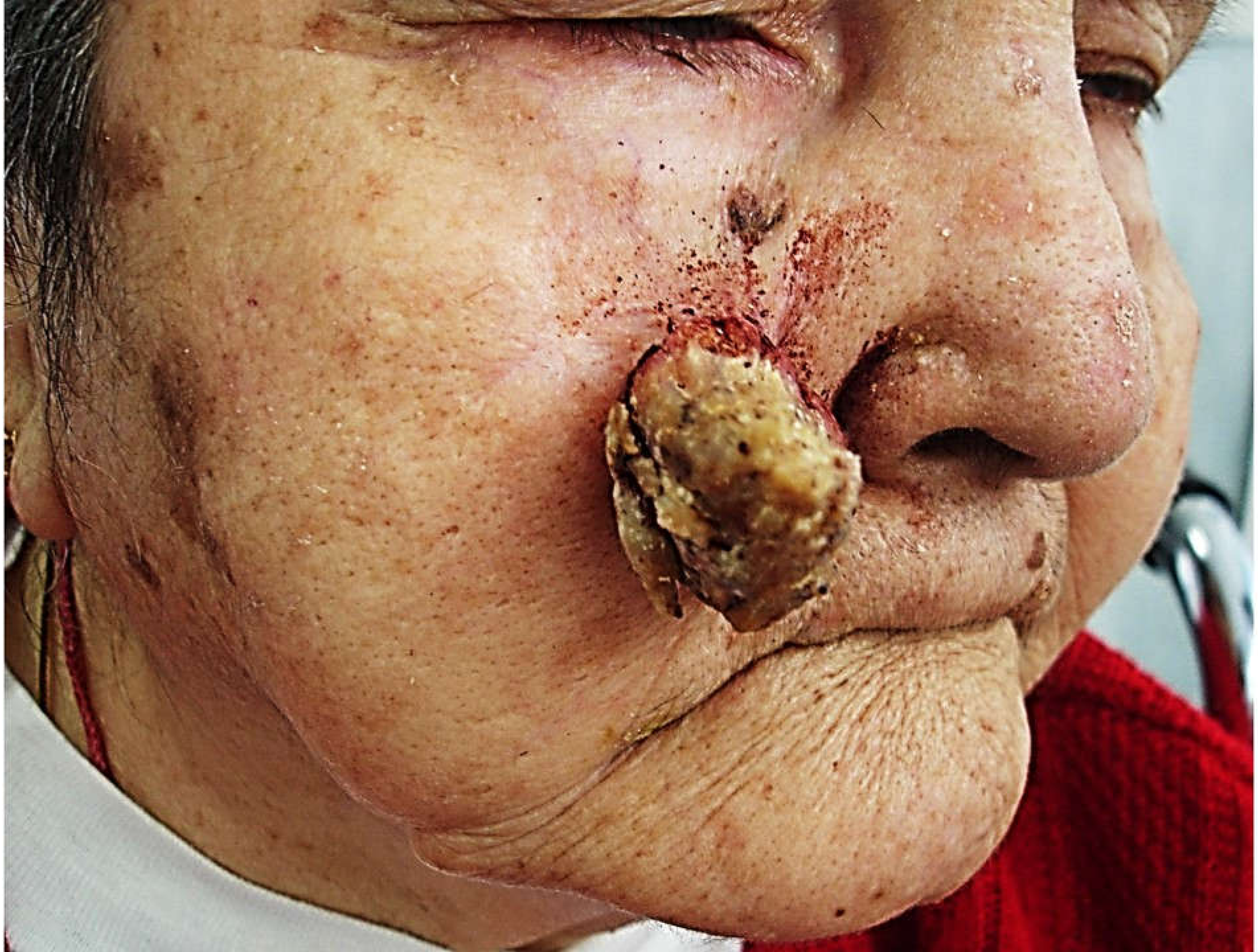
Photodynamic Therapy

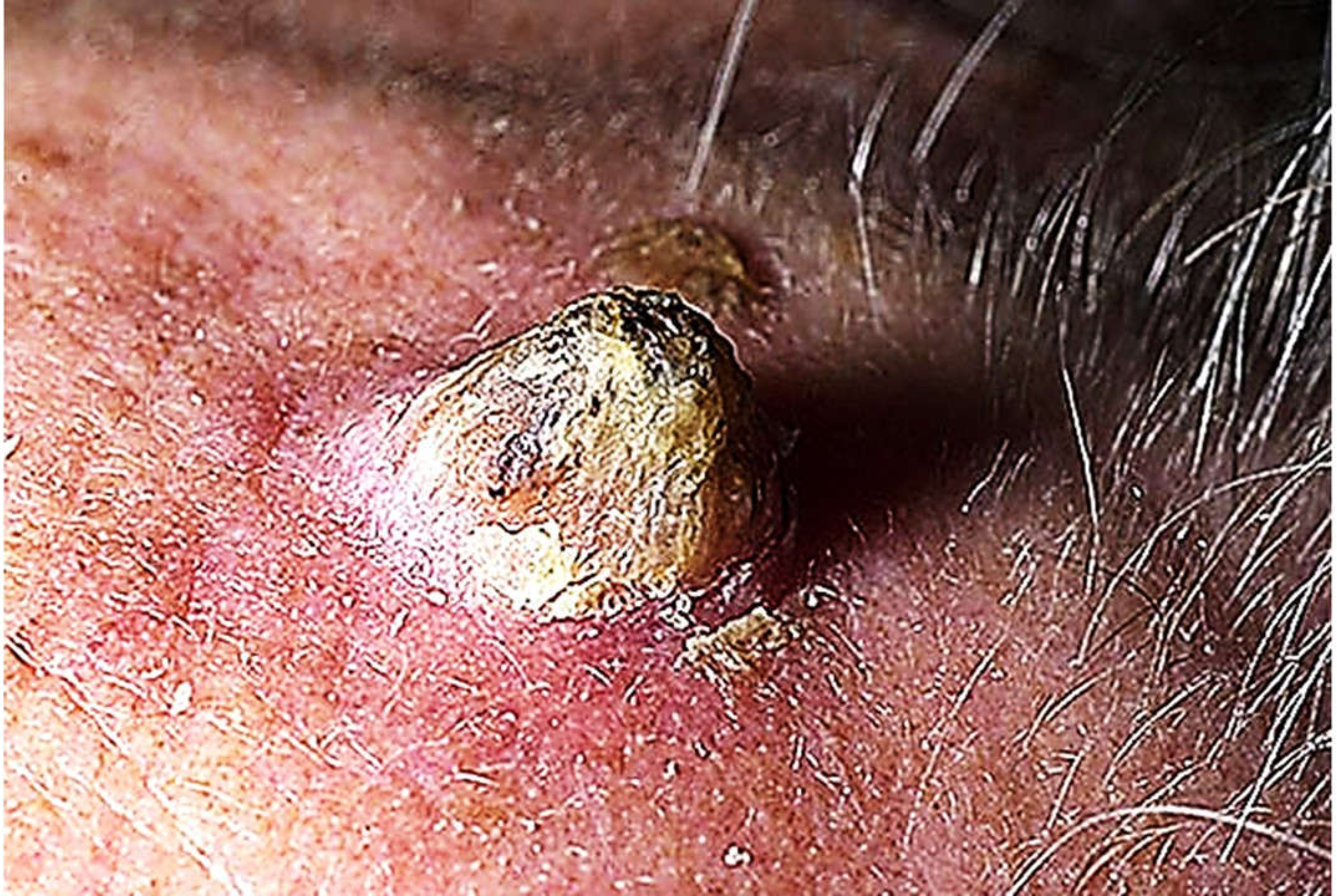
Photodynamic therapy (PDT) is especially useful for widespread lesions on the face and scalp. The physician applies a light-sensitizing topical agent to the lesions, then uses a strong light to activate the topical agent, destroying the AKs while sparing healthy tissue



Cutaneous Horn

- Accumulation of cutaneous keratin higher than its base.
- is a clinical diagnosis referring to a conical projection of cornified material above the surface of the skin that resembles a miniature horn.
- 10 % SCC underlying cause.

