ACNE AND ACNEIFORM ERUPTIONS

- **Content of the lecture**
- Acne Vulgaris
- Rosacea
- Hidradenitis Supprativa
- Perioral Dermatitis

PRE LECTURE KNOWLEDGE

- Where is the site of pathology in acne?
- What are the primary lesions in acne?
- What are the aggravating factors of acne?

ACNE AND ACNEIFORM ERUPTIONS

Acne Vulgaris

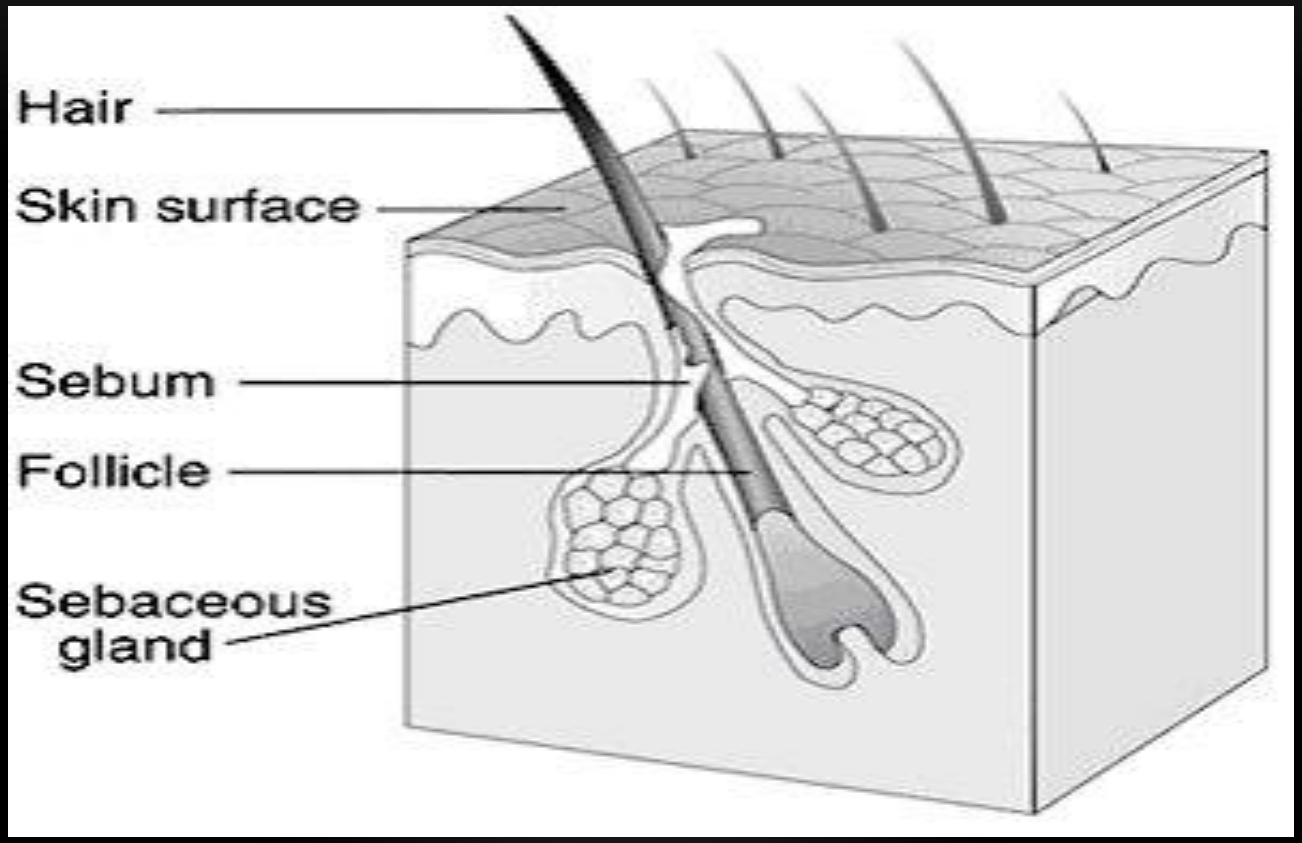
- Multifactorial disease of pilosebaceous unit
- Affects both males and females
- The most common dermatological disease.
- Mostly prevalent between 12-24 yrs.
- Affects 8% between 25-34 and 4% between 35-44.

ACNE VULGARIS

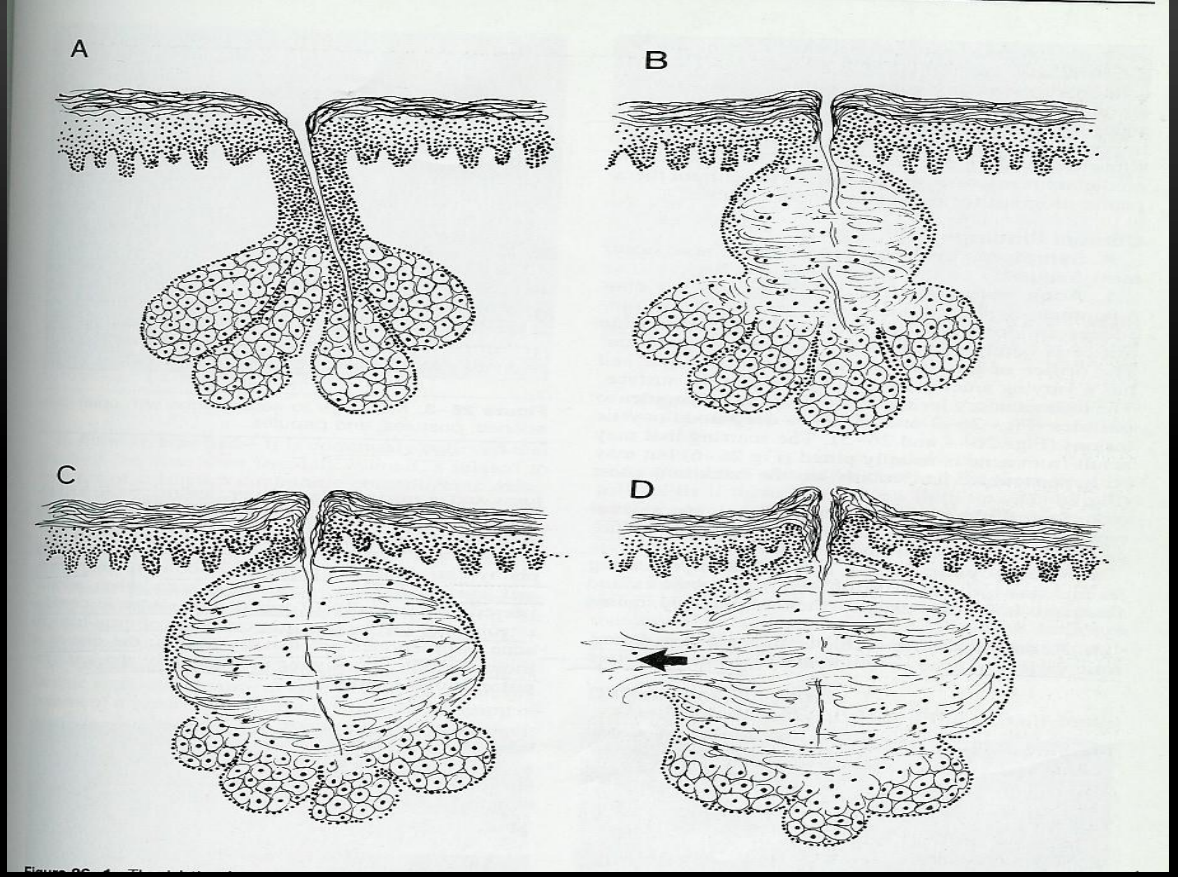
Pathogenesis:

- Increased sebum secretion (Seborrhoea)
- Ductal cornification (micro-comedo)
- Ductal colonization with propioni bacterium acnes
- Inflammation

ACNE VULGARIS



Pilosebaceous unit



A =Normal follicle, B=Obstruction and dilatation , C= Colonization , D Rupture

CLINICAL FEATURES

- Acne lesions are divided into:

Inflammatory (papules, pustules, nodules, cyst).

Non inflammatory (open, closed comedones).

- The comedones are the pathognomic lesion (closed and open comedons).
- Seborrhea.
- Post inflammatory hyper pigmentation .
- Scarring (small pits, deep furrow, Keloids).

CLINICAL FEATURES

Lesions predominate in sebaceous gland rich regions (face, upper back, chest & upper arms.)

The severity of acne ranges from mild, moderate , severe according to the predominant lesion.

- Comedonal acne is considered to be mild, while extensive papulopustular and nodulocystic is severe.

Clinical features

- Microcomedone:
- Hyperkeratotic plug made of sebum and keratin in follicular canal.

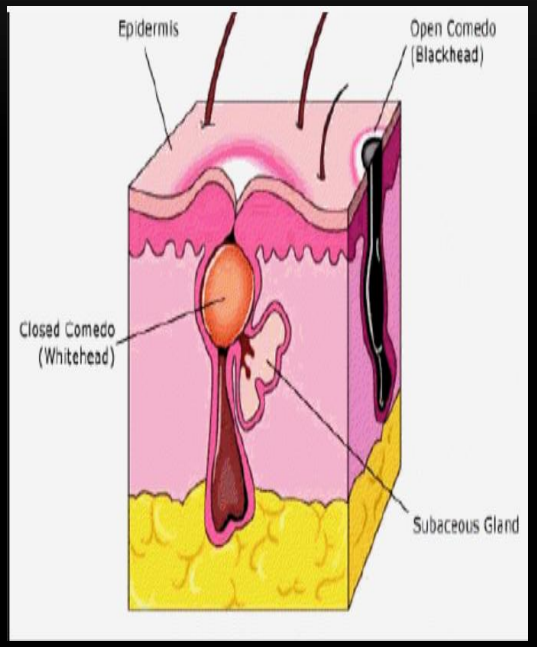
Clinical features

<u>Closed comedo(a whitehead):</u>

Hyperkeratotic plug made of sebum , keratin in follicular canal and sebum accumulation

<u>Open comedo(a blackhead):</u>

when follicular orifice is opened packed with melanin and oxidized lipids



Clinical features

- When follicles rupture into surrounding tissues they result in papule/pustule/nodule cysts.

SUBTYPES OF ACNE

1-Neonatal acne

- Onset between 0-6 w of age
- Characterized by closed comedones
- Resolve spontaneously within 1-3 months
- No relation with later development of acne

SUBTYPES OF ACNE

2-Infantile Acne

- Onset between 3-6 m
- Characterized by inflammatory lesions
- Can be associated with precocious androgen secretion secondary to brain hamartoma and astrocytoma

SUBTYPES OF ACNE

Endocrinologic examination and bone age and MRI are important

There is increased risk of development of severe acne

SUBTYPES OF ACNE

3 - Teenage Acne

More in boys

Mainly comedonal

May be the first sign of puberty

SUBTYPES OF ACNE

4.Adult Acne

- Affecting adults above 25 years
- Can be continuation of teenage acne or start denovo
- IF associated with hirsutism , irregular periods evaluate for hyper secretion of adrenal , ovarian androgens (e.g. Polycystic ovary syndrome)

SUBTYPES OF ACNE

5. Drug induced Acne

Steroids – iodides – bromides, INH, dilantin, Lithium, phenytoin cause acneiform eruption.

The characteristic feature of steroids acne is the absence of comedons and being monomorphic (small pustules and papules all looking alike).

SUBTYPES OF ACNE

6-Acne Conglobata:

Highly inflammatory; with comedons, nodules abscesses, draining sinuses, over the back and chest .

Affect males In adult life.

Heals with scars (depressed or Keloidal).

SUBTYPES OF ACNE

7- Acne Fulminans:

Sudden massive inflammatory tender lesions with ulceration.

Heals with scarring.

Associated with Fever, Elevated ESR Polyartharalgia, Leukocytosis.

SUBTYPES OF ACNE

8-Occupational Acne:

Due to contact with oils, tars , chlorinated hydrocarbons.

Lesions appear at site of contact including large comedons, papules pustules, nodules.

SUBTYPES OF ACNE

- The most serious form of occupational acne is the chloracne due to systemic effect
- Liver damage
- CNS involvement
- Decrease lung vital capacity

SUBTYPES OF ACNE

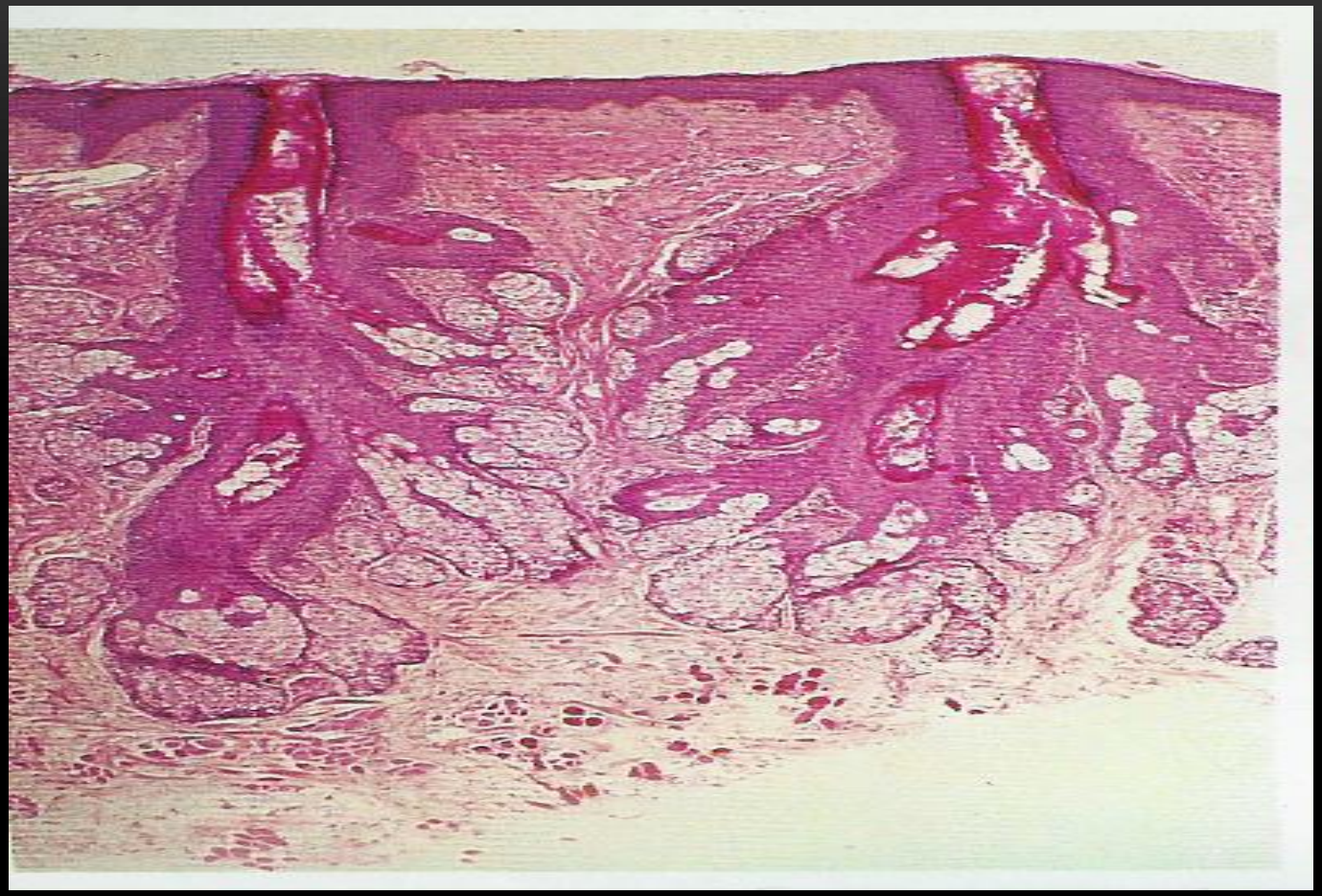
9-Gram Negative Folliculitis:

- Infection with gram negative organisms
- Klebsiella
- proteus
- E.coli
- Seen in patients under chronic acne treatments

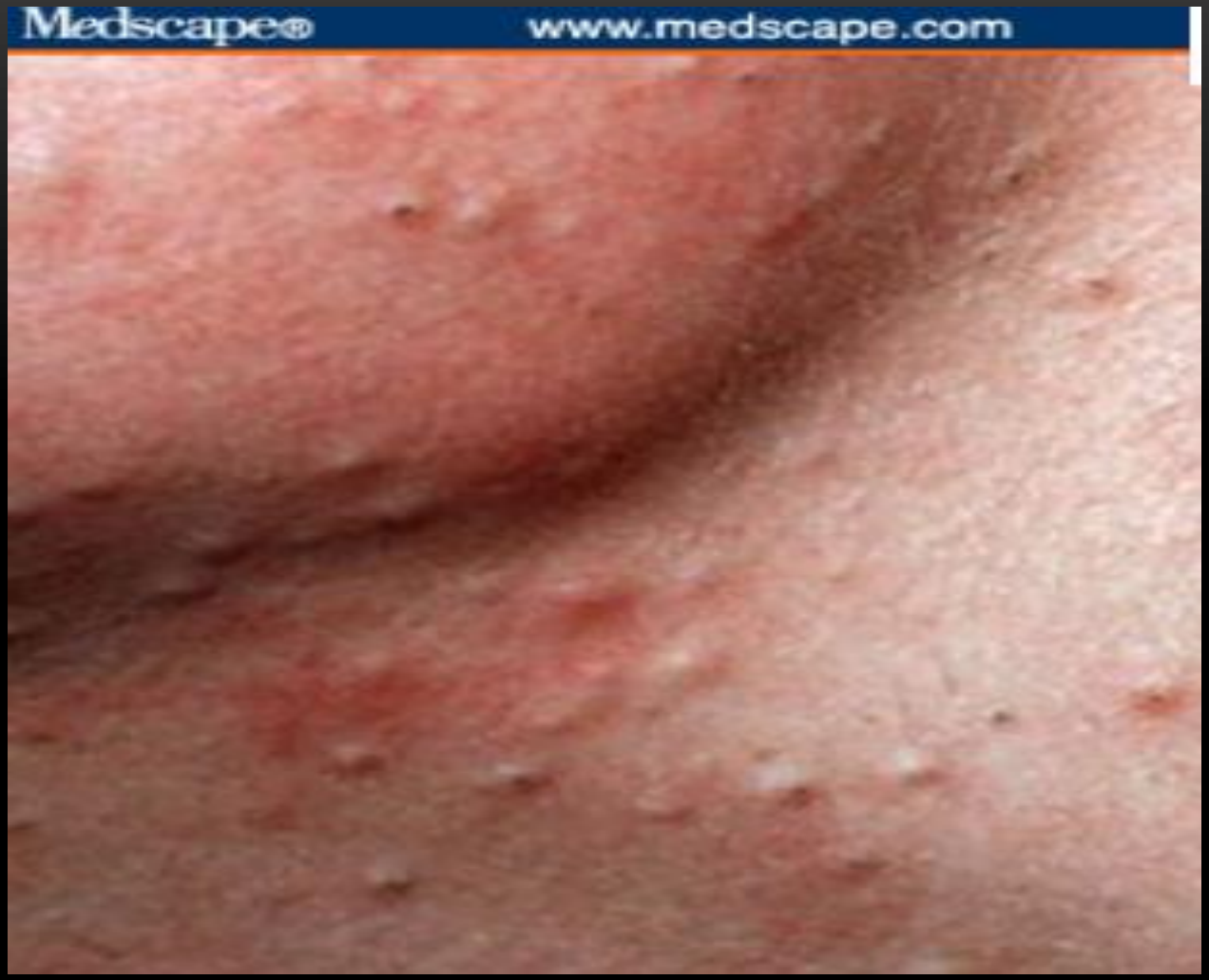
SUBTYPES OF ACNE

Superficial pustules without comedons or even cysts involving from intranasal area to chin and cheeks.

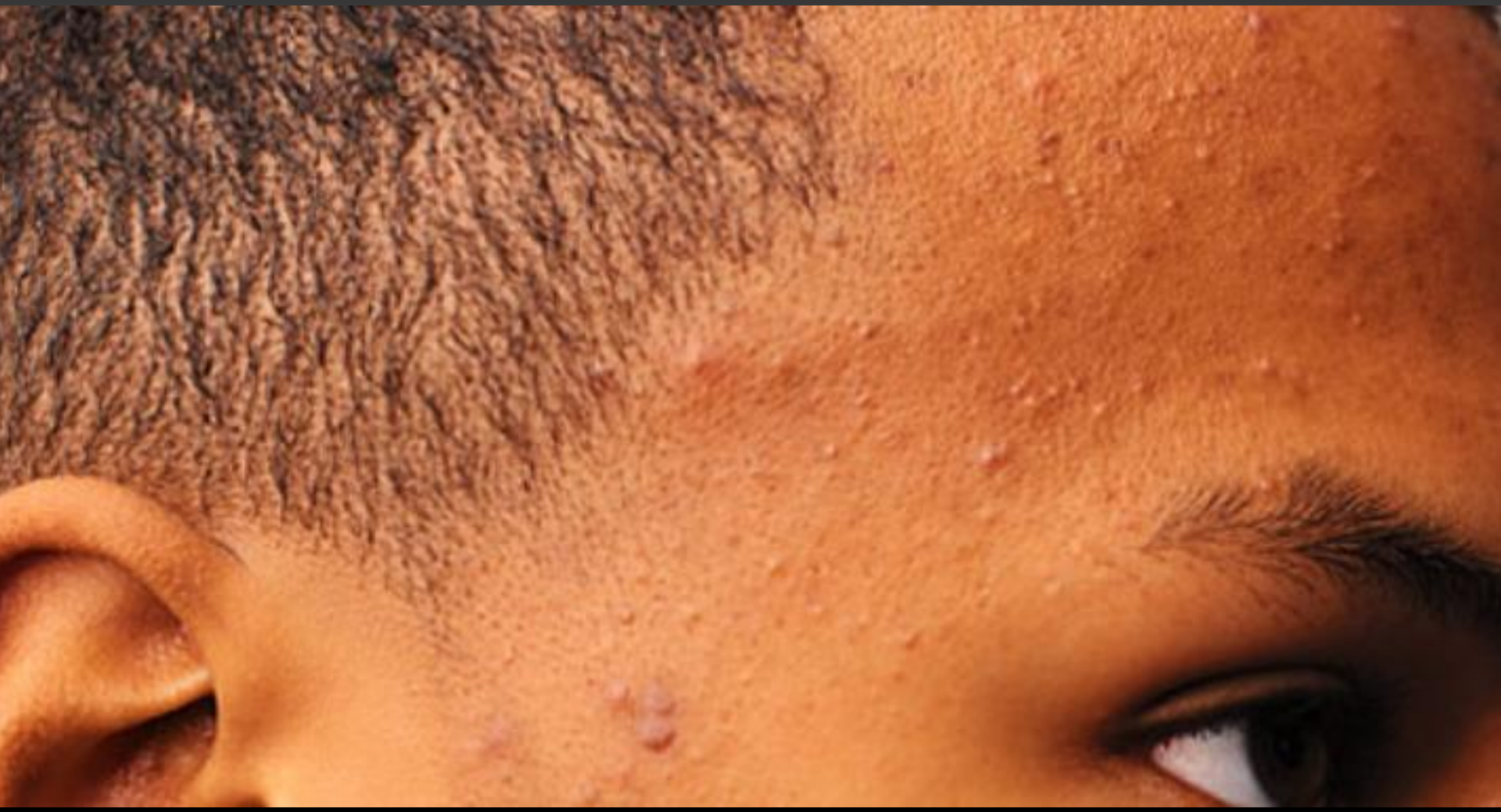
Responsds to ampicillin, Isotretenoin, TMP-SM.



