Derma Team 436

Acne and Acniform Eruptions

Objective of the lecture

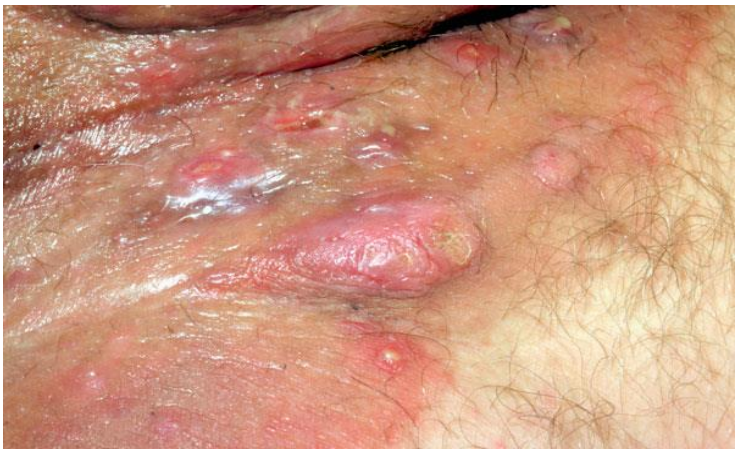
- To know the multiple pathogenetic mechanisms causing acne
- To recognize the clinical features of acne.
- To differentiate acne from other acniform eruptions such as rosacea.
- To prevent acne scars and treat acne efficiently.
- To recognize the clinical features of rosacea, it's variable types, differential diagnosis and treatment.
- To recognize the features of perioral dermatititis, differential diagnosis and treatment.
- To recognize the features of hidradenitis supprativa and treatment.

Team leader: **Ghada Alhadlaq**
Members: **Nourah Alhogail, Aseel Alsulimani**
Revised by: **Shrooq Alsomali**
Template by group B

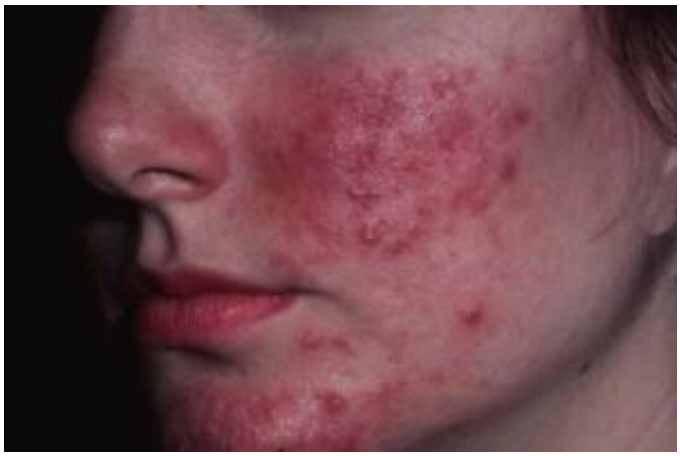
Before you start.. CHECK THE EDITING FILE

Sources: doctor's slides and notes + 436 group B team

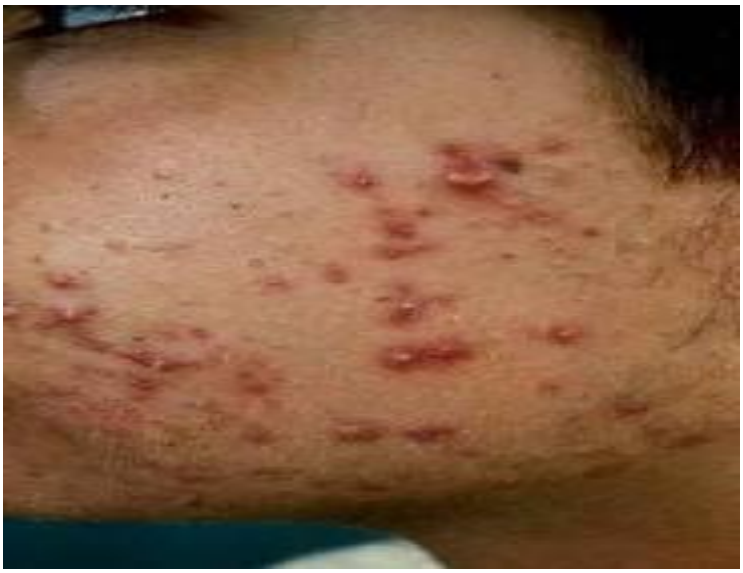
[Color index: Slides| Slides| Important|doctor notes|Extra]