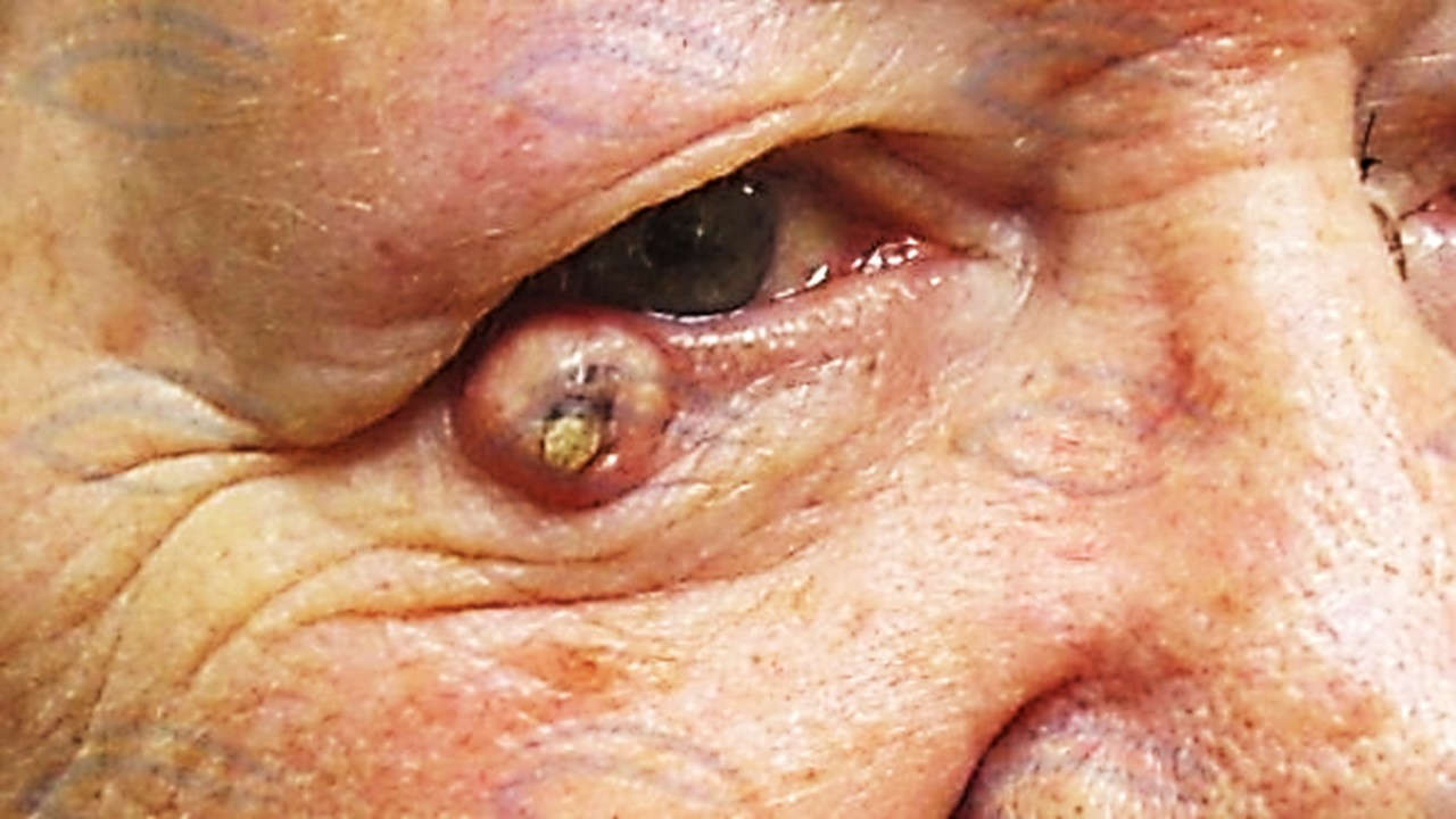




Keratokanthoma

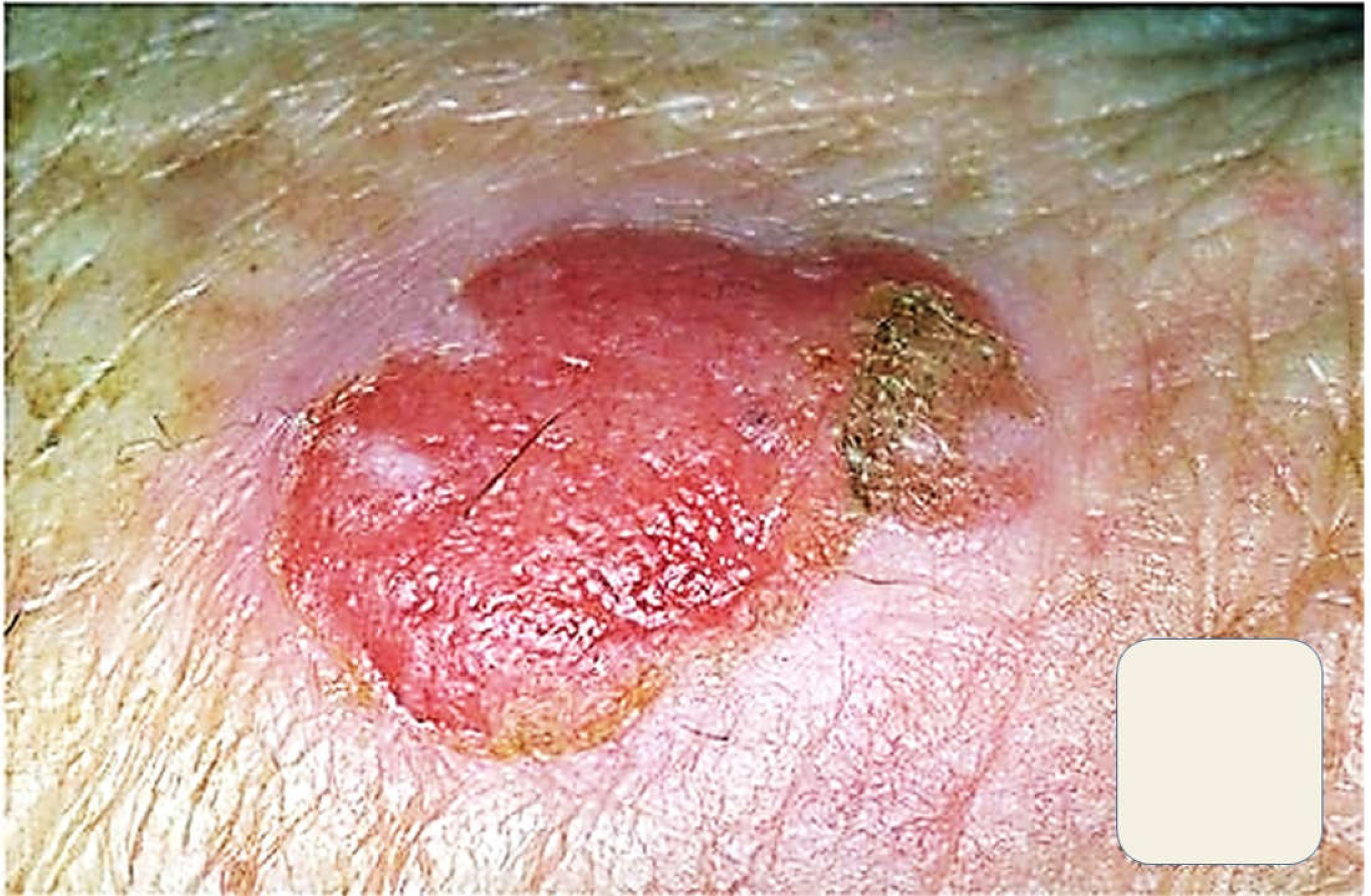
- Is a skin tumor that appears like a small boil. Once it appears, it starts to grow rather rapidly and can reach a significant size within a matter of weeks. Untreated keratoacanthoma is will eventually disappear though they would leave a scar. A keratoacanthoma can take up to 4 to 6 months for complete resolution.

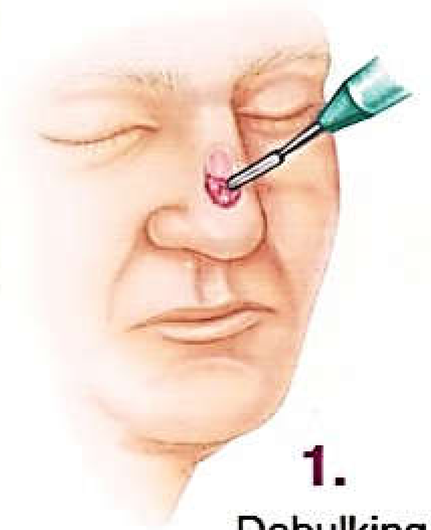
- A skin biopsy is helpful and this will reveal {the} presence of small fragments of keratin which is a part of normal skin tissue.
- Mohs surgery
- Electrodesiccation
- DDX = SCC



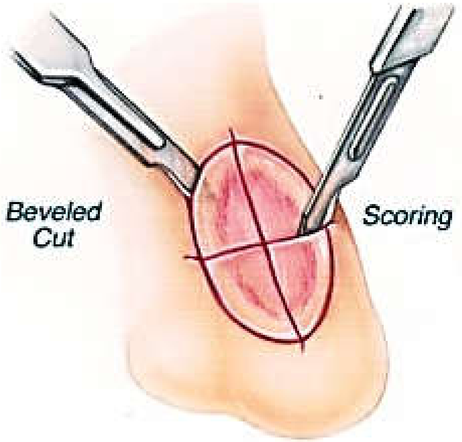
Bown's disease

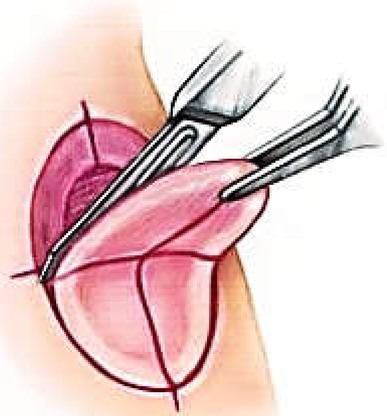
- Slowly enlarged erythematous patch.
- Any where.
- Cause : Solar exposure, HPV and arsenic material.
- It is Ca insitu. To SCC.
- Treatment - 5-fluorouracil : Topical chemotherapy.
  - Imiquimod : Topical immunotherapy.
  - Surgical excision.
  - Mohs' micrographic surgery.



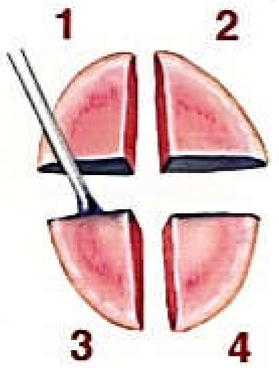


1. Debulking

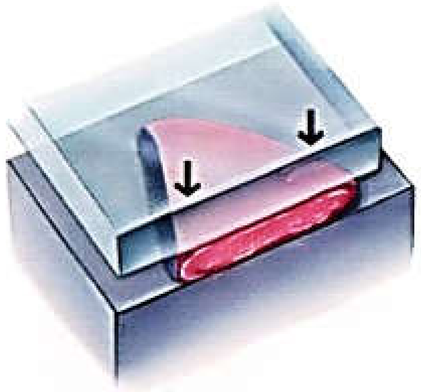




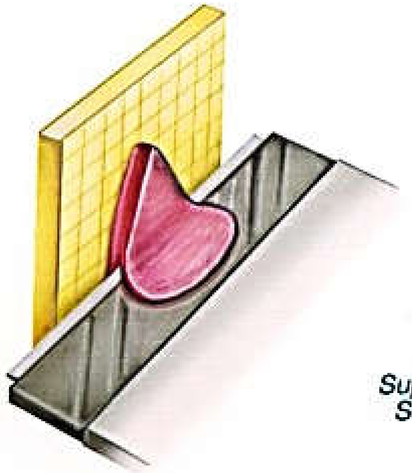
2. Beveled excision & scoring on patient for determining cancer location



3. Numbering & coding of specimen

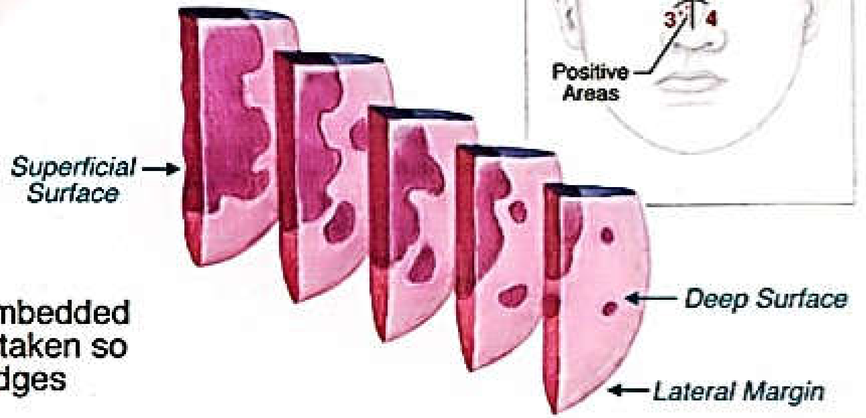


4. Specimen is inverted & underscored and edges fall into the same plane



5. The tissue is then imbedded & frozen. Cuts are taken so that the bottom & edges are labeled at first

6. Positive tumor can be accurately located & its position margin in the surgical map



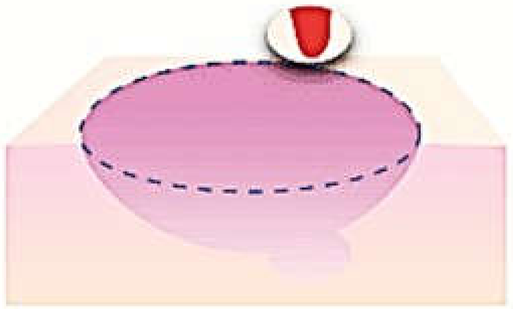
Mohs Surgery

The roots of a skin cancer often extend beyond the visible portion of the visible tumor. If these roots are not completely removed, the skin cancer will recur.

Step 1: Our Mohs surgeon begins the procedure by surgically removing the visible tumor.

Step 2: A layer of skin is removed, divided into sections with each color coded with dyes. Our surgeon then makes reference marks on the skin showing the source of each sections followed by throughly mapping the surgical site.

Step 3: The undersurface and edges of each section of the removed skin are then microscopically examined for evidence of remaining cancer.



Step 4: If cancer cells are found under the microscope, our surgeon marks their location onto the "map" and returns to the patient to remove another layer thin layer of skin from the pin pointed area where the cancer cells remain.

Step 5: The tumor removal process is completed only when there is no longer any evidence of cancer remaining in the surgical site. And, because Mohs surgery only removes the tissue containing the cancer it preserves the skin's healthy tissue.

Malignant Lesions

Basal Cell Carcinoma.