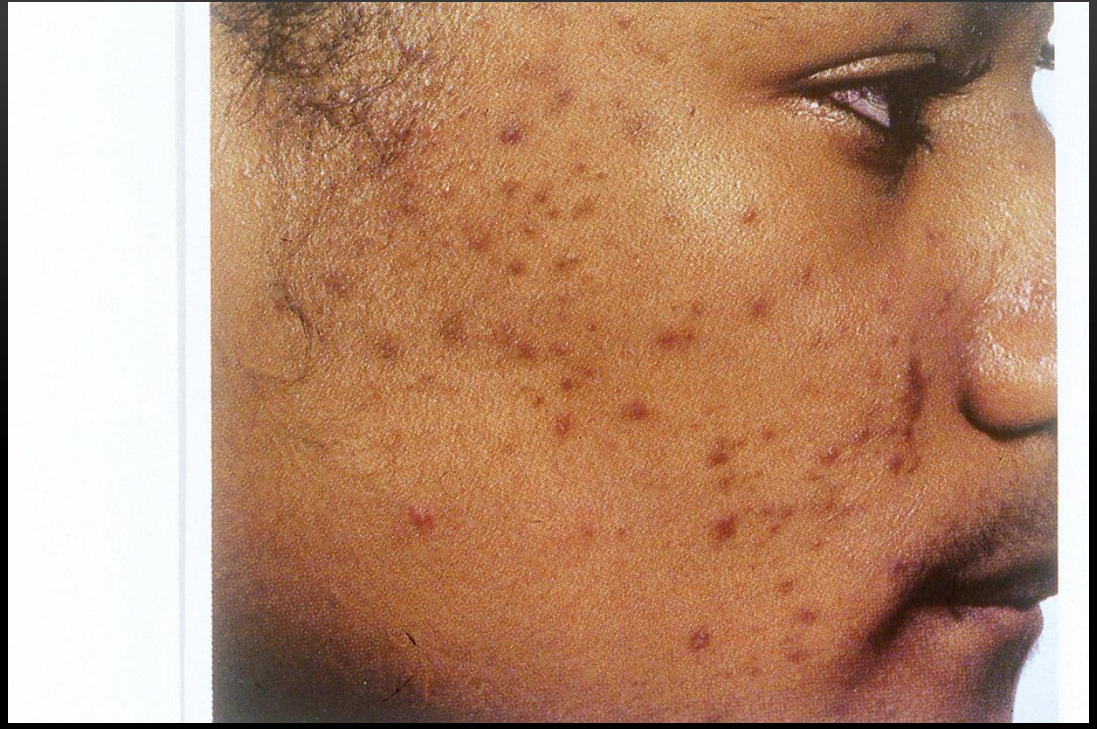
Obstructed sebaceous duct



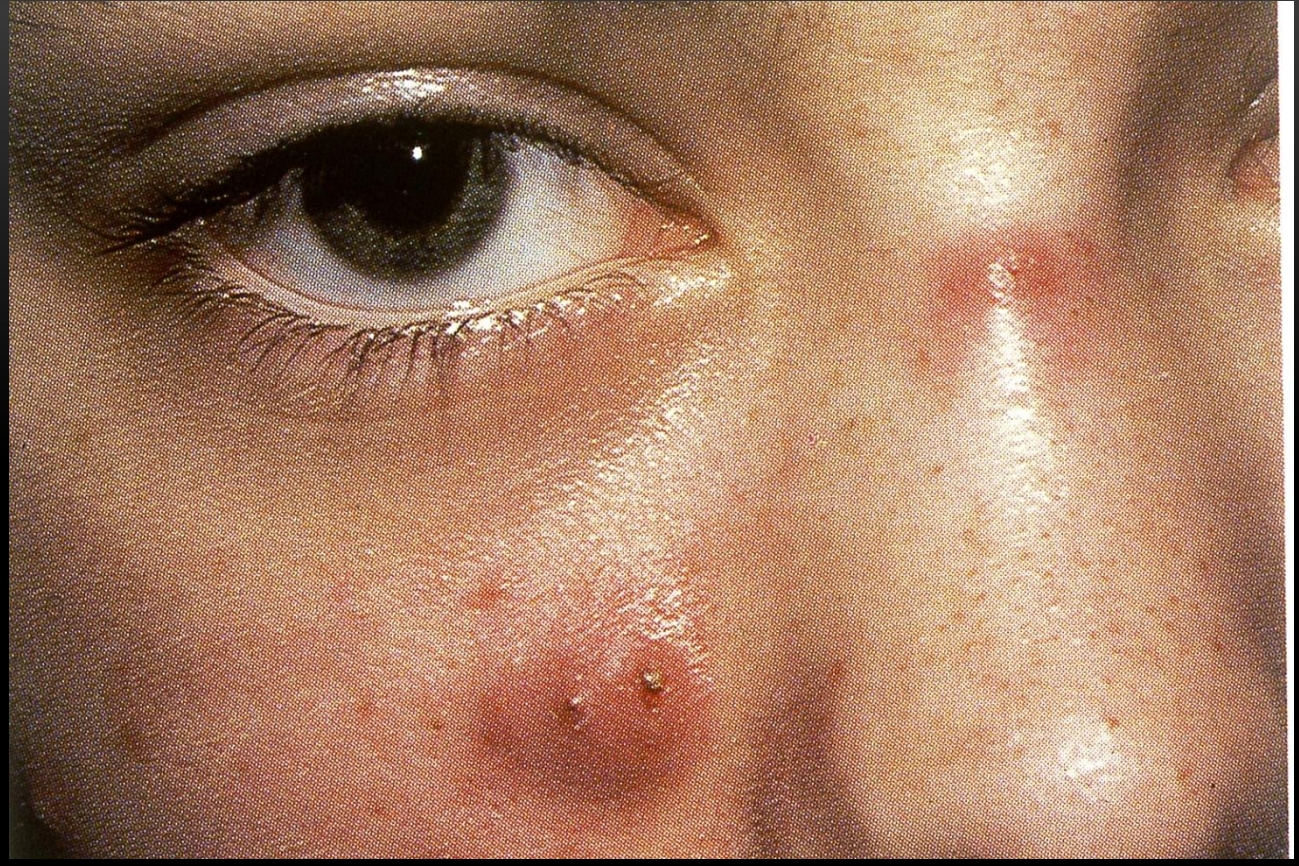
Closed and open comedones



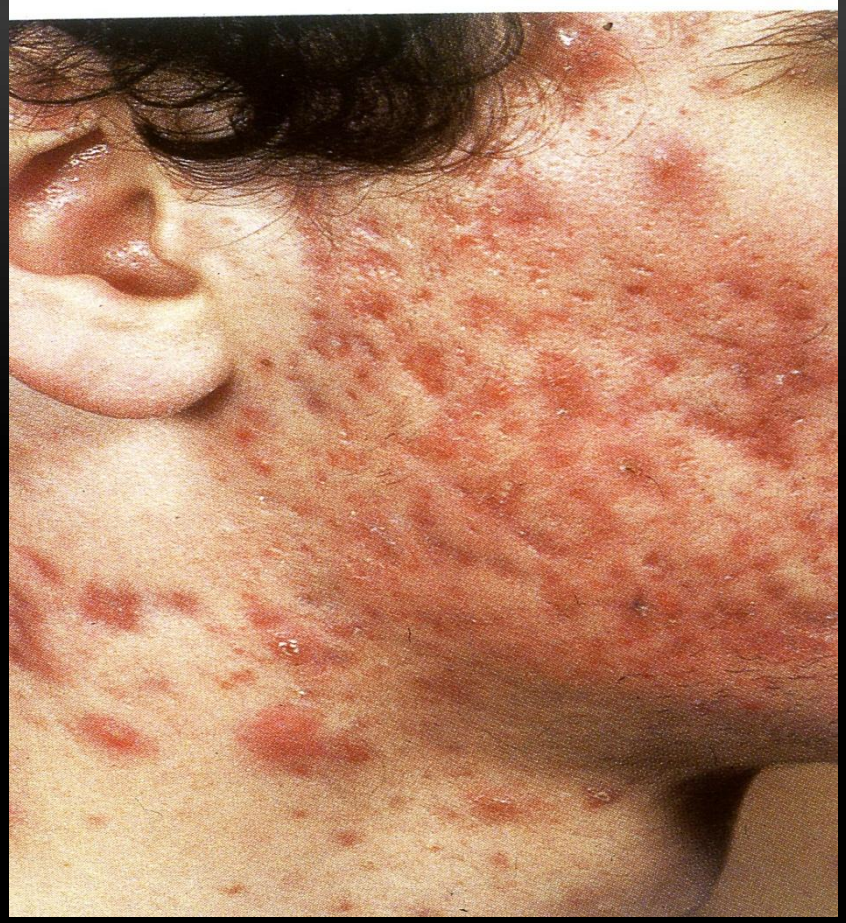
Closed and open comedones



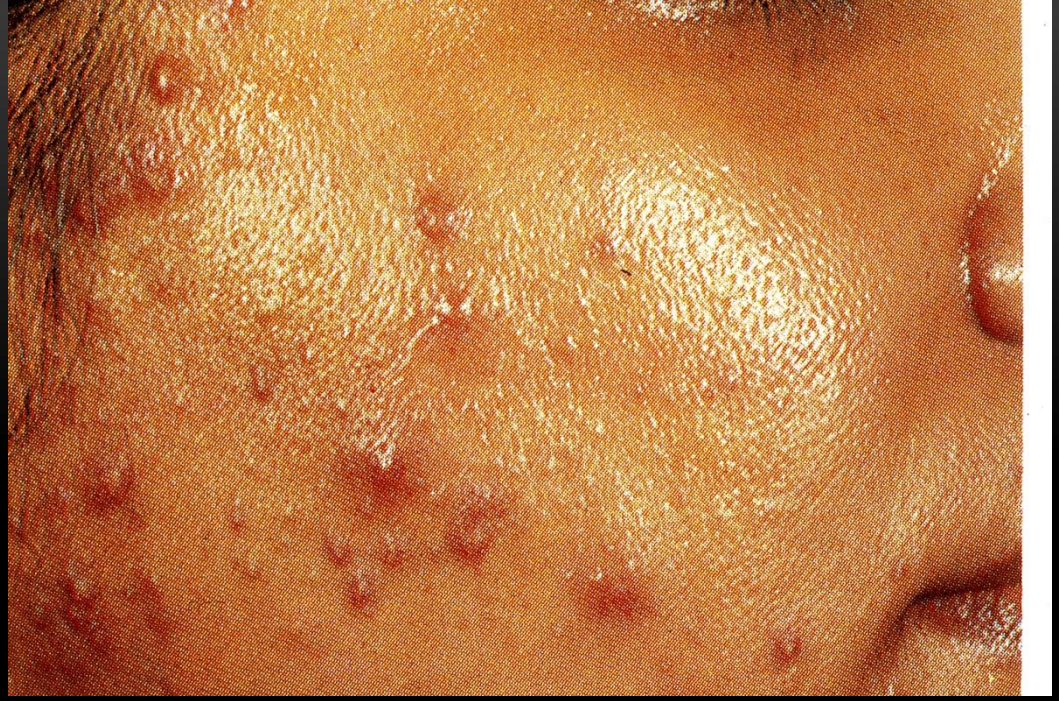
Marked post inflammatory hyperpigmentation