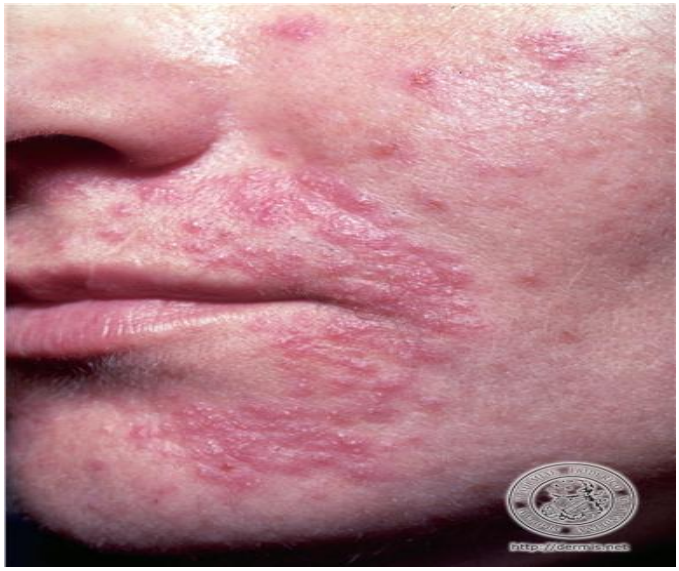
Hidradenitis supprative



Rosacea



Acne



Perioral dermatitis

A) ACNE

History of acne

Acne is an old disease, the problem dated back to the pharaohs in the Egypt 4000 years ago.
Acne is the disease of pilosebacous gland

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, 4% between 35-44.

Approach of acne:
Best describtion of pathogensis of acne: blockage, accumulation of sebum because of blockage
Could it be bacterial? Yes, because it is a good media for bacteria but NOT infectious
Genetic and hormonal factors? Yes (multifactorial)

Pathogenesis:

- Ductal cornification and occlusion (micro-comedo) due to altered keratinization. (micro-pathogenesis) This is why cleaning the skin is always advised.
- Increased sebum secretion (Seborrhoea).
- Ductal colonization with propioni bacterium acnes. It is a non-infectious inflammation.

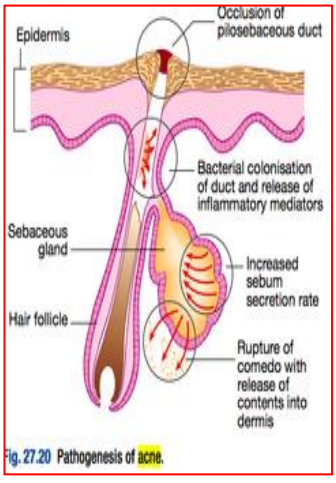
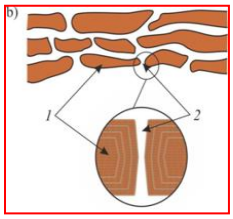


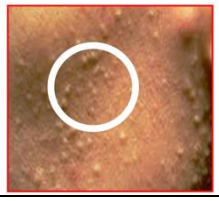
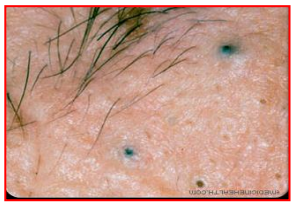
Fig. 27.20 Pathogenesis of acne.

- Rupture of sebaceous gland and inflammation.
- The first step is formation of micro-comedoes (the micro-pathogenesis), which causes blockage and accumulation of sebum, creating a good medium for bacterial growth and inflammation.

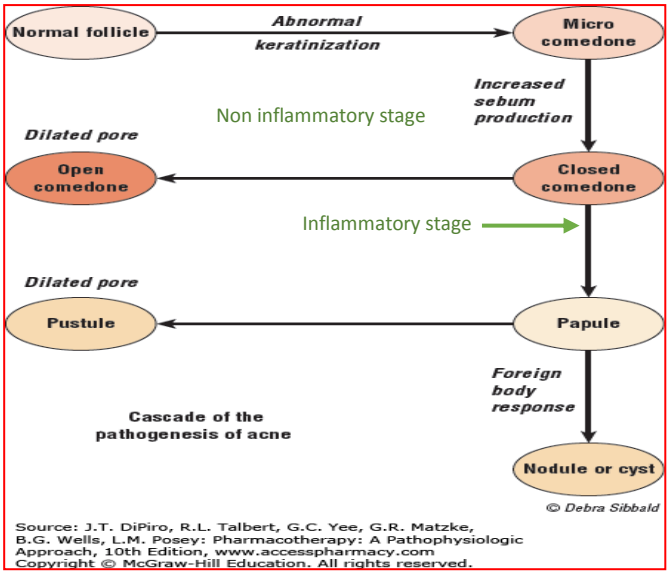
Specialized terms:



Microcomedone: Hyperkeratotic plug made of sebum and keratin in follicular canal.
Due to altered keratinization
Primary lesion: papule

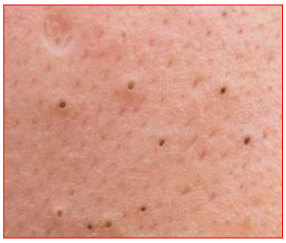
Closed Comedo (Whitehead):	Open Comedo (Blackhead):
Closed follicular orifice, accumulation of sebum and keratin 	• Opened follicular orifice packed with melanin and oxidized lipids. • It is open and exposed to oxygen, so it oxidizes the sebum and making it black. 

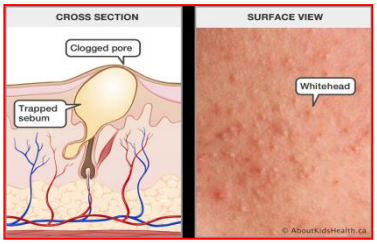
Important picture:



Clinical Features

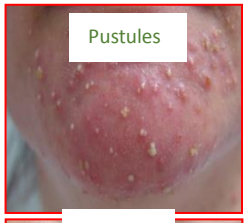
- Acne lesions are divided into:
- Inflammatory (erythematous papules, pustules, nodules, cyst)
- Non inflammatory (open, closed comedons).
- The comedons are the pathognomonic lesion.
- Seborrhoea.
- Post inflammatory hyper pigmentation .
- Scarring (Atrophic or Hypertrophic).
- The severity of acne is determined based on the distribution and the morphology (cyst, nodule, pustule).

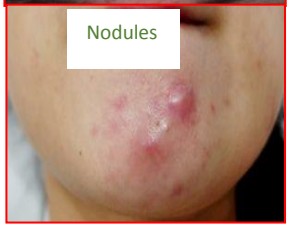


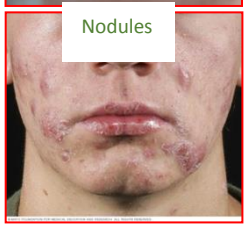


- Non inflammatory lesions
  Closed and open comedones

- **When follicles rupture into surrounding tissues they result in inflammatory lesions**:
  - Papules.
  - Pustules.
  - Nodules.



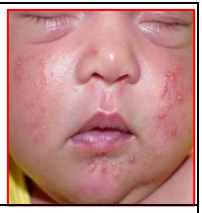
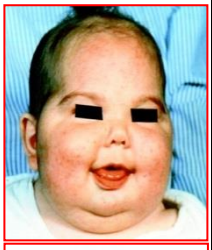
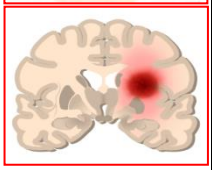
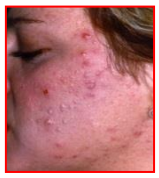
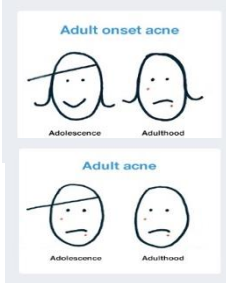