Sequameous Cell Carcinoma

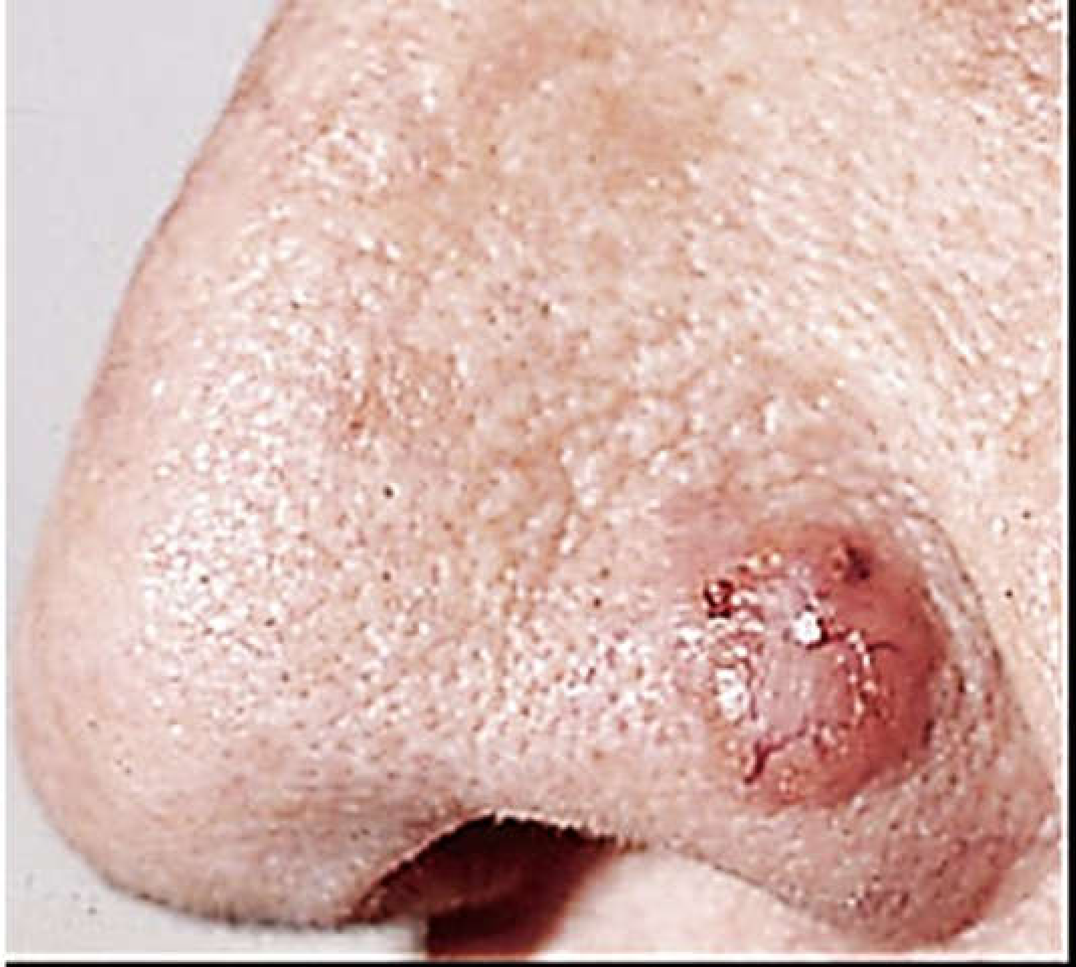
Cutaneous Malignant Melanoma

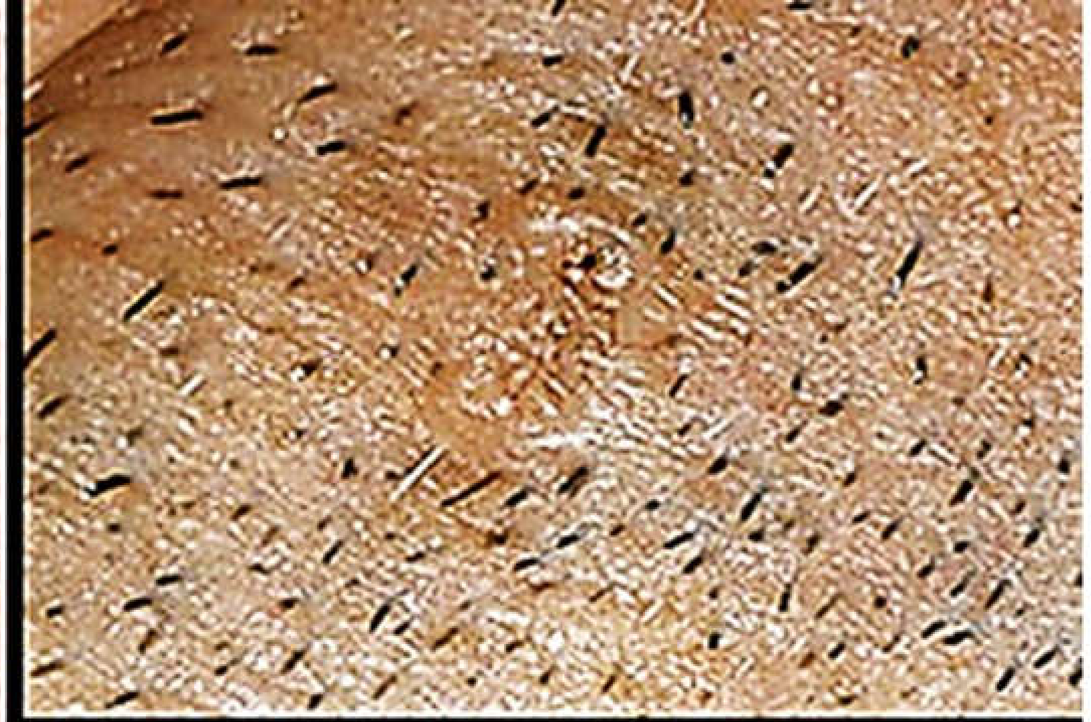
Vascular Lesions (Angiosarcoma, Kaposi Sarcoma).

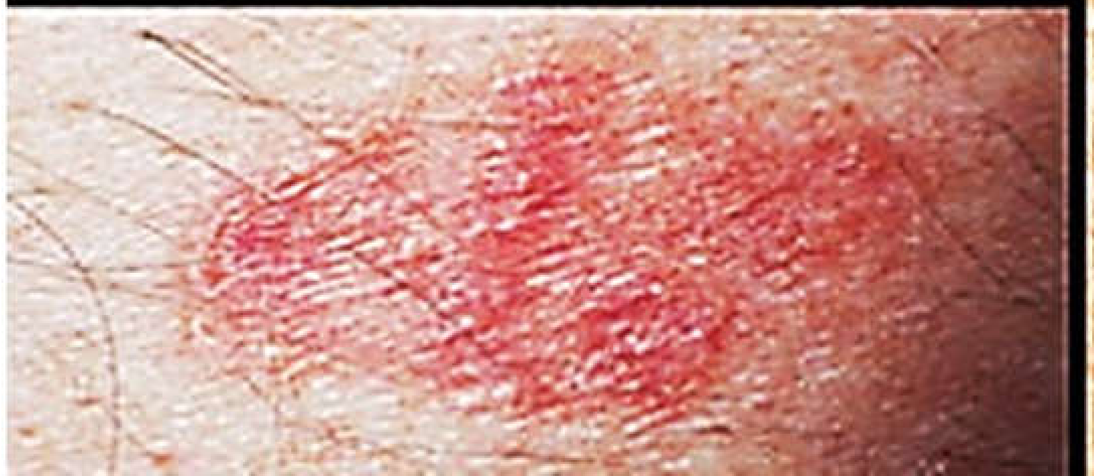
Connective Tissue (Liposarcoma, Fibrosarcoma).