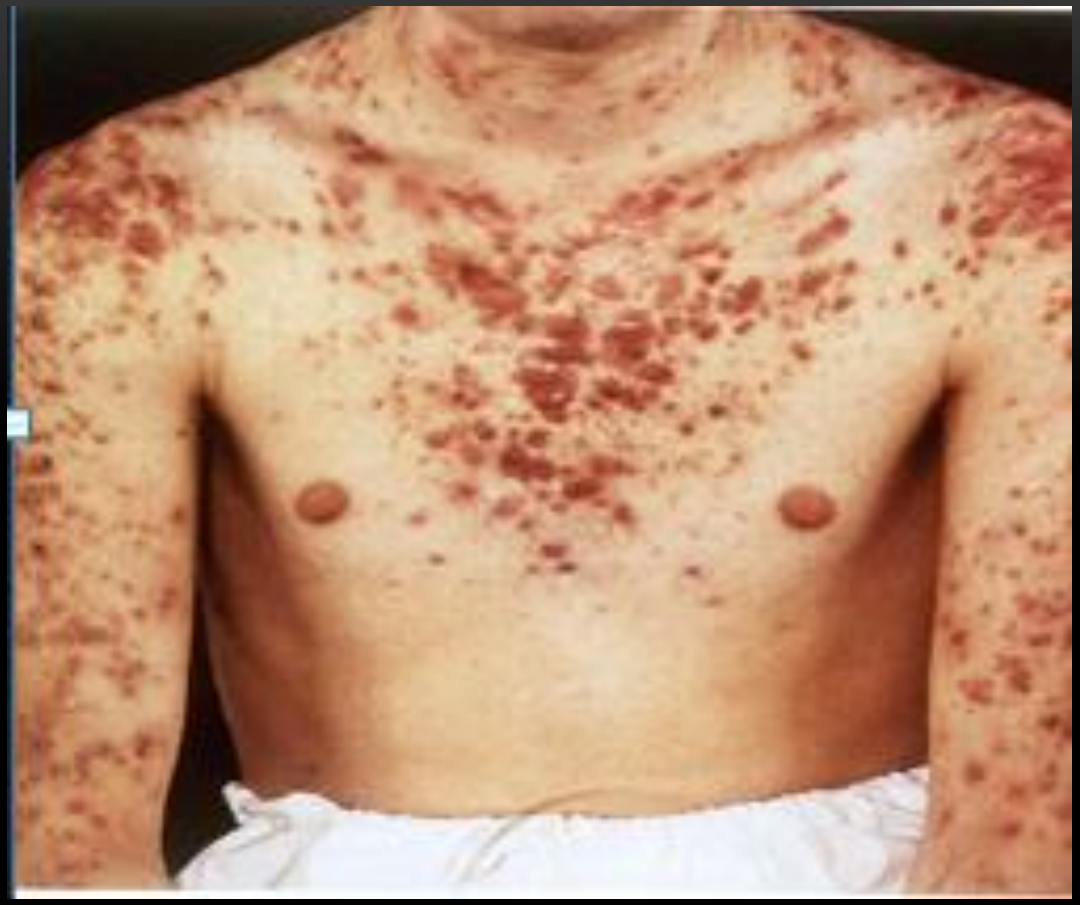
Nodules



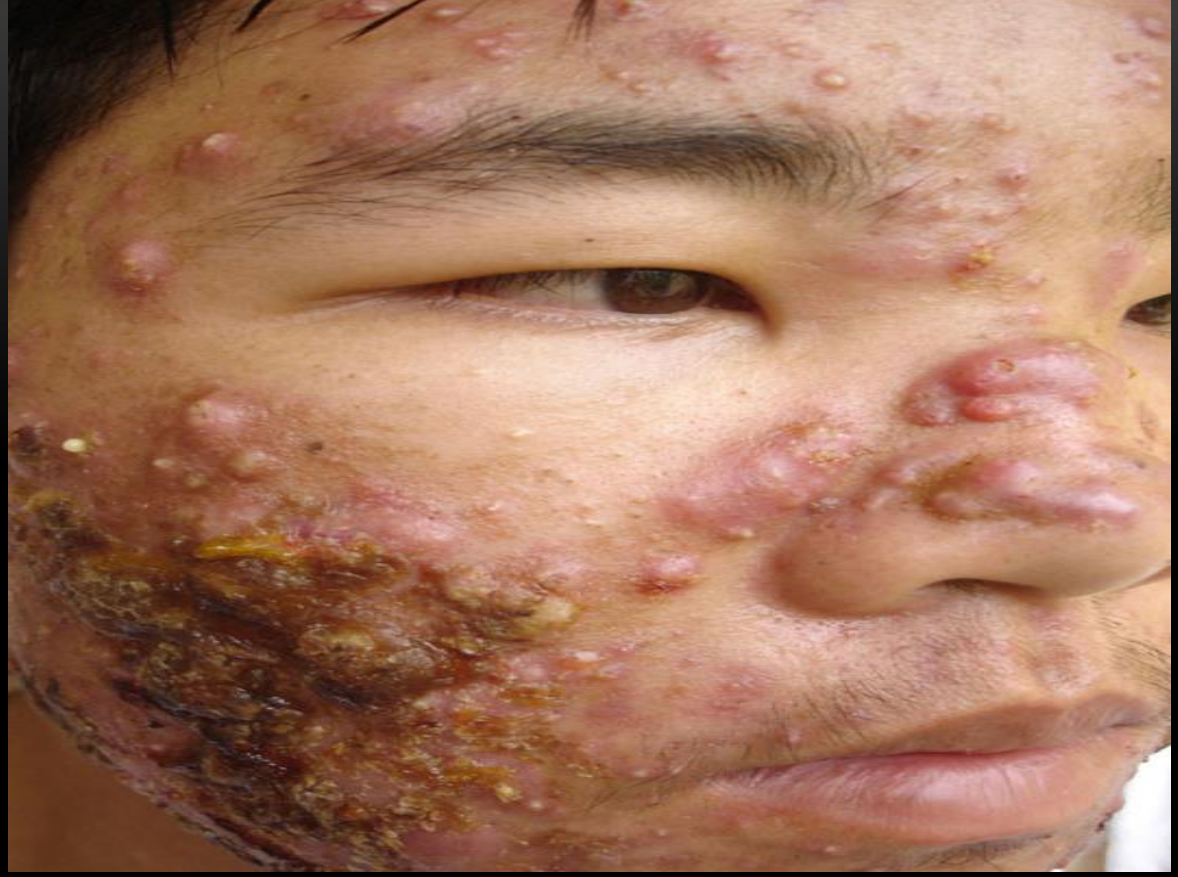
Acne with nodules and scars



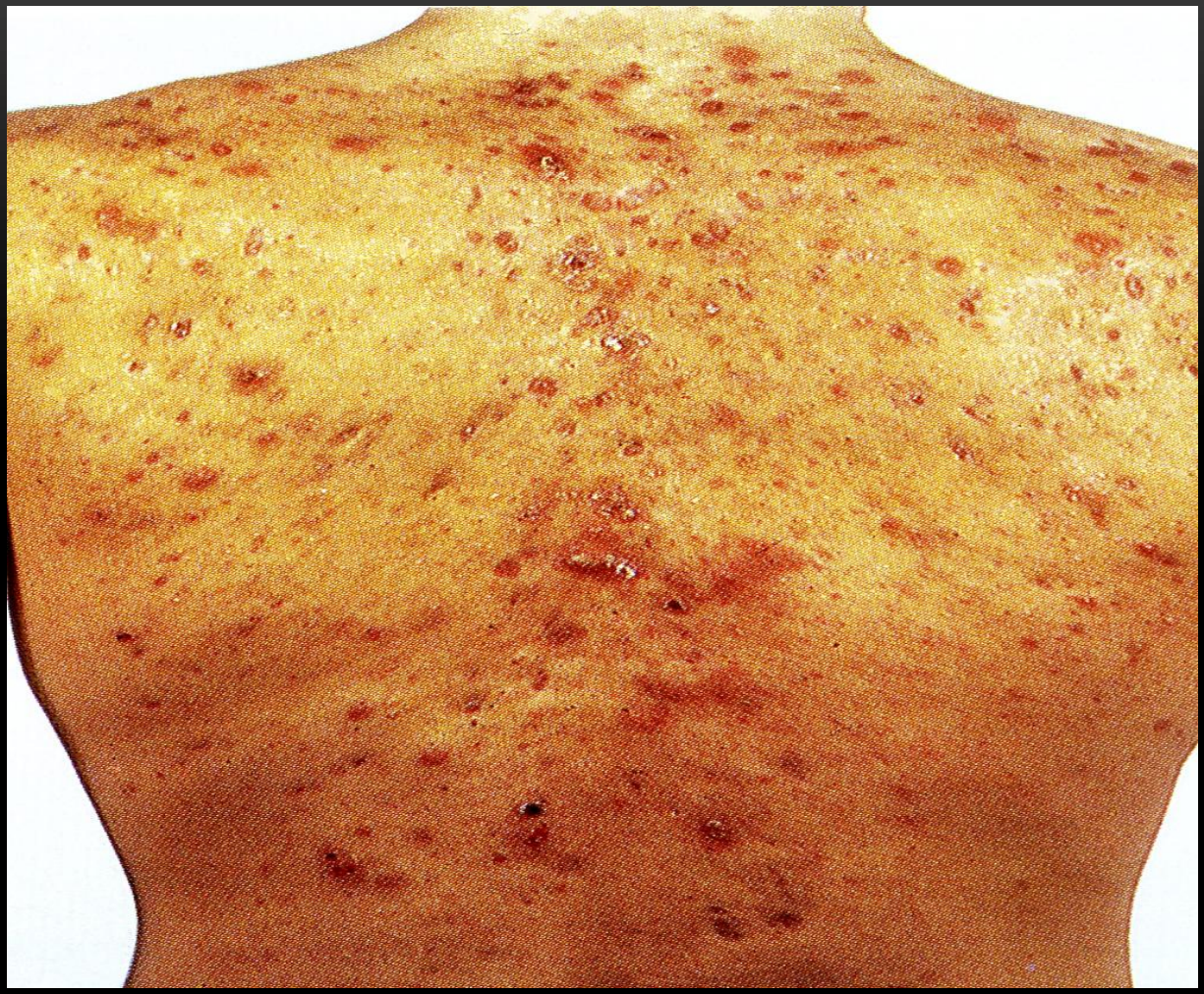
Seborrohea and papules , pustules



Acne conglobata
Nodules , Keloides

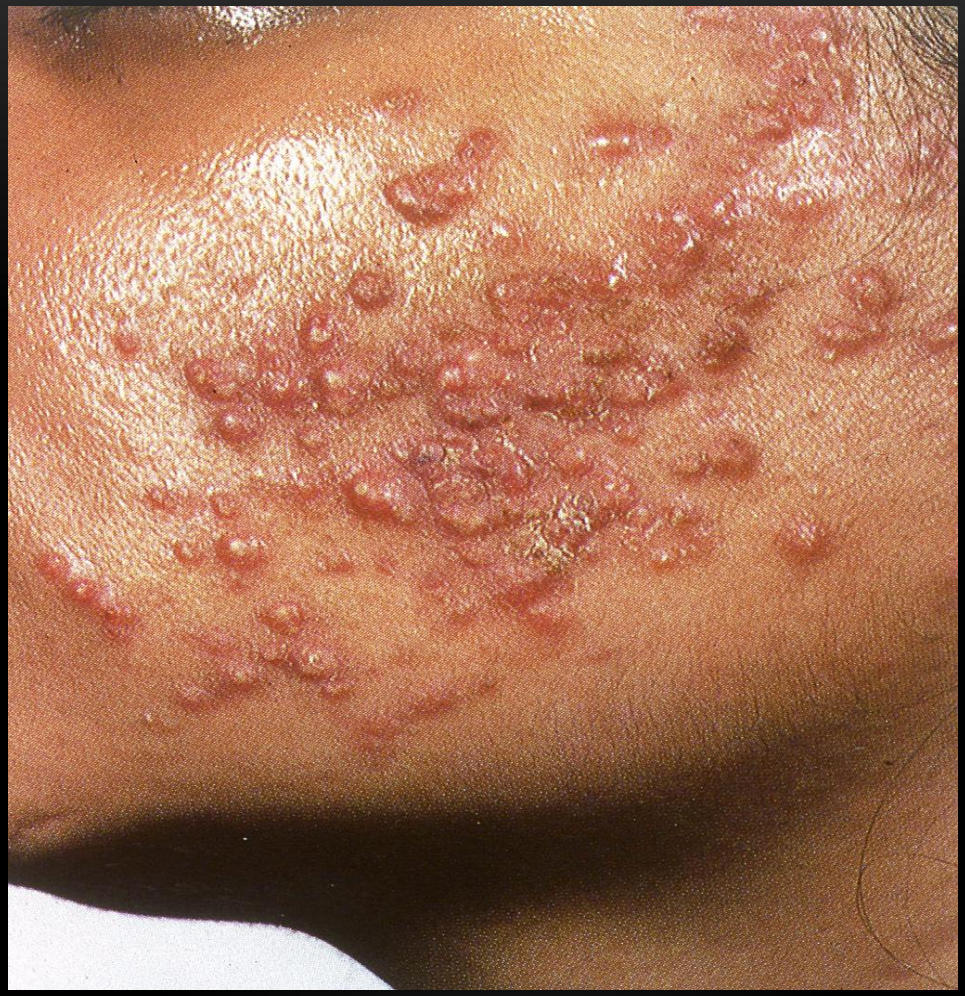


Nodules , pustules closed comedones,papules, pus
Acne fulminans

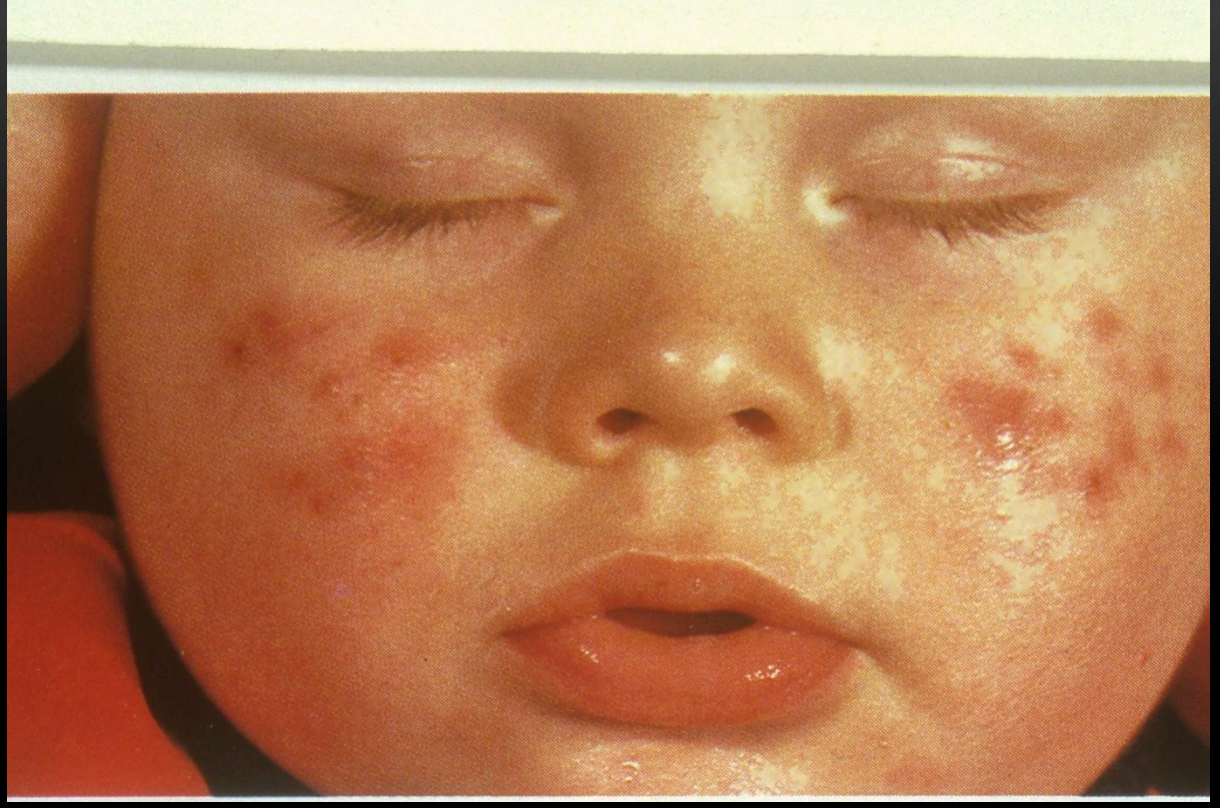


Acne conglobata

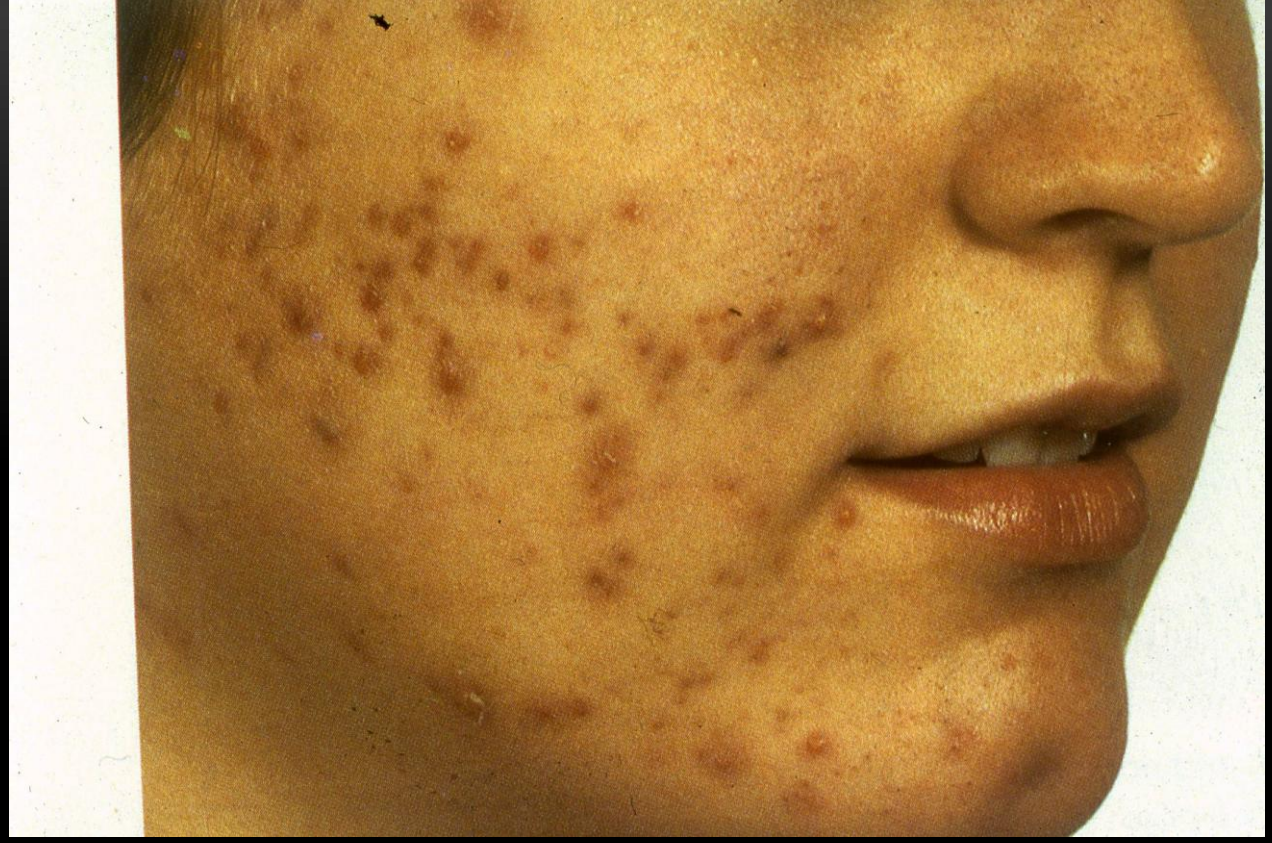
Scars, Nodules, Keloides, Sinuses



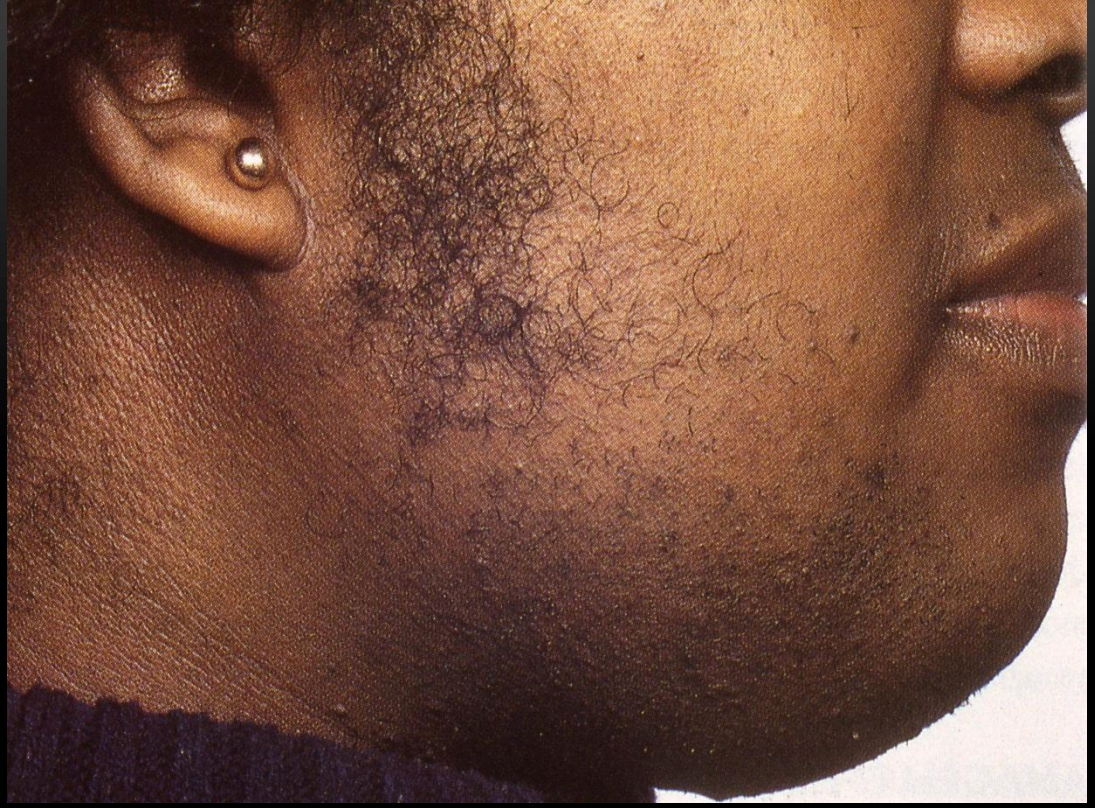
Monomorphic steroid acne



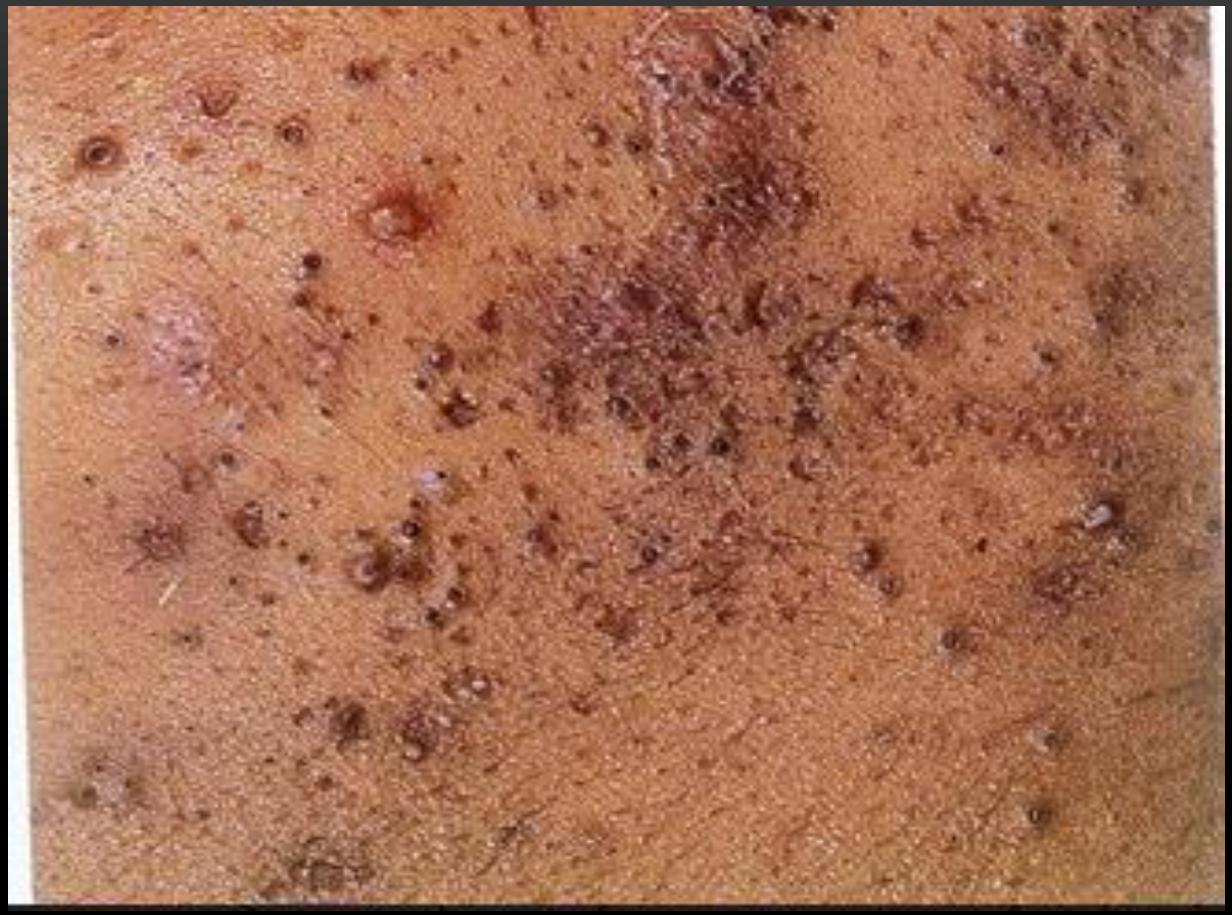
Neonatal acne



Postinfammatory hyperpigmentation, papules , pustules

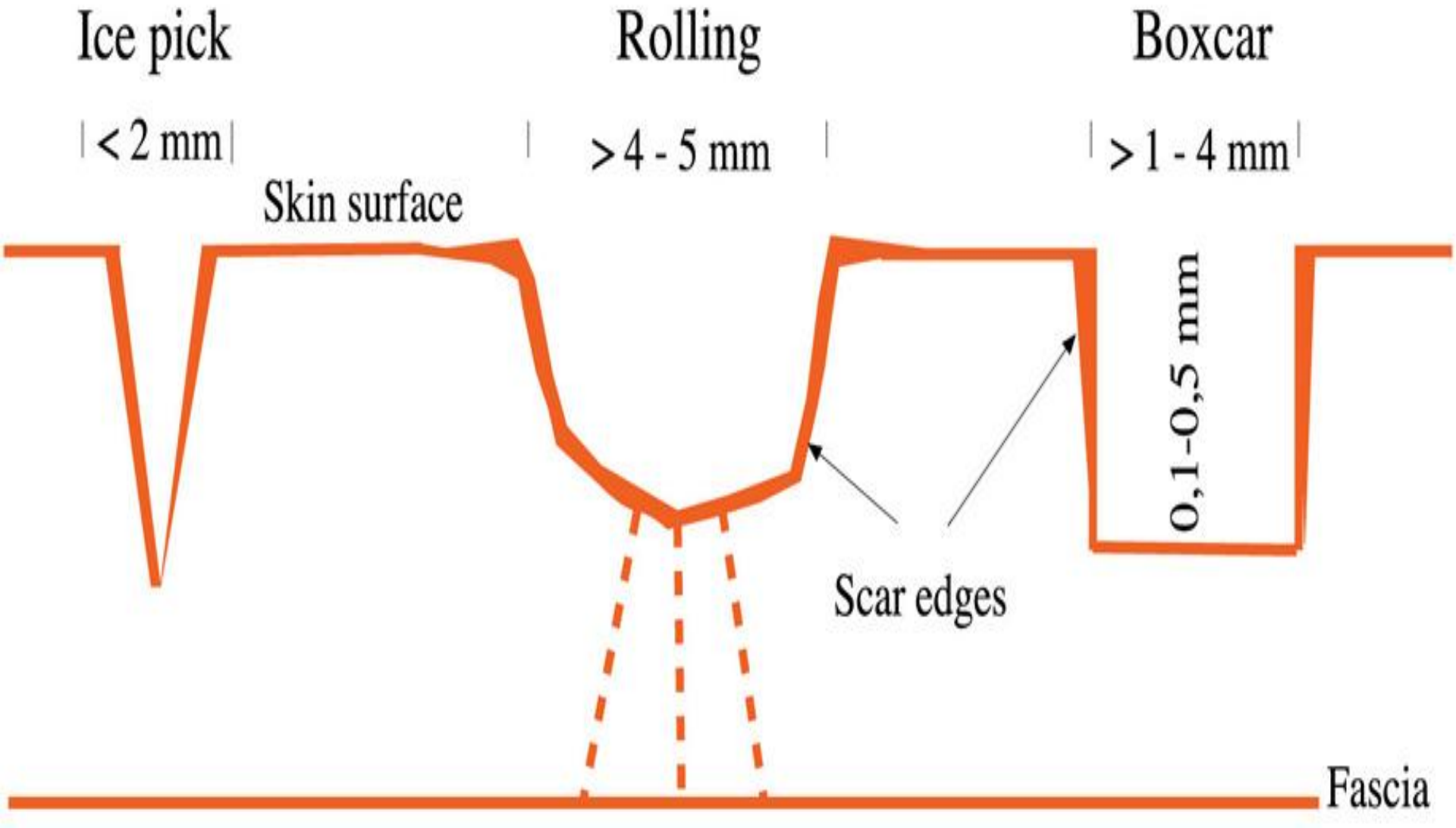


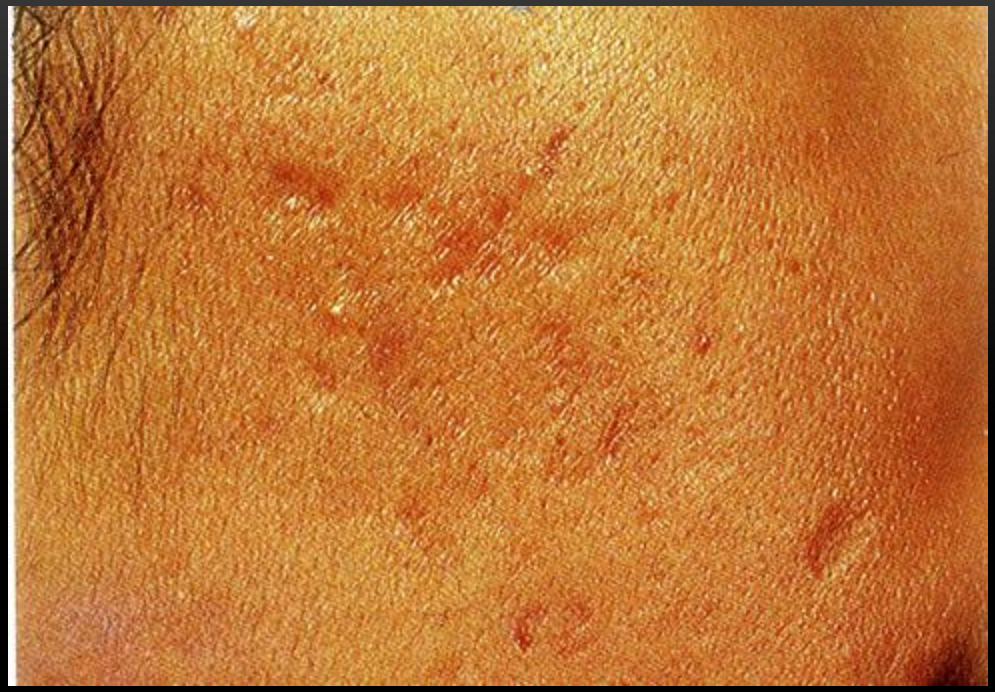
Hirsutism and closed comedones



Open comedones, papules ,pustules

Acne Scar subtypes





Acne rolling and boxcar scars

Aggravating Factors:

- Diet has no relation to acne
- Pre menstrual flare
- Sweating
- UV radiation
- Stress
- Friction
- Cosmetics and moisturizers (pomade acne)

ACNE TREATMENT - GOALS

- Decrease scarring
- Decrease unsightly appearance
- Decrease psychological stress
- Explain length of treatment , may be several months and initial response may be slow but must persevere .

PRINCIPLES IN TREATING ACNE:

- Reverse the altered keratinization.
- Decrease the intrafollicular p.acnes.
- Decrease sebaceous gland activity.
- Decrease inflammation.

ACNE VULGARIS

Differential Diagnosis:

- **Folliculitis**
- **Rosacea**

TREATMENT

Topical	Oral	Miscellaneous
Benzoyl peroxide	Antibiotics:	Laser resurfacing
Retinoic acid	Doxycycline	Chemical peel
Adaplene	Minocycline	Comedo extraction
Resorcinol, Sulfer	Azithromycin, Erythromycin	Dermaberasion
Azeliac acid	Retinoids:	Intralesional steroid
Antibiotics:	Isotretinoin	
Clindamycin	Hormones:	
Erythromycin	Antiandrogens	
	OCP	

TREATMENT

TABLE 3
HOW TO CHOOSE THE APPROPRIATE TREATMENT VEHICLE

Skin Type	Treatment Vehicle	Comments
Sensitive/dry skin	Cream	Nonirritating, nondrying
Oily skin	Gel	Drying effect; certain kinds of cosmetics may not adhere to gel; may cause burning irritation
	Solution	Mainly used with topical antibiotics
Any type	Lotion	Spread well over hairy areas; contains propylene glycol, which has burning/drying effects

Source: Reference 9.

TOPICAL THERAPY:

Benzoyl peroxide:

- Most commonly used treatment.