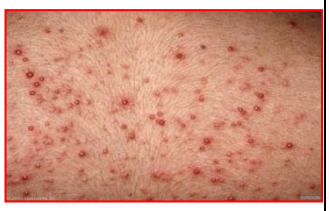
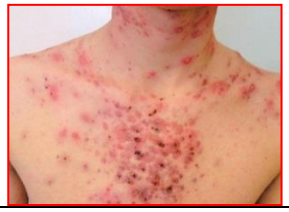
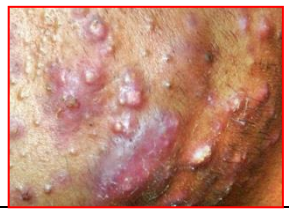
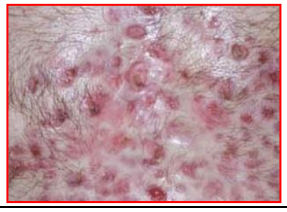
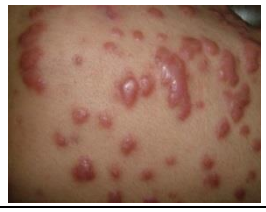
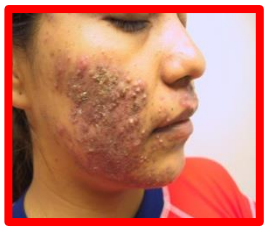
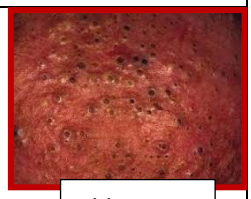
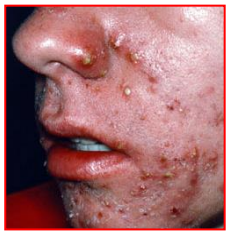
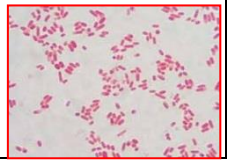


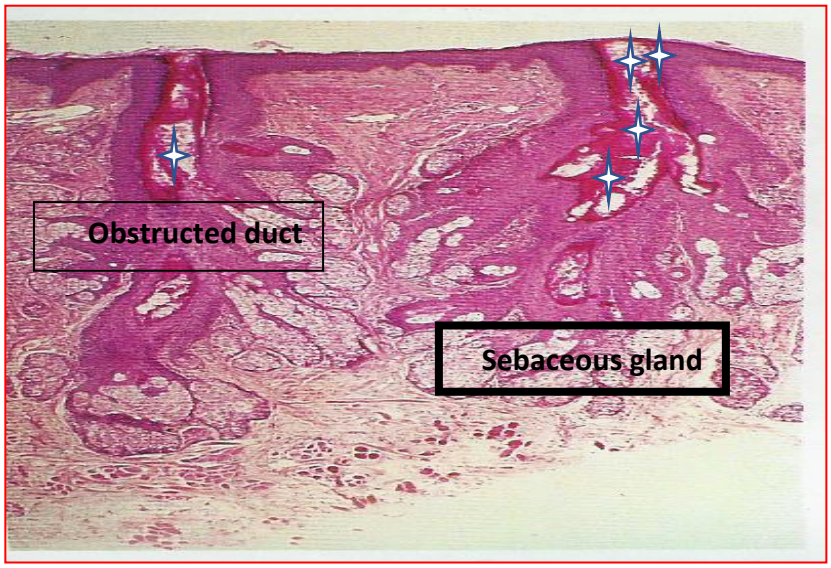
- Cysts.

- Lesions predominate in sebaceous gland rich regions (face, upper back, chest & upper arms). In areas of the pilosebaceous unit
- The severity of acne ranges from mild, moderate, severe according to the predominant lesion.
- Comedon predominance is considered to be mild, while extensive papulopustules and nodules or cysts are considered severe.

Acne Subtypes:

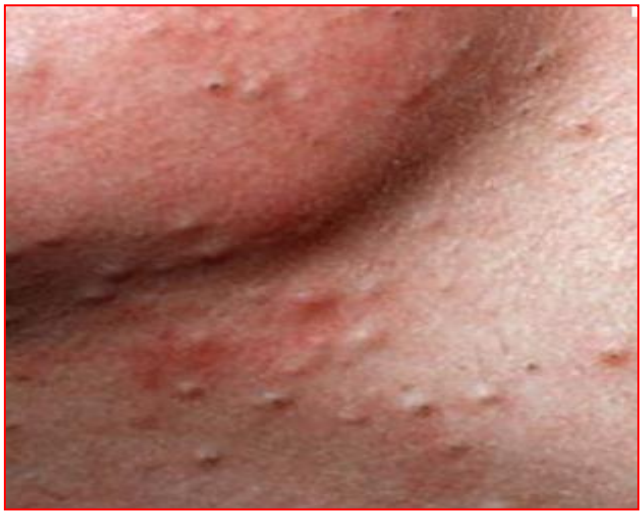
1- Neonatal Acne	• Onset between 0-6 w of age. Up to 8 • Characterized by closed comedons. • Resolve spontaneously within 1-3 months. • No relation with later development of acne. 
2- Infantile Acne	• Onset between 3-6 m. Up to 1 year • Characterized by inflammatory lesions. • Can be associated with precocious androgen secretion secondary to brain hamartoma and astrocytoma. • Think of hormonal issues that could continue with him throughout his life, must be treated. • Endocrinology examination (LH) and bone age is important. • There is increased risk of development of severe acne later in life.   
3-Teenage Acne	• More in boys. • Mainly comedonal. • May be the first sign of puberty. 
4- Adult Acne	• Affects adults above 25 years. • Can be continuation of teenage acne or start denovo. • IF associated with hirsutism, irregular periods evaluate for hyper secretion of ovarian androgens (e.g. Polycystic ovary syndrome). • More in females. • R/O: PCOS (ask about hirsutism + menstrual cycle) 