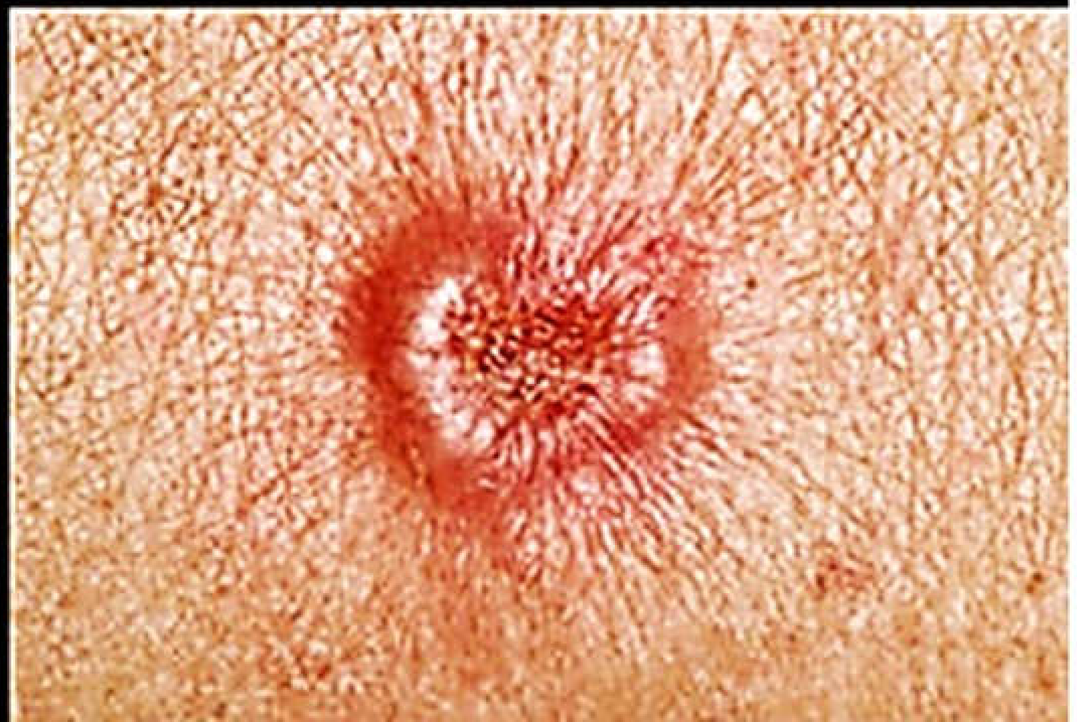
Basal Cell Carcinoma

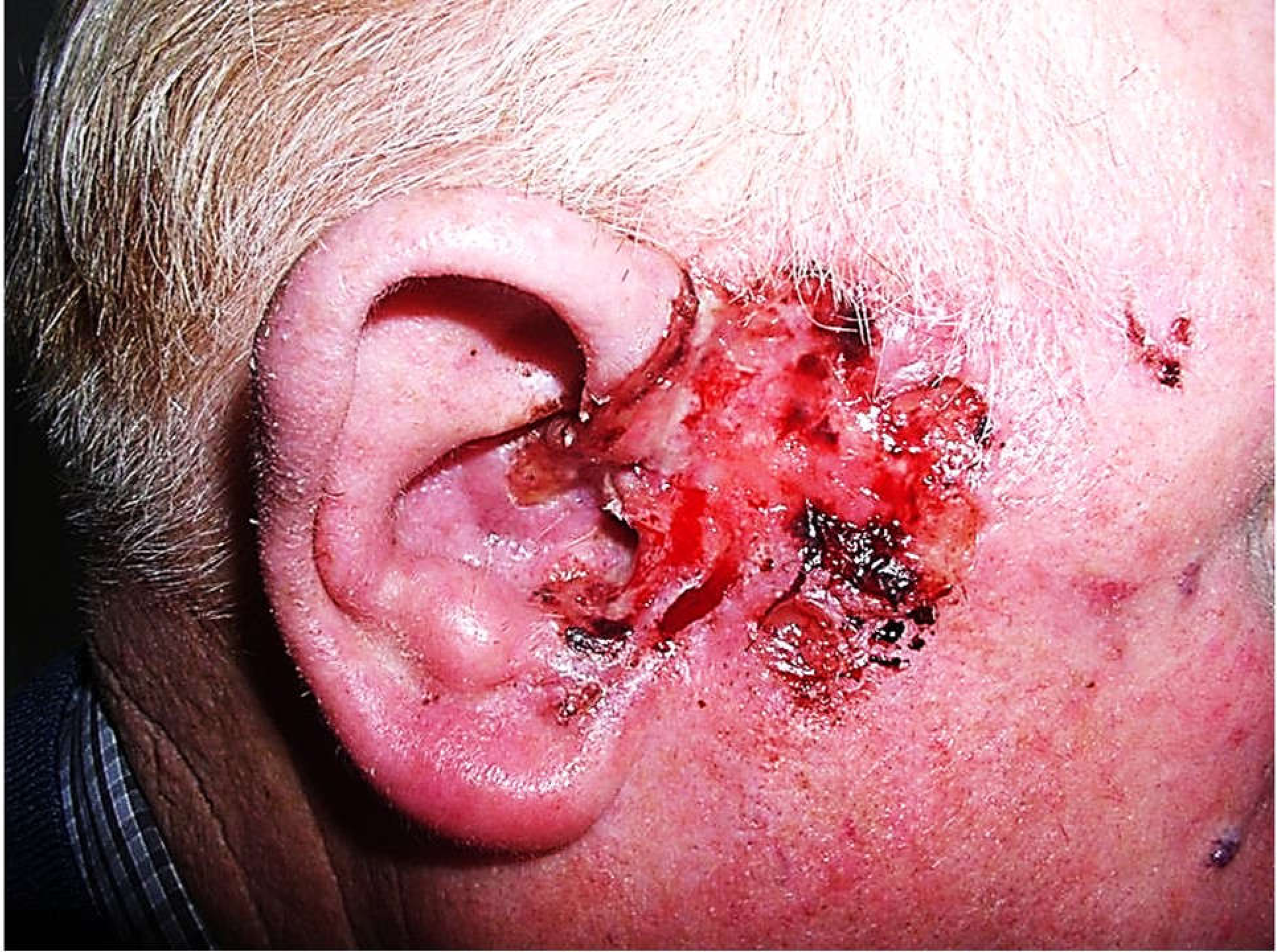
- Slow growing.
- Locally invasive, rarely metastasize.
- Basal epidermis.
- U.V. exposure (initial dose not on duration), Chemicals and ionizing radiation.
- Middle age and elderly.
- Face (above a line extending from lobule of the ear the corner of the mouth).
- White skinned











High risk factor:

- (> 2 cm)
- (specific site (eye, ear & nose).
- Ill defined margin.
- Recurrent after excision.
- In presence of immunosuppressant therapy.

- Radiotherapy.
  5-fluorouracil : Topical chemotherapy.
  Imiquimod : Topical immunotherapy.
  Cryotherapy.

- Surgical margin (2 – 15 mm).
- Mohs' microsurgery.
- Followed by reconstructive surgery.
- Reccurence (incomplete excision).

Sequameous Cell Carcinoma

- BCC : SCC (4 : 1).
- Stratum germinatum (keratine forming cell).
- Elderly.
- Accumulative sun exposure (proportional to the wave length), tobacco .
- Men & white skinned people.
- Associated with chronic inflammation (burn, venous ulcer).
- Histological grading (de-differentiated cells) ratio.
- Staging system (TNM).

Size	Nodes	Mets	Grade
T_1 = <2 cm	N_0 = no regional nodes	M_0 = no mets	G_1 = low grade
T_2 = 2–5 cm	N_1 = regional nodes	M_1 = distant mets	G_2 = moderately differentiated
T_3 > 5 cm			G_3 = high grade or highly anaplastic
T_4 = muscle or bony invasion			

Stage I = T1, N0, M0; stage II = T2–3, N0, M0; stage III = T4, N0, M0 and any T, N1, M0; stage IV = any T, any N1, M1(+).

Prognosis

- Invasion (depth, surface size).
- Grade.
- Site (Lips (recurrence), Extremities > trunk).
- Cause : Chronicity increases metastatic potentiality..
- Immunosuppressant .
- Local spread : Needs wider clearance.
- 2% Metastasis, 20 % local reccurence.

Treatment

- Surgical excision with free clearance margin (4 mm < 2 cm, 1 cm > 2 cm).
- 95 % local recurrence and distant M (Not need for fellow up beyond this period).

Cutaneous Malignant Melanoma

- Skin, mucosa, retina & leptomeninges.
- UV exposure.
- Genetically determined : Xeroderma pigmentosum (DNA polymerase repairs the missing sequence, and ligase "seals" the transaction. This process is known as nucleotide excision repair (Absent).
- Arises in Junctional and compound naevus.

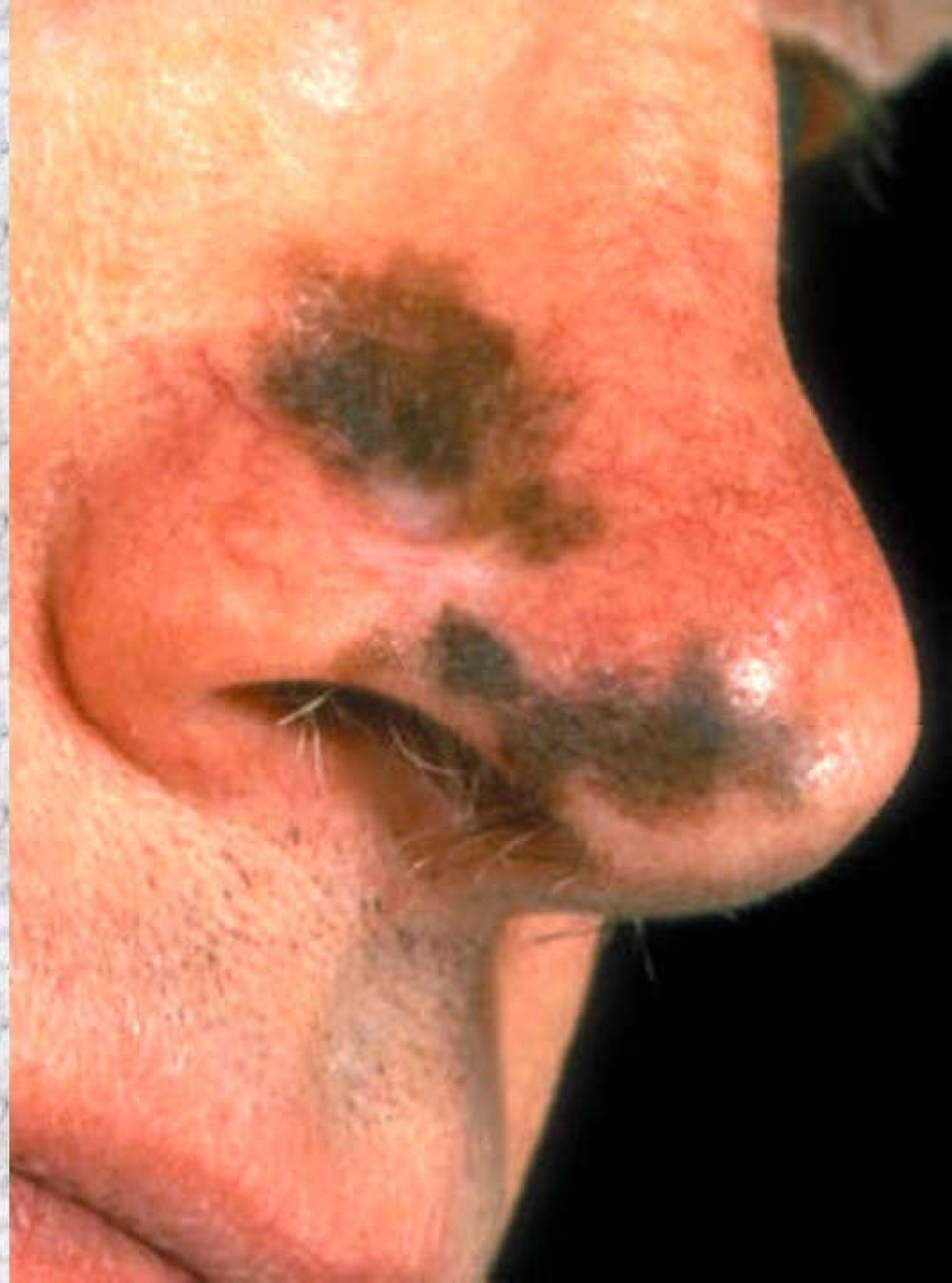
Summary box 42.7

Macroscopic features in naevi suggestive of malignant melanoma

- Change in size – any adult naevus >6 mm is suspect (for reference a lead pencil diameter is 7 mm) and anything changing to >10 mm is more likely to be malignant than benign
- Shape
- Colour
- Thickness (elevation/nodularity or ulceration)
- Satellite lesions (pigment spreading into surrounding area)
- Tingling/itching/serosanguinous discharge (usually late signs)
- Blood supply: melanomas >1 mm thick have a blood supply which can be found with a hand-held Doppler, so 'Doppler positive' pigmented lesions should be excised