- High antibacterial activity. No reported resistance.
- Drying effect
- Could cause irritation, contact dermatitis, bleaching of hair and clothing
- Available concentrations from 2.5-10%
- **Retinoic Acid:**
- Comedolytic activity
- Advice patient not to expose to sun as it may lead to burn
- Present in gels, creams.

TOPICAL THERAPY:

- **Salicylic Acid:**
- Mild comedolytic, less potent than retinoic acid
- Present in creams,gels, body washes and cleansers
- **Resorcinol and sulfur:**
- are keratolytic and antibacterial
- When combined give better effect. Resorcinol causes dark brown scaling.
- **Azeliac acid**: antibacterial and bleaching.
- Systemic Antibiotic duration for 6 months
- Topical treatment results appear within 2 months.

TREATMENT

Drug	Dose	Recommendation and Duration
Tetracycline	0.5 BD	Taken on empty stomach to promote absorption Not to be taken with milk or antacid Not to be given to pregnant women “Why”?
Erythromycin	0.5 g BD	For pregnant women with bad acne
Azithromycin	0.5 g 3times/week	Nausea and gastric upset Used for 8 weeks
Doxycycline	100 mg/day	Can be taken with food, photosensitivity.
Minocycline	100 mg/day	Drug could cause blue – black pigmentation in scars, lupus, hepatitis, photosensitive drug rash
Clindamycin		Could cause pseudo membraneous colitis
Trimethoprim Sulphamethoxazole		Used only in resistant cases .
Isotretinoin		long term remission ,Given in resistant acne

ACNE TREATMENT

Hormonal

- OCP consider less androgenic progestogen eg marvelon/cilest, but increased risk of DVT
- Consider cyproterone acetate (antiandrogen) with estrogen(dianette) .

TREATMENT

Side Effects of Isotretinoin:

Causes dryness of mucous membranes (Chelitis, Conjunctivitis).

Hair loss.

Bone and joint pains.

Nose bleeds.

Dry eyes and intolerance to lenses.

ACNE TREATMENT

Headache and increased intracranial pressure (Psuedotumor cerebri) should not be given with tetracycline.

Increases triglycerides and cholesterol or LFT

Patients should avoid pregnancy 4 w after discontinuation of drug because of teratogenicity.

ROSACEA

Definition: Papules and Papulo- pustules in the center of the face against vivid erythematous background with telangi-ectasia.

Incidence:

Common in 3rd and 4th decade

Peaks between 40-50.

Common in fair skin.

Women are affected more than men but rhinophyma is more in men.