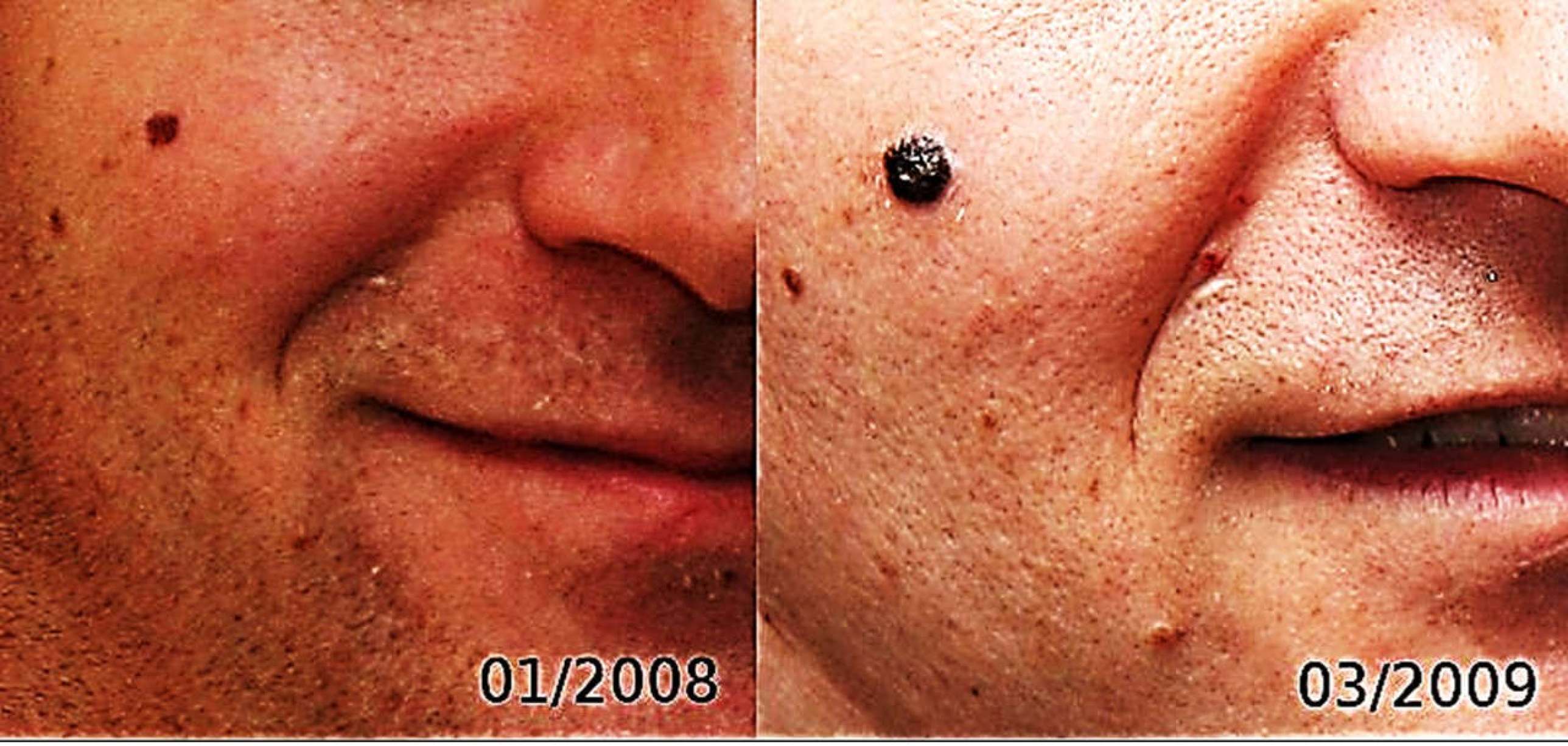
Superficial Malignant Melanoma

- 70 % .
- Arising in pre-existent naevus.
- Insidious.
- Dark pigmentation in junctional naevus, nodularity heralds vertical growth.
- May presented as subungual melanoma.



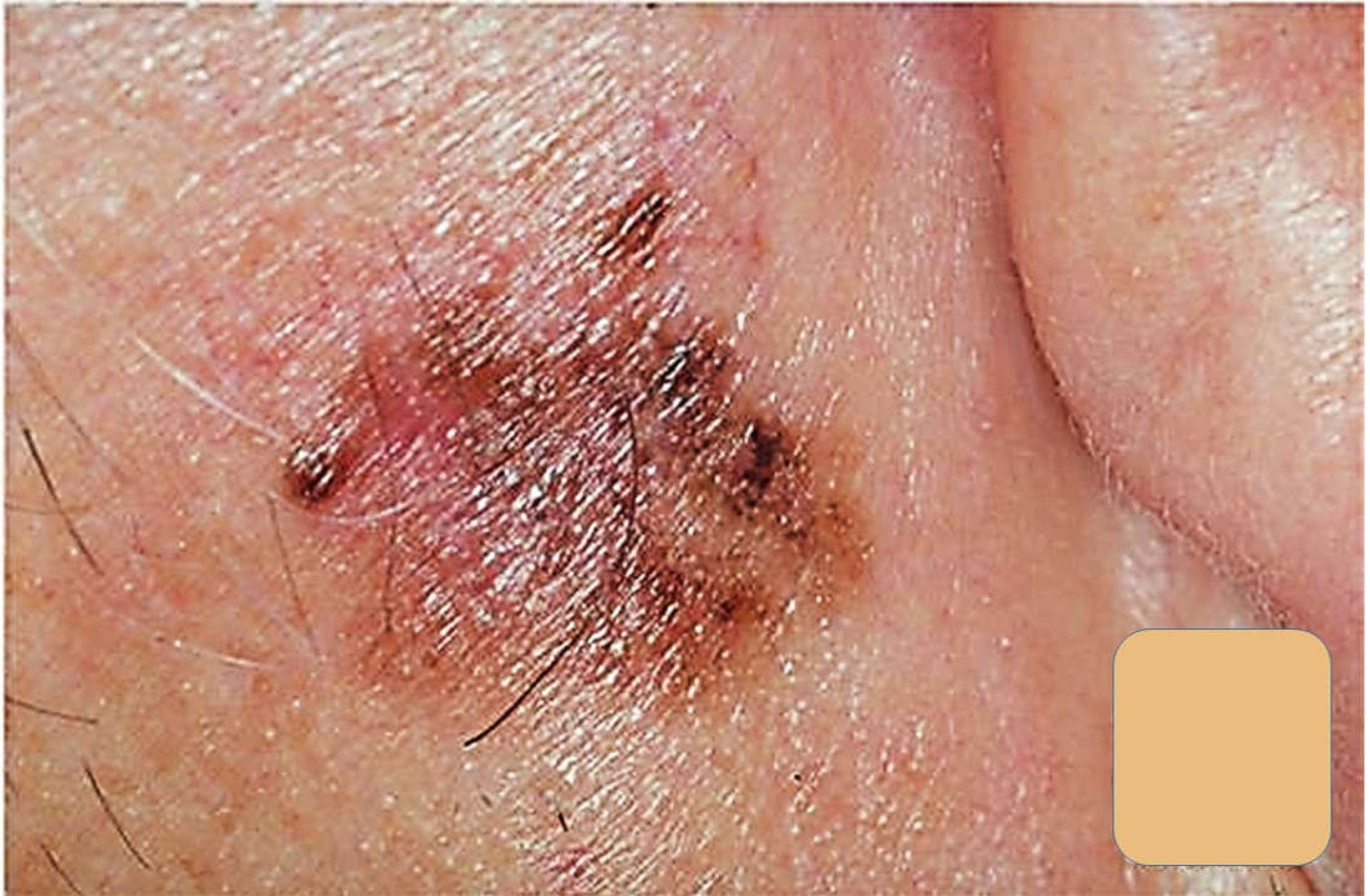
Nodular Melanoma

- 15 %.
- Aggressive > SSM.
- Middle age, male > female.
- Usually in the Trunk, head & neck.
- It appears as a blue / dark papule, 1-2 cm, and tends to grow more rapidly in thickness than in diameter (lack of horizontal growth) with sharp demarcation.
- It may appear in a spot where a lesion did not previously exist .


01/2008
03/2009

Lentigo Maligna Melanoma

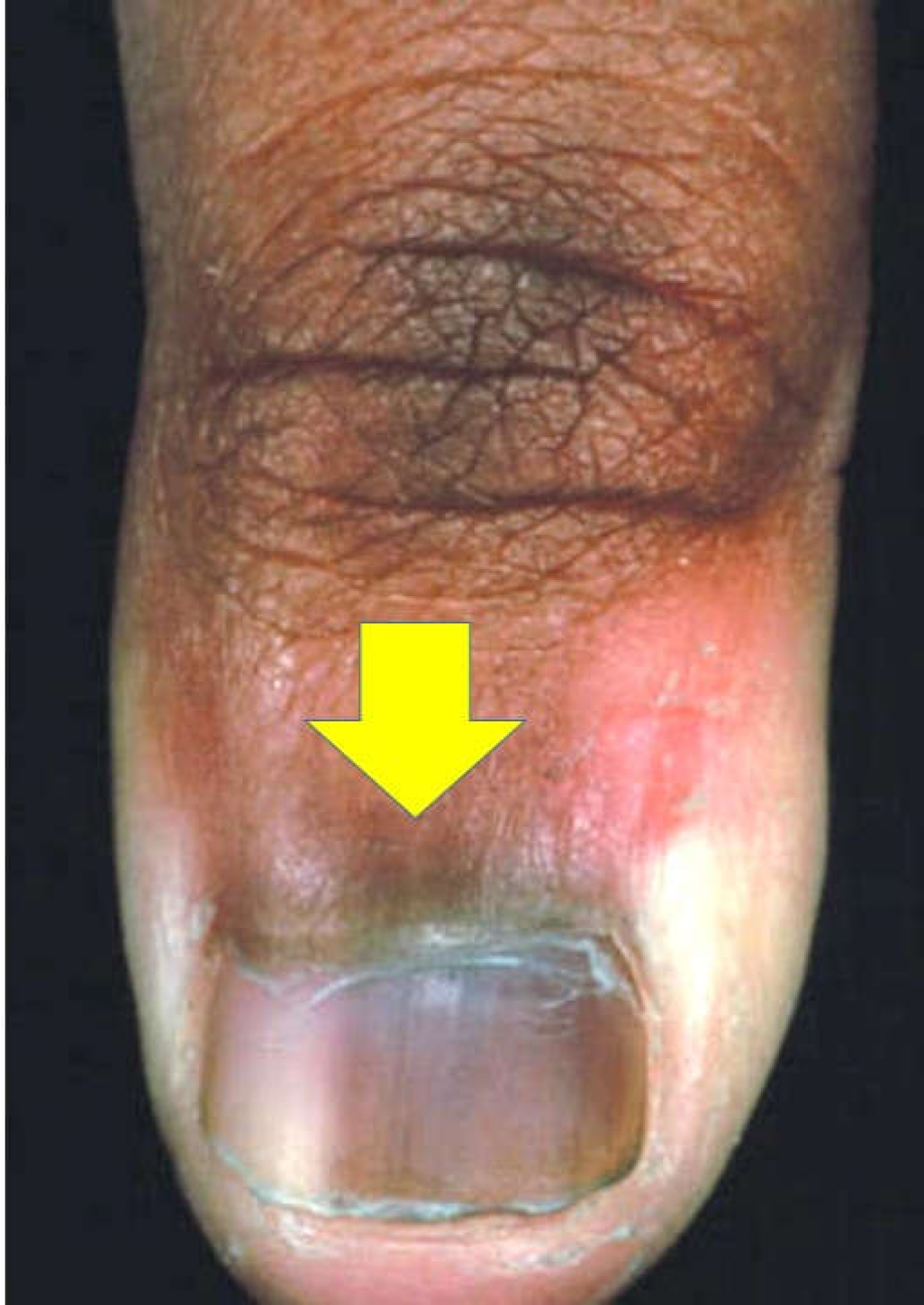
- 5 – 10 %
- Slow growing macule.
- Is the non-invasive skin growth that some pathologists consider to be a melanoma-in-situ.
- Face, hands & trunk in elderly.
- Prolong and intense sun exposure.
- Less metastatic potentiality (long vertical growth phase).



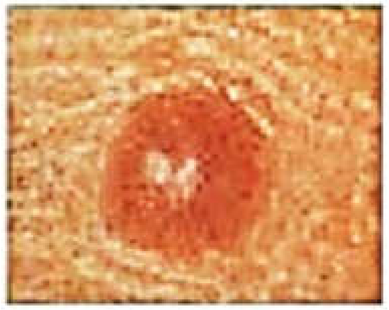
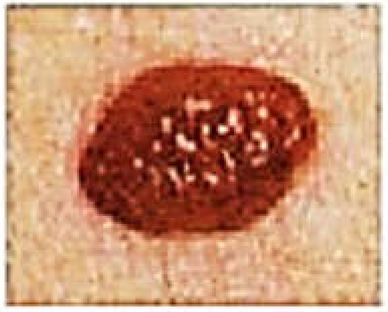
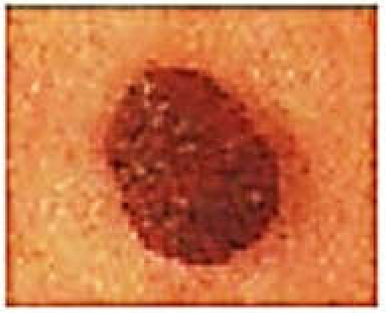
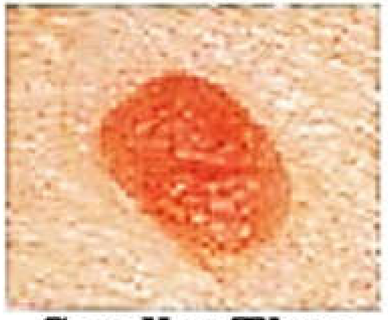
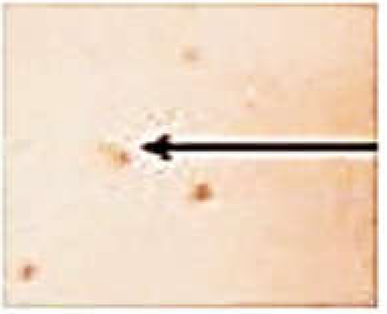
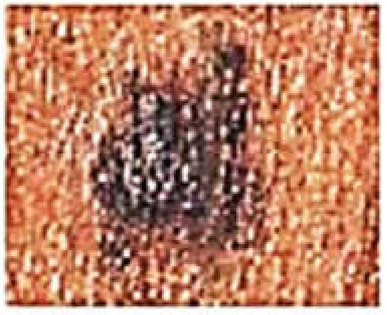
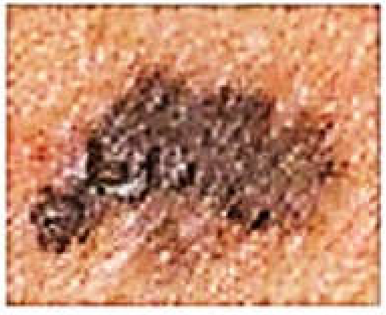
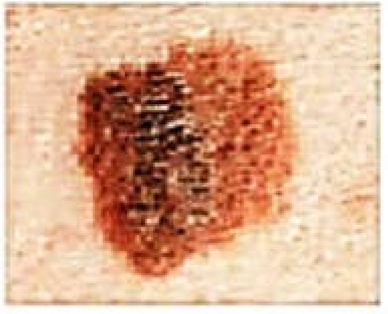
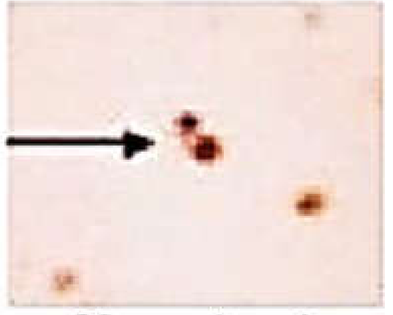
Acral Lentigious Melanoma

- 2-8 %
- Sole & palm.
- Less in white skinned people.
- 25 % are amelanotic, and may mimic fungal infection and pyogenic granuloma.
- May presented as subungual melanoma.
- It has a poorer prognosis

Hutchinson's nail sign is an important clinical clue to subungual melanoma and is characterized by extension of brown or black pigment from the nail bed, matrix, and nail plate to the adjacent cuticle and proximal or lateral nail folds.



The ABCDEs of Detecting Melanoma

	A Asymmetry	B Border	C Color	D Diameter	E Evolving
NORMAL	 Symmetrical	 Borders Are Even	 One Color	 Smaller Than 1/4 Inch	 Ordinary Mole
MELANOMA	 Asymmetrical	 Borders Are Uneven	 Multiple Colors	 Larger Than 1/4 Inch	 Changing in Size, Shape and Color

Management

- Hx, Ex (primary lesion and metastatic spread).
- Bx (excisional Bx with 2-5 mm clear margin and cuff of subdermal fat, or incisional Bx.(Breslow thickness)
- Regional L.N. Bx (sentinel LN).
- Staging system(TNM)
- Surgical excision with free margin (< 1mm -1 cm, if deeper – 2cm)
- L.N clearance.
- Adjuvant therapy (not proved yet, but trial of vaccine and interferon)

Vascular Lesions

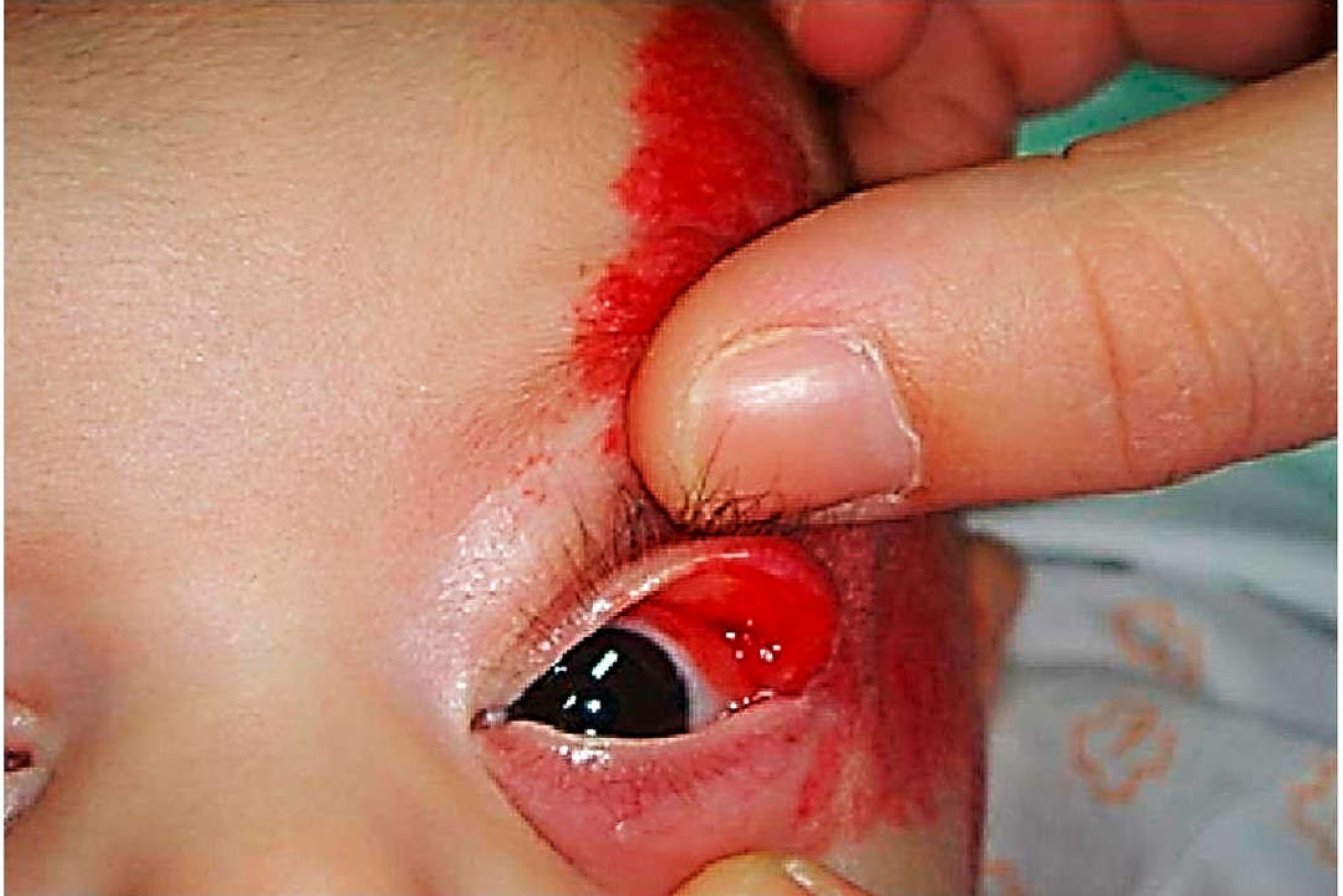
- Congenital (Hemangioma and Vascular Malformation).
- Vascular Birth Mark (Capillary hemangioma (Strawberry naevus)
  (Capillary Vascular Malformation) (Port Wine Stains).
- Acquired (Campbell de Morgan Spot)
  (Spider naevus).
  (Pyogenic Granuloma)
  (Glomus Tumour)
  (Angiosarcoma)
  (Kaposi Sarcoma)

Hemangioma

- Benign endothelial tumour.
- Congenital.
- If large enough it would trap platelets leading to 2nd thrombocytopenia purpura (Kasabach – Merritt syndrome).

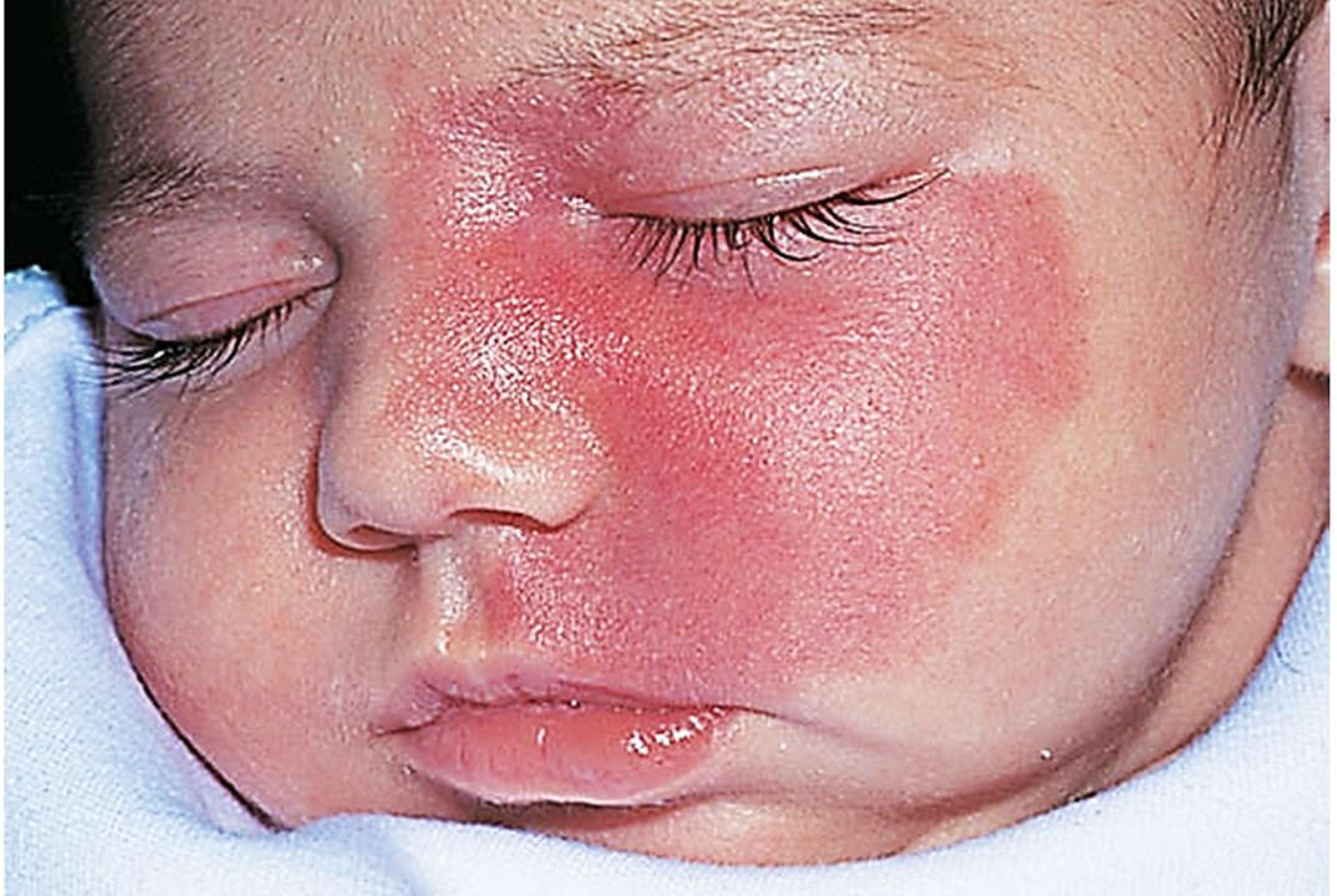
Capillary Hemangioma (Strawberry naevus)

- Common birth mark
- 80 % resolved (Intravascular thrombosis and fibrosis).
- It appears as a raised, red, lumpy area of flesh anywhere on the body.
- Oral propranolol appears to be the most effective treatment for reducing the size of capillary hemangiomas in children .
- Or intralesionlal corticosteroid



Capillary Vascular Malformation

- Port wine stain, commonly called a fire mark.
- Less common.
- Birth mark.
- Defective maturation of cutaneous sympathetic innervation during embryogenesis leading to localized intradermal capillary vasodilatation.
- May be present in Sturge–Weber syndrome.
- Pulsed dye laser may be able to destroy the capillaries without significant damage to the overlying skin.
- The use of topical rapamycin as an adjunct to pulsed dye laser may improve results.