ROSACEA

Pathogenesis: Unknown

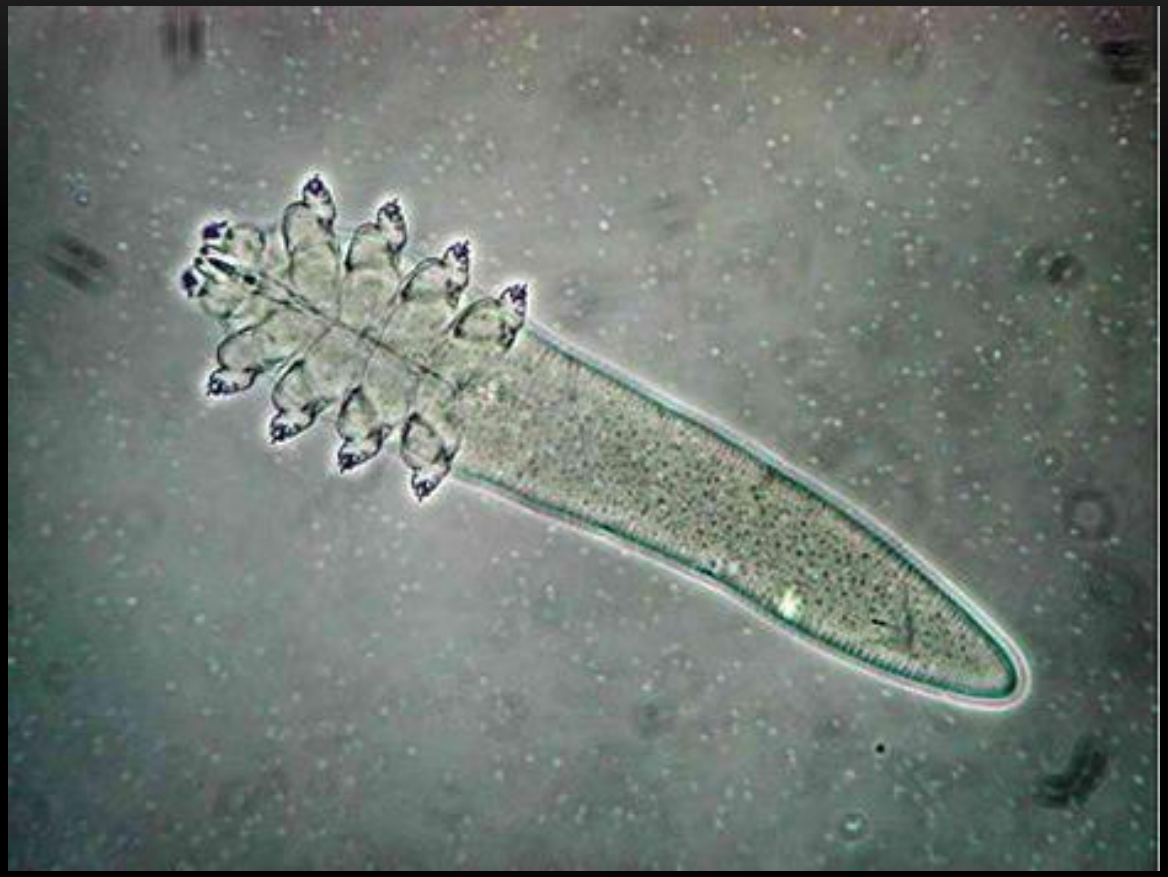
Genetic predisposition (38% have a relative).

Sunlight and heat.

Constitutional predisposition to flushing & blushing.

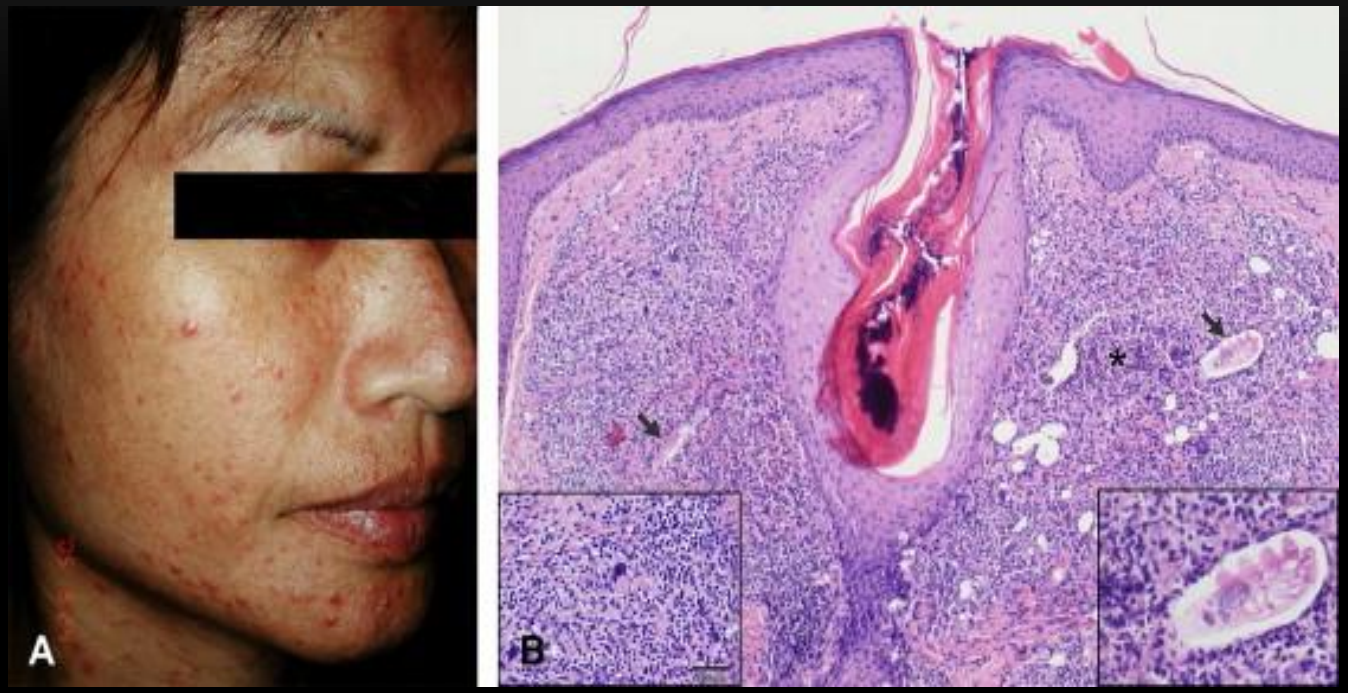
Demodex folliculorum mite.

ROSACEA



Demodex folliculorum mite

ROSACEA



Demodex folliculorum mite

CLINICAL FINDINGS

The hall mark is:

1. Episodes of flushing and erythema of the face marks the onset of the disease; in butterfly distribution.
2. Papules and pustules.

3. Erythema and telangi-ectasia.
4. Absent comedons.
5. Granulomas.

Localization:

The nose, cheeks ,chin, forehead, glabella.

Clinical findings

- Types of Rosacea:
- Erythematotelangictatic.
- Papulo-pustular.
- Ocular.
- Phymatous

COMPLICATIONS

Rhinophyma:

Swelling of the nose due to sebaceous gland hyperplasia

Eye complications:

Occurring in 50% of cases including

Blepharitis , Keratitis

Conjunctivitis, Iritis.

Eyelid telangi-ectasia.

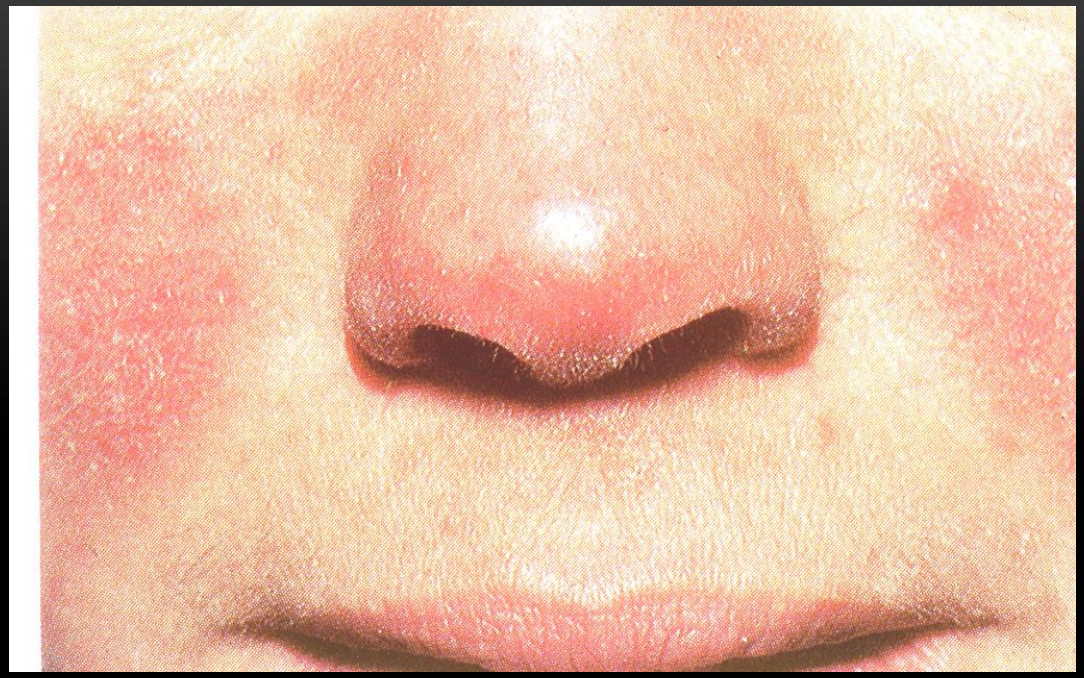
Differential Diagnosis

SLE (erythema only)

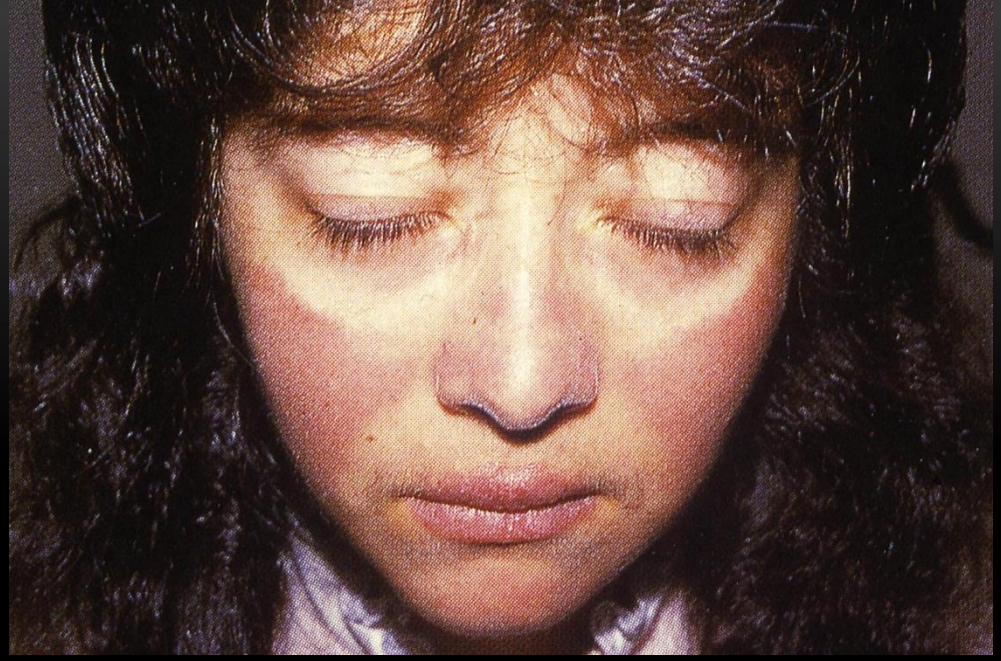
Acne vulgaris (comedones)

Seborrheic dermatitis (no pustules)

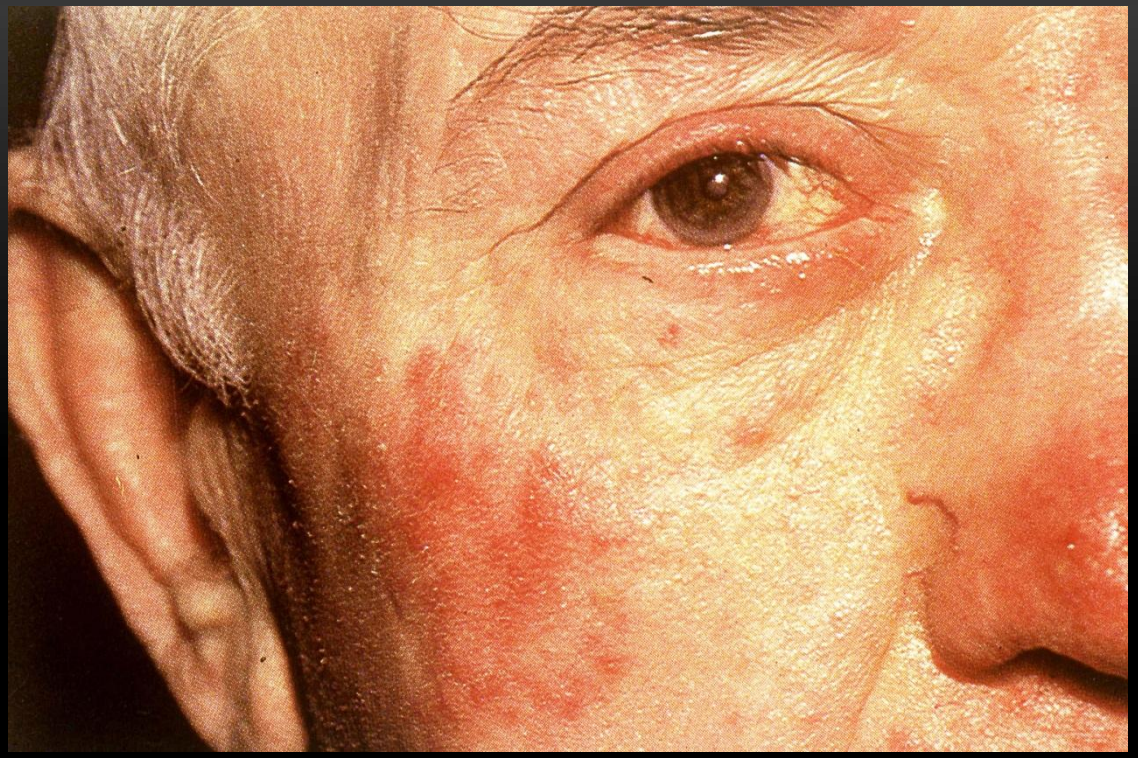
Perioral dermatitis (location)



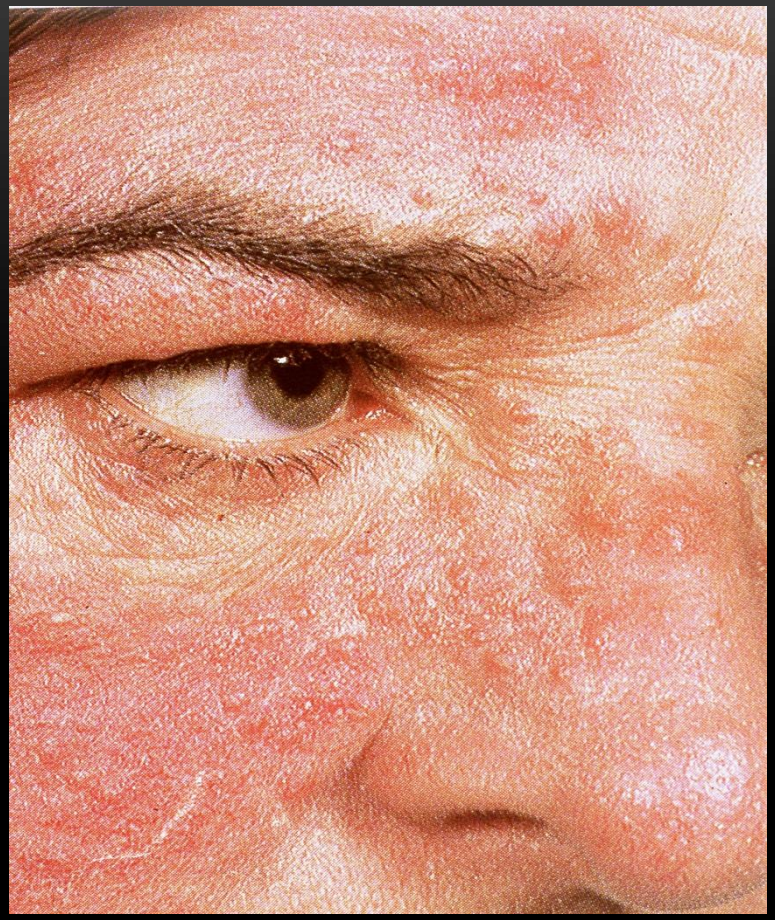
Malar erythema and scales



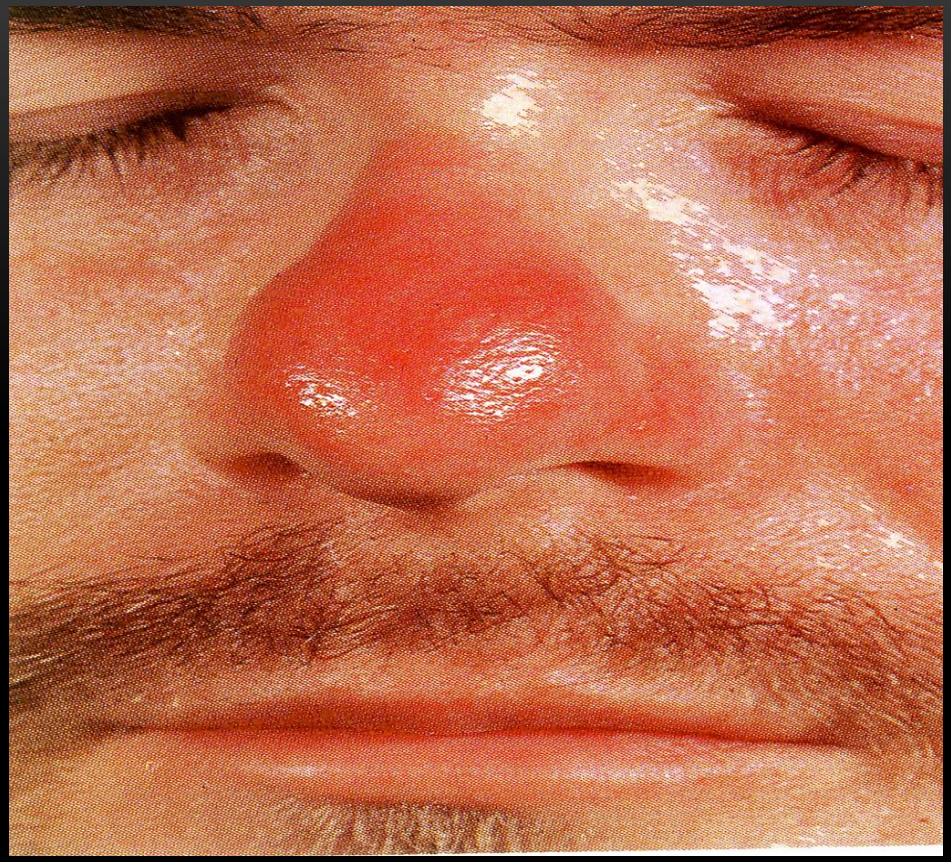
Malar erythema and scales



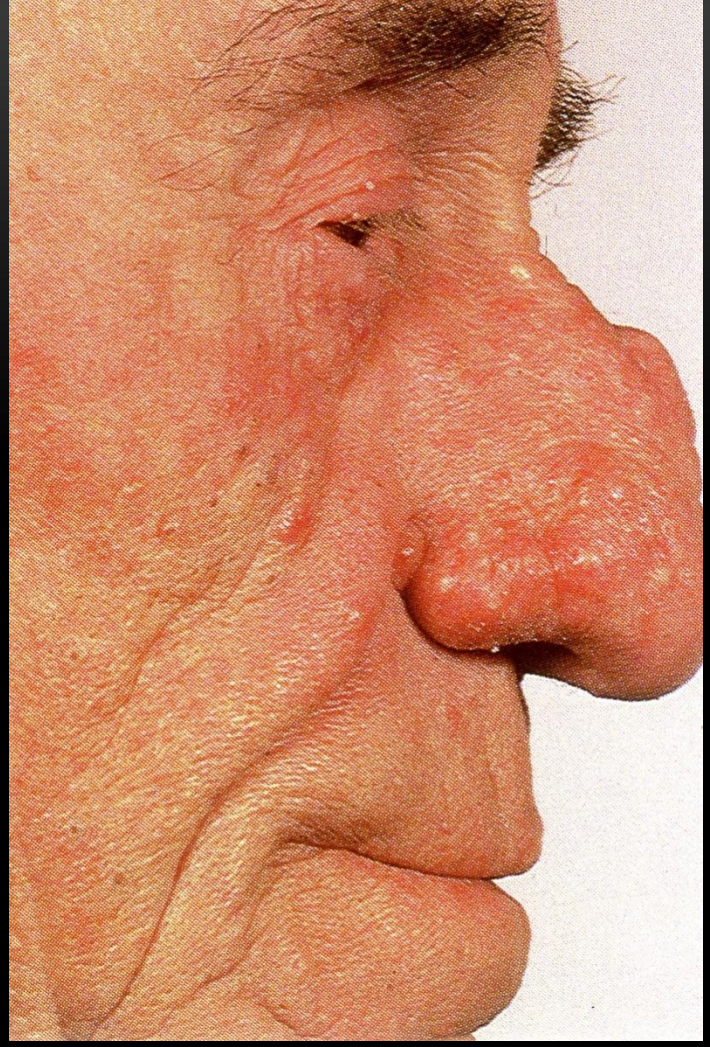
Telangictasia, papules , blepharitis , conjunctivites



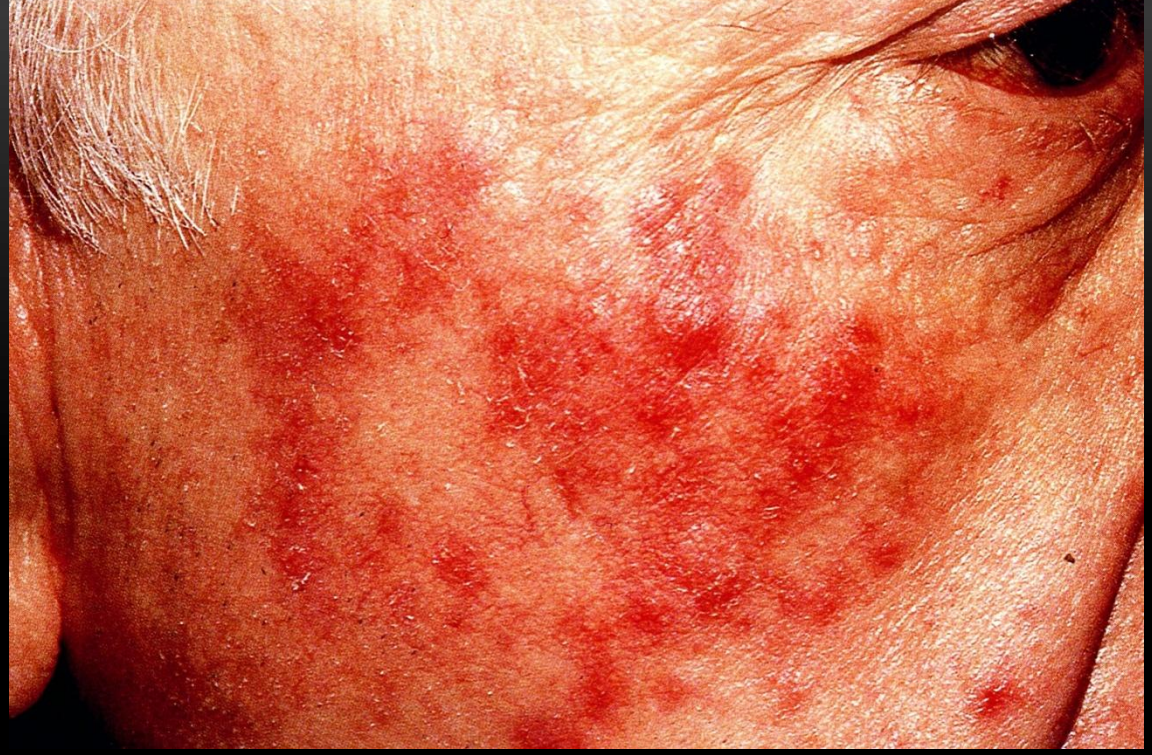
Papules on erythematous background



Rhinophyma



Rhinophyma



Papules on erythematous background , telangictasia

TREATMENT

Schedules are determined by stage & severity.

►General measures:

► The skin of Rosacea patients is delicate to physical insults.

►Patient should use mild soaps or diluted detergents.

►Protection against sunlight by sunscreen

►Avoid hot drinks and heat.

TREATMENT

Topical	Systemic
1.Topical antibiotics Clindamycin Erythromycin	Tetracycline reduces erythema
2. Metronidazole –affects papules of pustules but no effect on erythema	Minocycline
3. Imidazoles e.g. Ketoconazole cream – has anti-inflammatory action	Doxycycline
4. Sulfacetamide lotion	clarithromycin
5. Isotretinoin cream	Isotretinoin in resistant cases phymas (0.1 -0.2 mg/kg)
Antiparasitic Lindane Crotamiton Benzyl benzoate	Metronidazole 500 mg for 20-60 days
Sunscreen, Vascular laser	Dapsone

TREATMENT

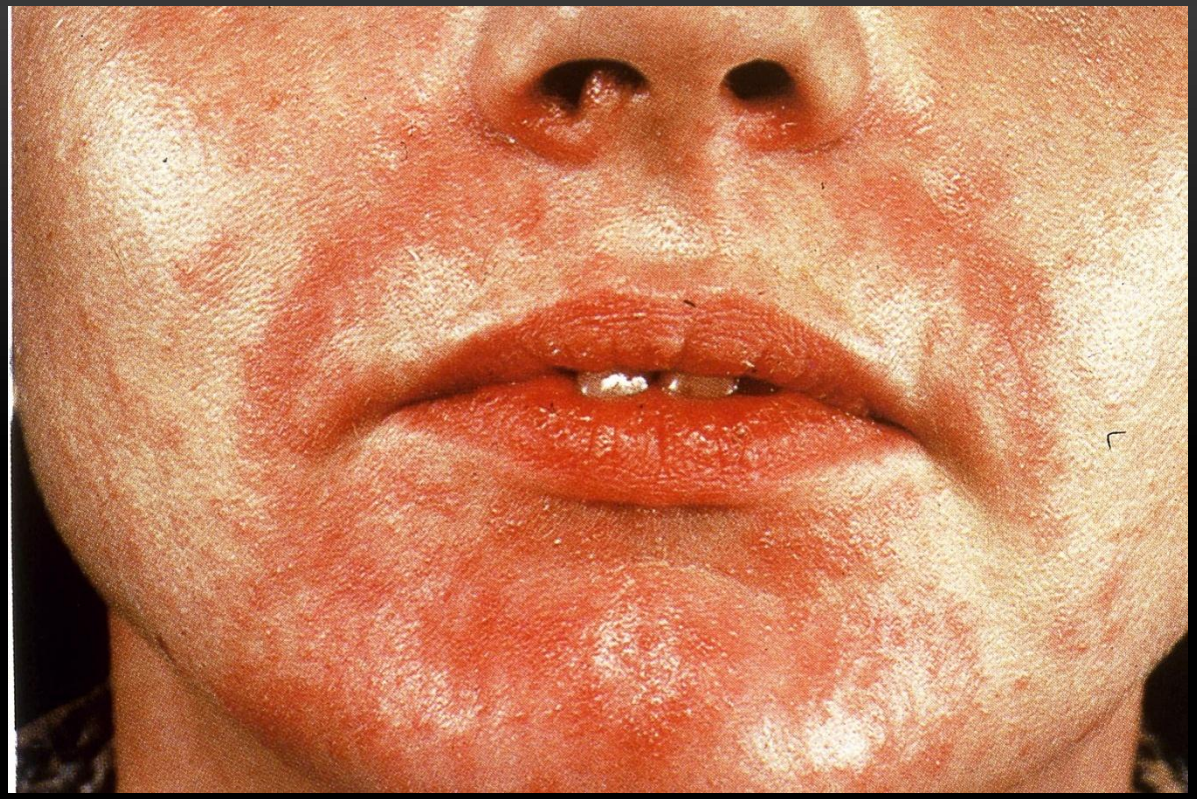
Topical:

-Metronidazole gel 0.75%
-Erythromycin 2% gel bid

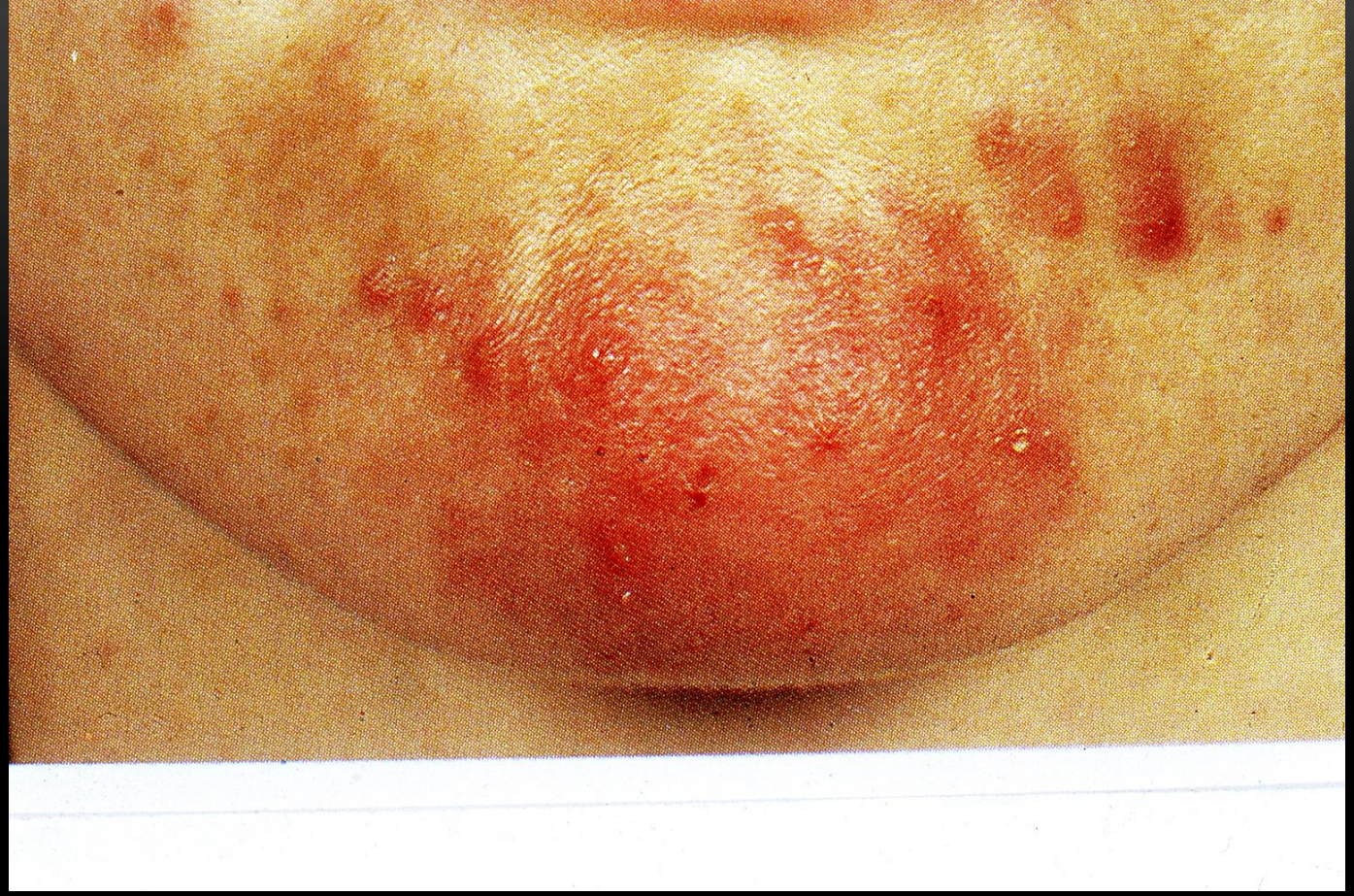
Systemic:
Minocycline 100 mg bid till clear then taper
Doxycycline 100 mg bid till clear then taper
Tetracycline 500 mg bid till clear and taper

PERIORAL DERMATITIS

- Occurs mainly in young women.
- Discrete & confluent papulo- pustules over the perioral or periorbital skin sparing the vermilion border of lips.
- No comedones.
- Predominant in females at 20- 30 years of age.
- Aggravated by topical steroids.
- Occasionally itchy or burning or feeling of tightness.



Female with papules over chin



Papules , pustules, no comedones

DIFFERENTIAL DIAGNOSIS

- Acne vulgaris.
- Rosacea.
- Seborrheic Dermatitis.
- Atopic Dermatitis.
- Allergic Contact Dermatitis.

HIDRADENITIS SUPPRATIVA

- Chronic supprative scarring disease of apocrine gland bearing skin (axillae, anogenital region ,under female breast)
- Associated with obesity
- Develops in 2nd and 3rd decades

HIDRADENITIS SUPPRATIVA

- **Pathogenesis:**

1. Unknown
2. Apocrine duct occlusion
3. Dilatation and rupture of apocrine gland
4. Secondary bacterial infection and draining sinuses
5. Genetic predisposition(38% have relative affected)

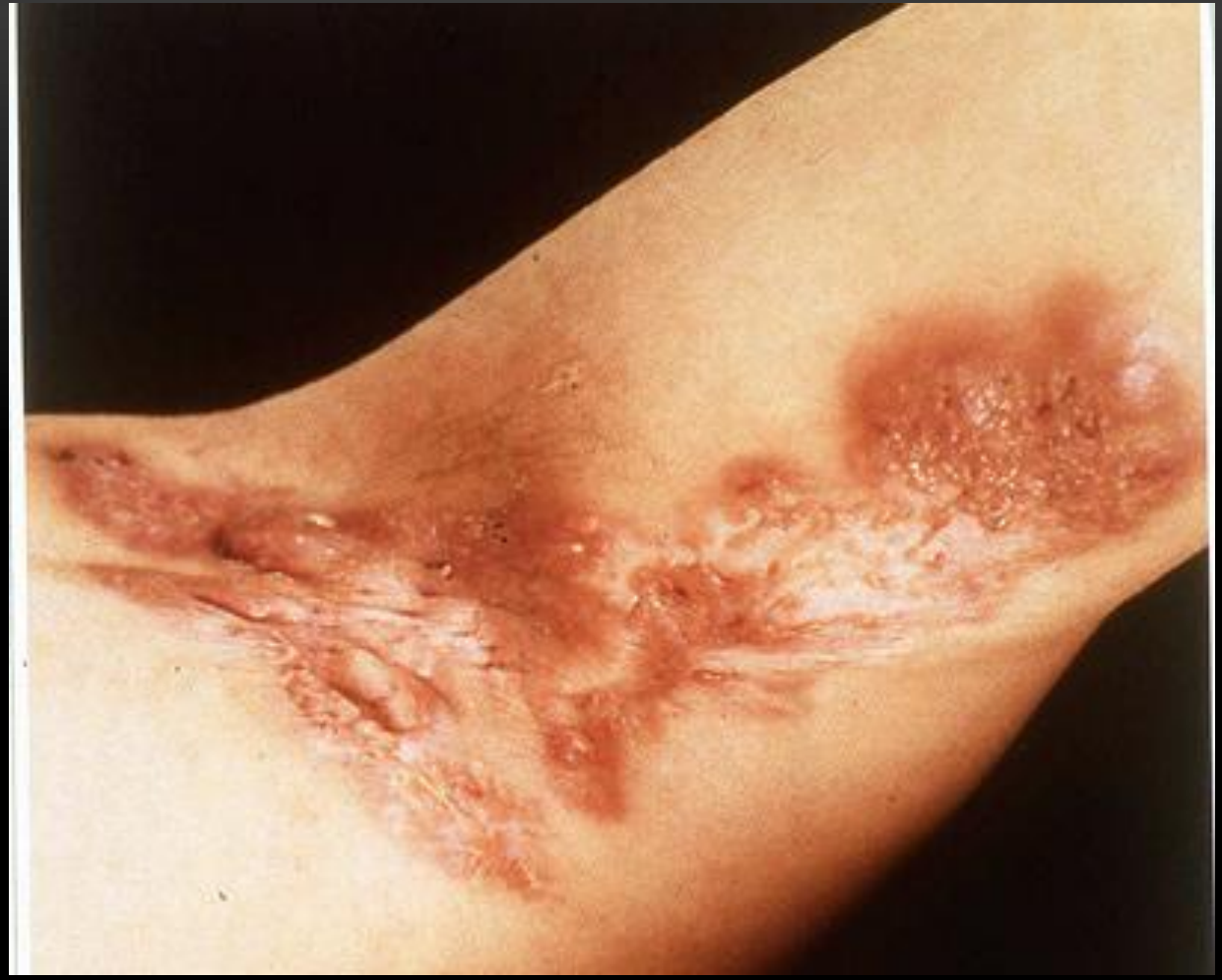
CLINICAL PRESENTATION

- Intermittent pain and tenderness.
- Pus drainage.
- Double comedons (characteristic lesion).
- Nodules, abscess, sinus tracts, scarring
- Submammary, axillary , inguinal regions are common in females.
- Perineal involvement occurs more in males.

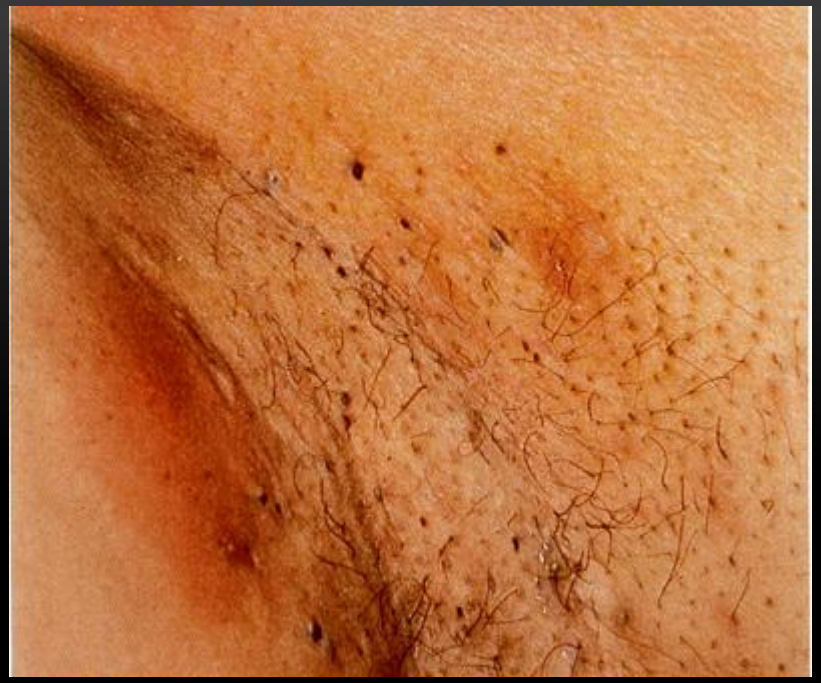
ASSOCIATED FINDINGS:

The follicular occlusion triad including:
1. Extensive acne vulgaris (conglobata variety).
2. Perifolliculitis of the scalp.
3.Pilonidal sinus.

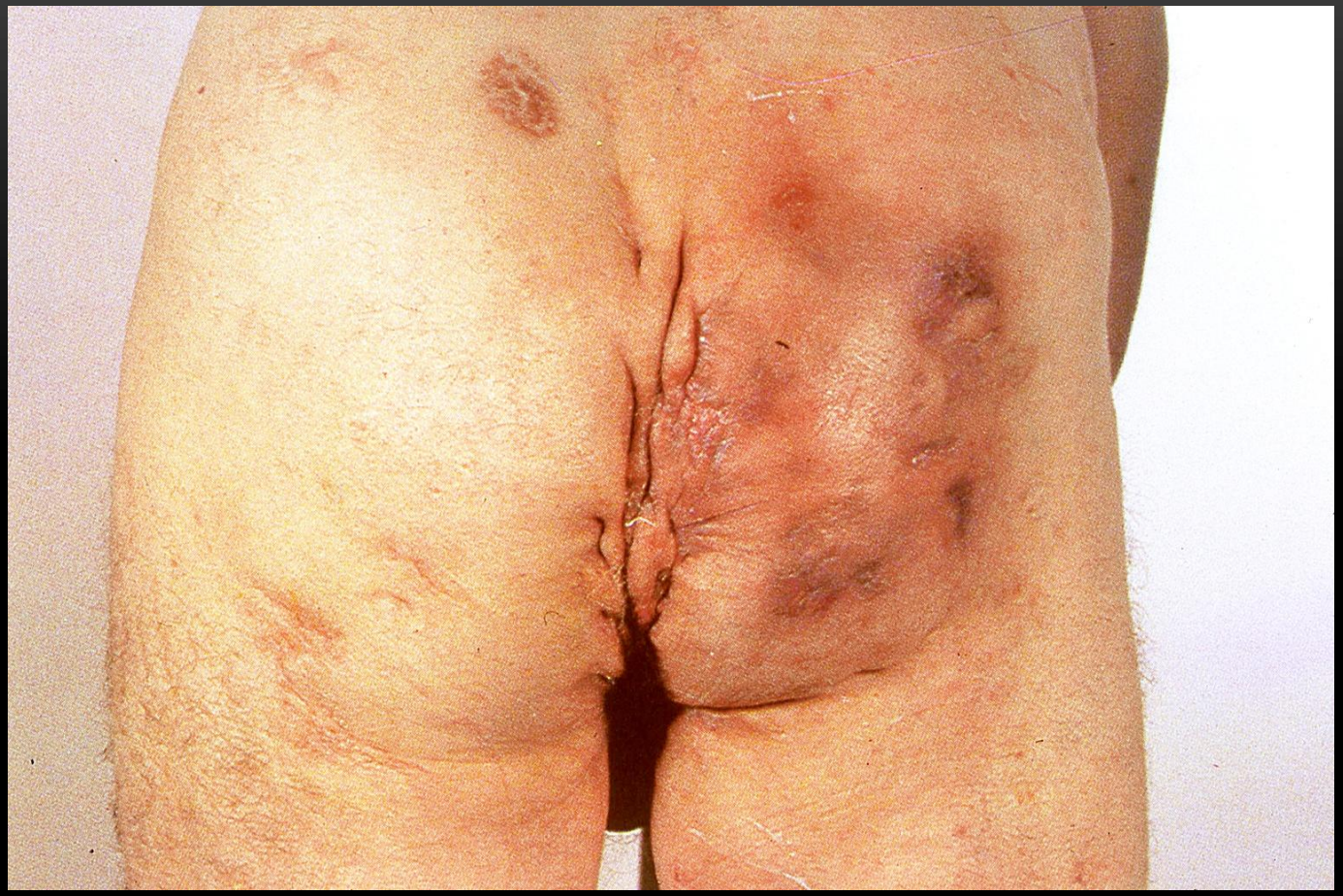
Cohn's disease.
Sjogren syndrome.
Irritable bowel syndrome.



Sinuses, nodules, scars



Double headed comedones



Scars , sinuses

MANAGEMENT

Medical :

-Intralesional triamcinolone acetonide for acute lesions

- Systemic antibiotics (erythromycin, minocycline)

- Retinoids like acitretin and Isotretinoin.

- Biological therapy.

Surgical:

-Incision and drainage of abscess better avoided

-Excision of sinus tracts and chronic nodules

-Complete excision of the area and grafting.

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