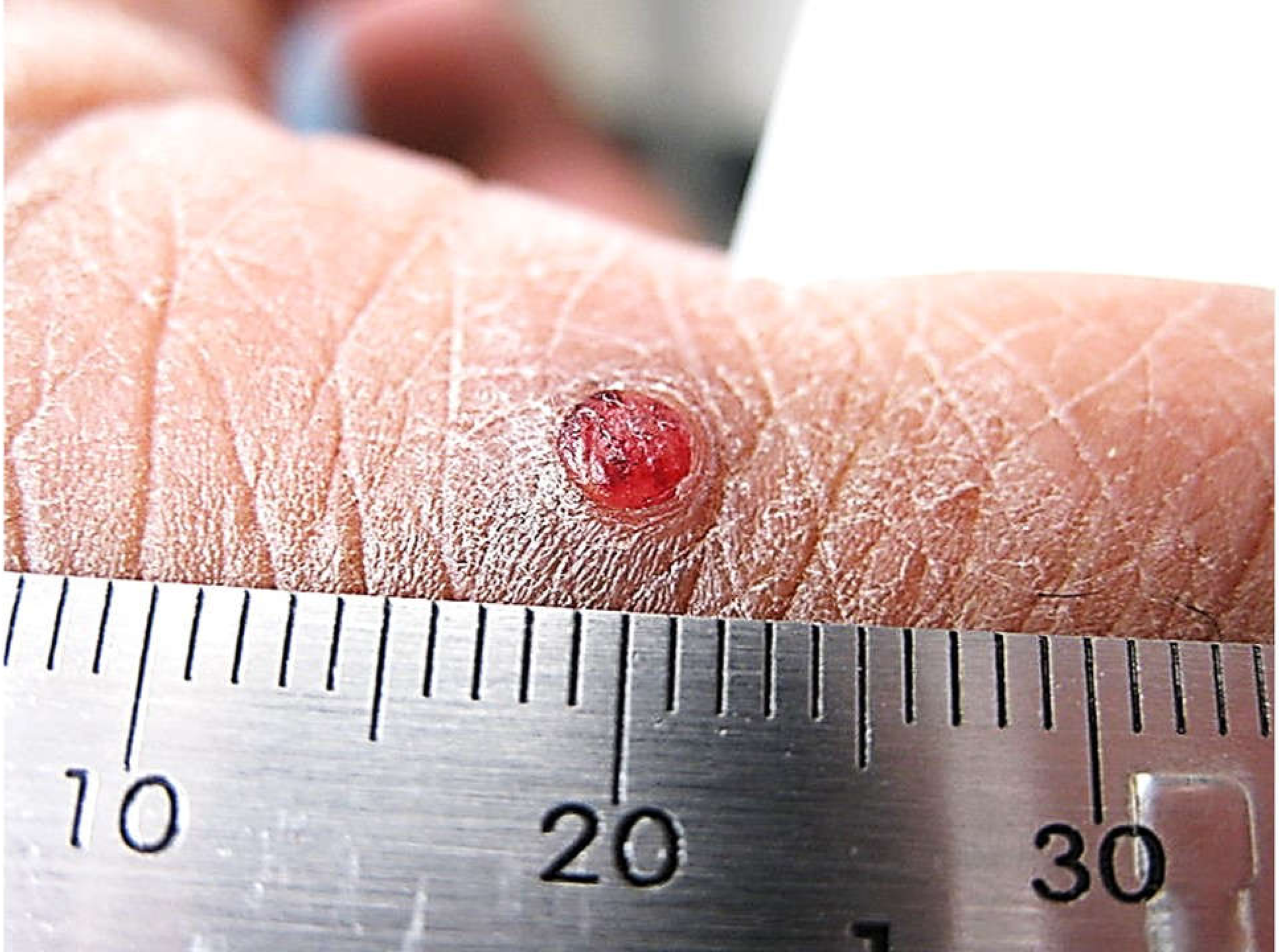
Acquired

Pyogenic granuloma

It may mimic hemangioma histologically.

A soft red nodular lesion showing ulceration with tendency for bleeding after a trivial trauma.

Excision wit minimal margin or electrodesiccation.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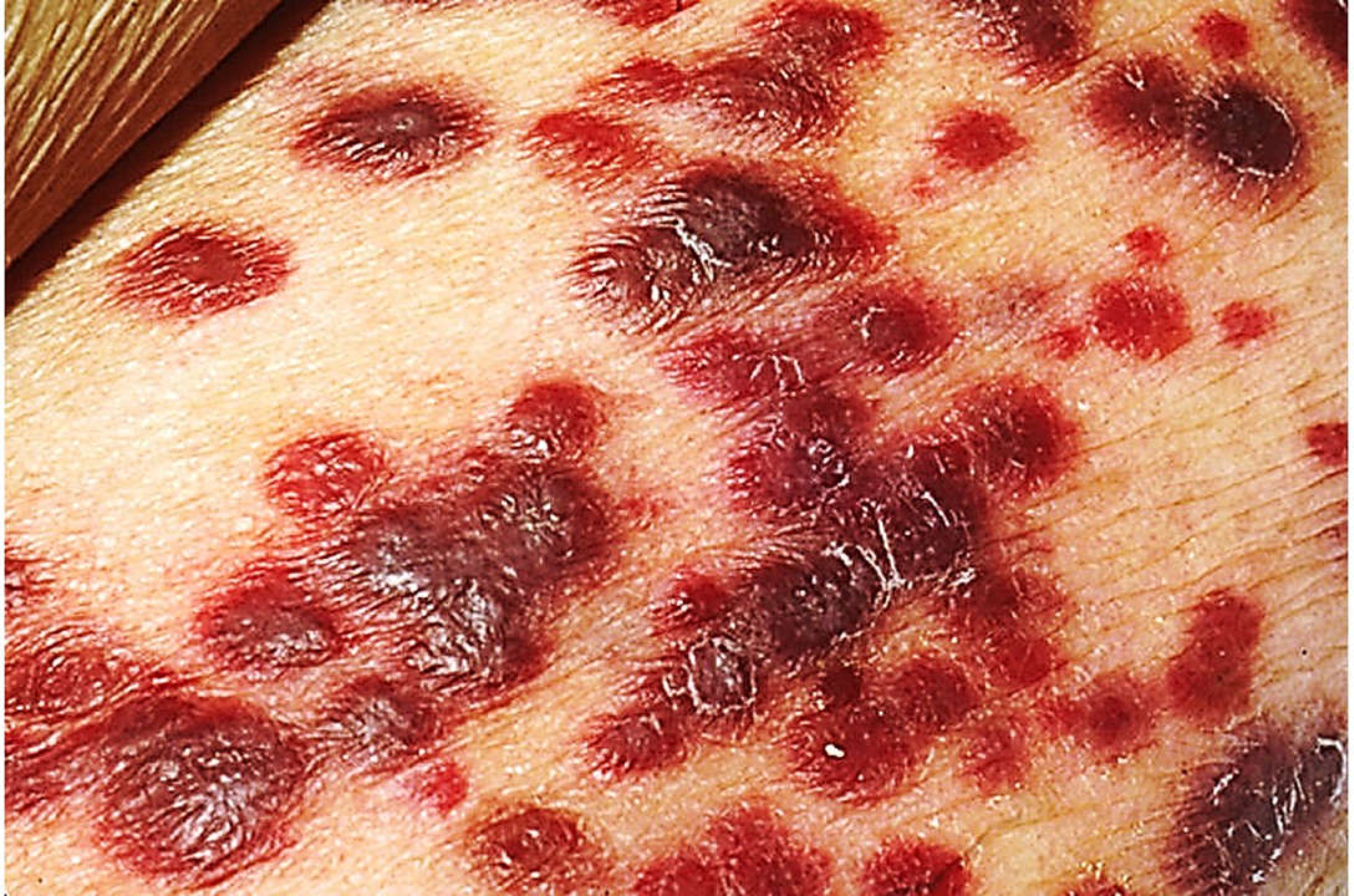
30

Kaposi's Sarcoma

- A malignant proliferative tumor of vascular endothileal cels.
- Immunocompromised patient & HIV.
- Linked with HPV 8.
- Red brown indurated plaque, that becomes nodular and ulcerates.
- Treatment : radiotherapy, cryosurgery, interferon alfa and Paclitaxel (ChTh)



Cutaneous Manifstation of Generalized Diseases

- Pyoderma Gangrenosum.
- Ecchymosis (Thrombocytopenia).
- Henoch-Schönlein purpura (Porpheria).

Pyoderma Gangrenosum

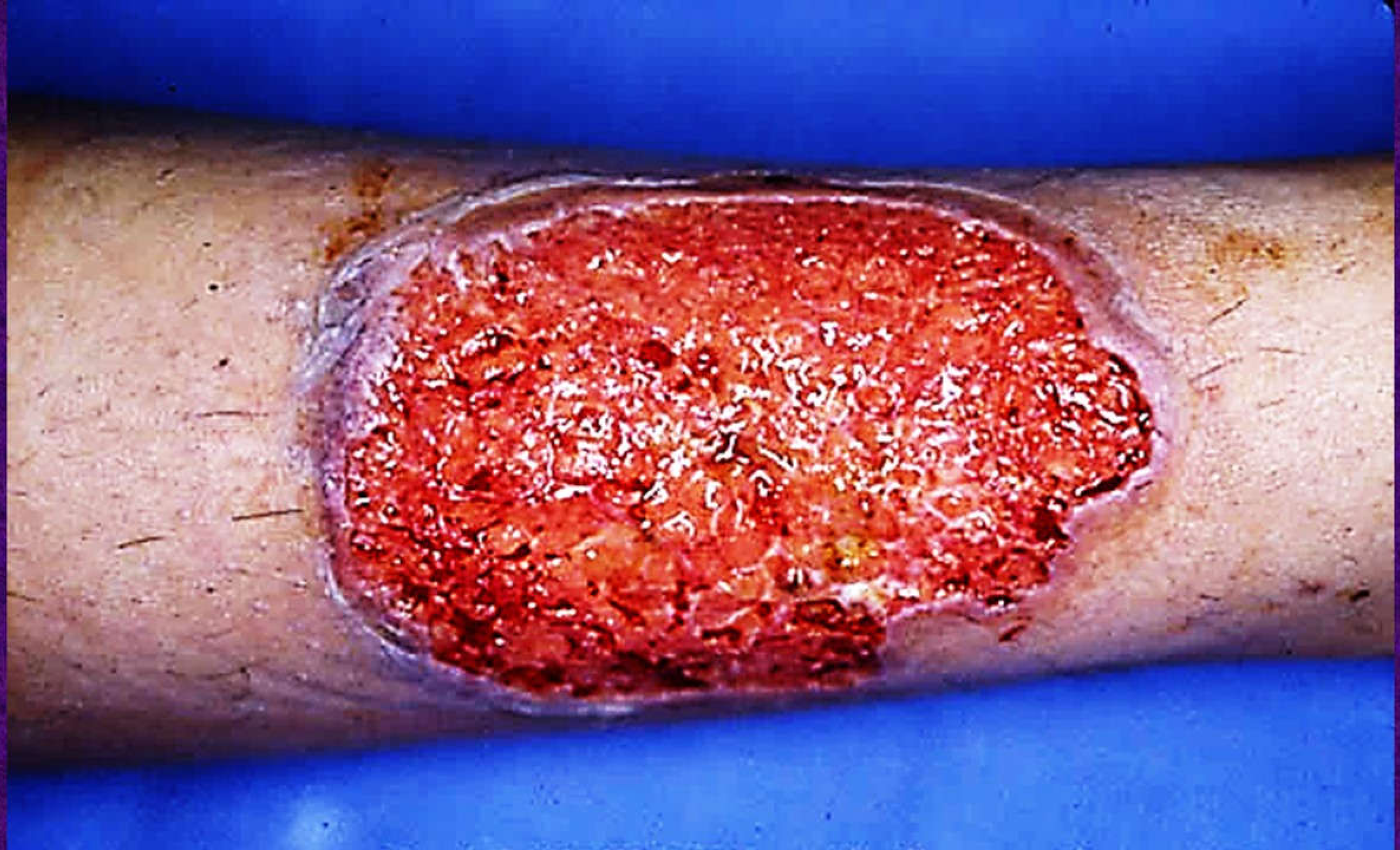
- The disease is thought to be due to immune system dysfunction, and particularly improper functioning of neutrophils
- Cutaneous ulceration with purple undermined edges.
- Associated with IBD (ulcerative colitis, rheumatoid arthritis), RhAr, HL and multiple myeloma .
- One hallmark of pyoderma gangrenosum is pathergy, which is the appearance of new lesions at sites of trauma (*Pathergy*).
- There are two main types:
  - The 'typical' ulcerative form, which occurs in the legs
  - an 'atypical' form that is more superficial and occurs in the hands and other parts of the body

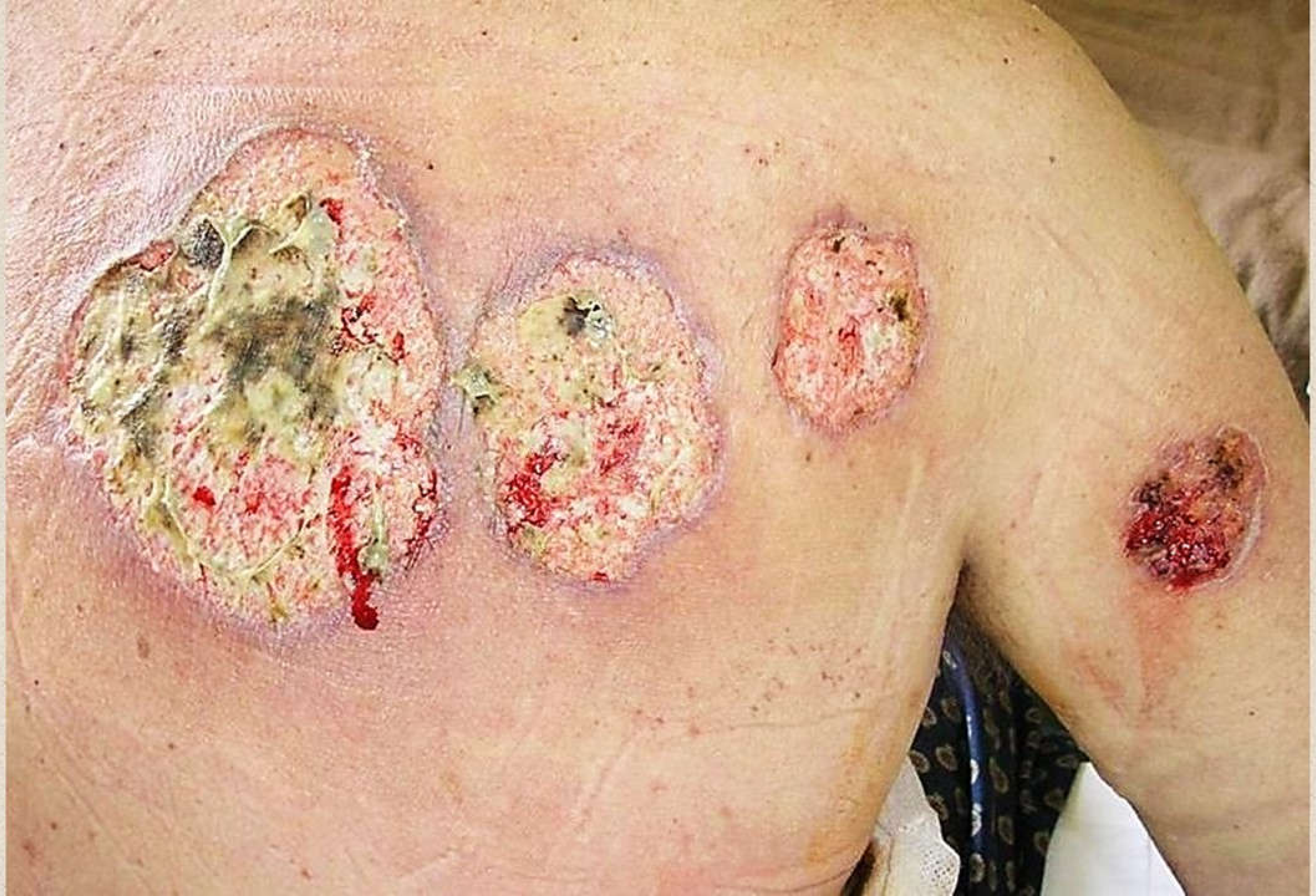
•Diagnosis

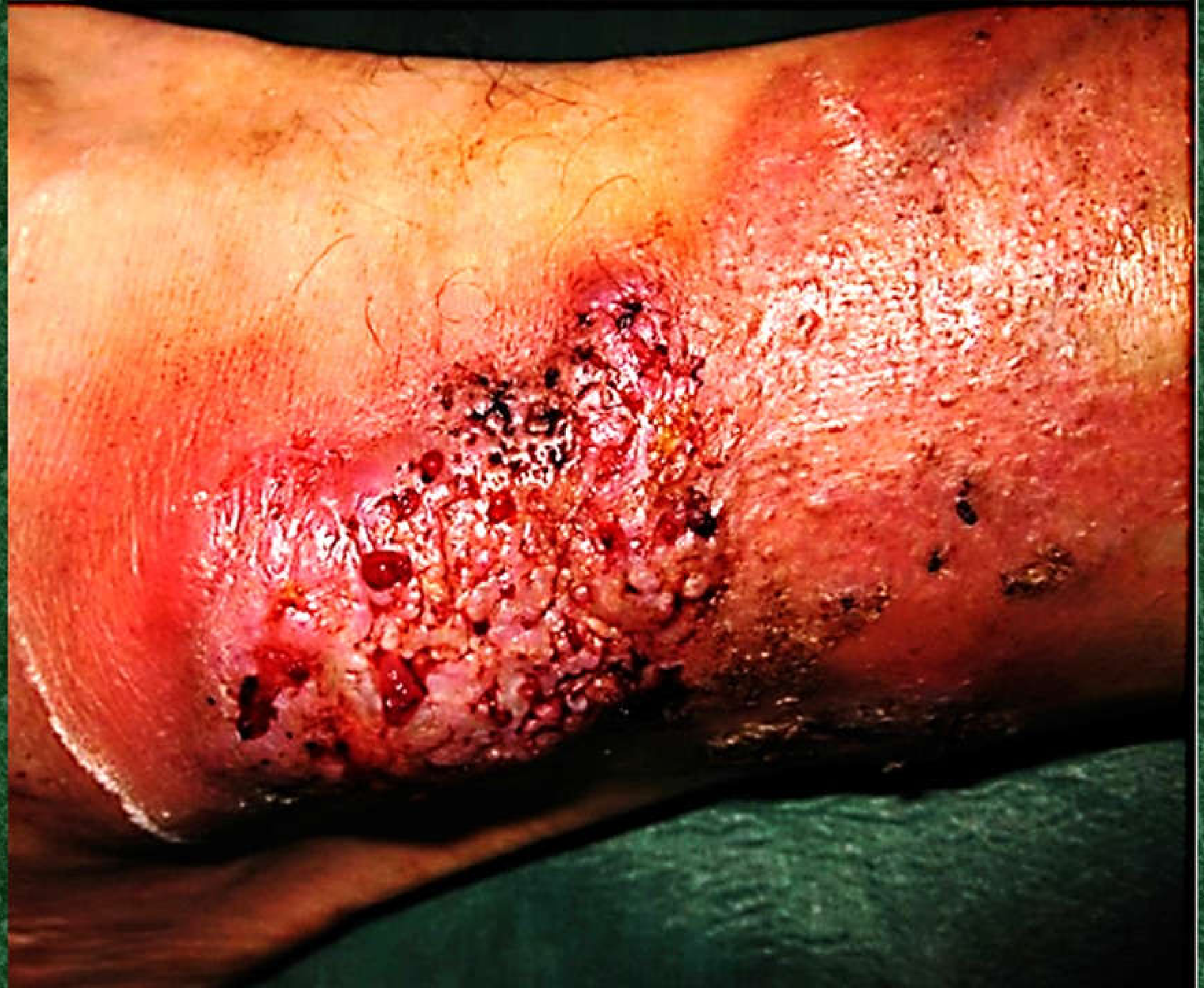
Diagnosis is clinical and is a diagnosis of exclusion after other causes of ulceration have been ruled out. Expansion of ulceration after surgical debridement strongly suggests pyoderma gangrenosum. Biopsies of lesions are not often diagnostic but may be supportive; 40% of biopsies from a leading edge show vasculitis with neutrophils and fibrin in superficial vessels. Patients who have bullous (atypical) pyoderma gangrenosum should be monitored with periodic clinical assessment and CBC for development of a hematologic disorder.

Treatment

- ***Wound care*:** Wound healing can be promoted with wound care that includes moisture-retaining occlusive dressings for less exudative plaques and absorptive dressings for highly exudative plaques. Wet-to-dry dressings should be avoided.
- ***Corticosteroids (Topical / Systemic)***.
- ***TNF-α inhibitors***
- ***Immunosuppressants***.
- ***Avoidance*** of surgical debridement, because of the risk of wound extension.







Wounds

- Congenital (Spina bifida).
- Acquired (Pressure Sore)

  Surgical Wounds (Traumatic and Surgical Incision)

تم بحمد الله

لاتحسد أحدا بنعمة فأنت لاتعلم ماذا أخذ الله منه..
ولاتحزن بمصيبة فأنت لاتعلم ماذا سيعطيك الله عليها

{إنما يوفى الصابرون أجرهم بغير حساب}