5-Drug Induced Acne	• Steroids, Iodides, Bromides, INH, Lithium, Phenytoin, Epidermal growth factor inhibitors (cetuximab) cause acniform eruption. • The characteristic feature of steroids acne is the absence of comedons and monomorphic lesions as small pustules and papules all looking alike • Mostly, males take steroids for sports and body building, females take steroids for skin whitening effects without prescription. 
6- Acne Conglobata	• Most aggressive. • Highly inflammatory; with comedons, nodules abscesses, draining sinuses, over the back and chest. • Often persist for long periods. • Affect males in adult life (18-30 years). • Heals with scars (Depressed or Keloidal). • **Most important:** leaves keloid scars.    
7- Acne Fulminans	• Sudden massive inflammatory tender lesions with ulceration • Heals with scaring. • Associated with fever, increased ESR &CRP, polyarthralgia, leukocytosis. Systemic involvement. • What are the risk factors? • How would treat? • **To differentiate it from acne conglobata:** Acne fulminans is acute with ulceration and systemic involvement. 
8- Occupational Acne Rare	• Due to contact with oils – tars –chlorinated hydrocarbons used in the synthesis of insecticides and solvents. • Lesions appear at site of contact including large comedons, papules, pustules, nodules. • The most serious form is the chloracne due to systemic effect (liver damage –CNS involvement, decrease lung vital capacity).  chloracne
9- Gram NegativeFolliculitis	• Infection with G –ve organisms (Klebsiella, proteus, E.coli). • Seen in patients under chronic antibiotic acne treatments. • Superficial pustules without comedons or even cysts involving from intranasal area to chin and cheeks. • Response to ampicillin, Isotretenoin, TMP-SM. Long-term tetracycline  

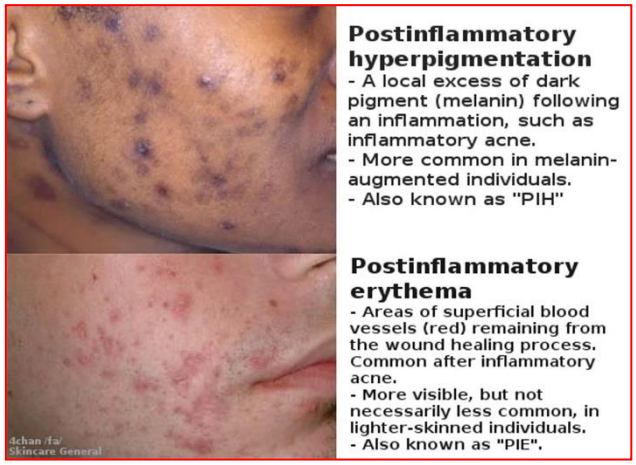


Obstructed sebaceous duct

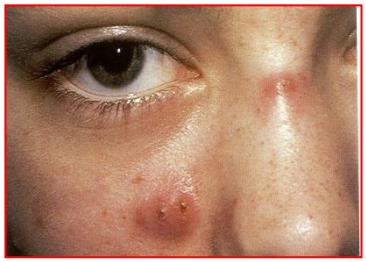
Filling of keratin



Closed and open comedones

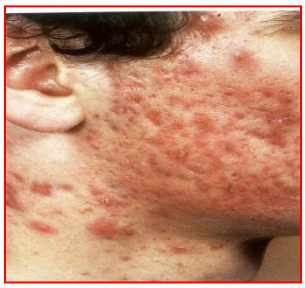


Marked post inflammatory hyperpigmentation and erythema

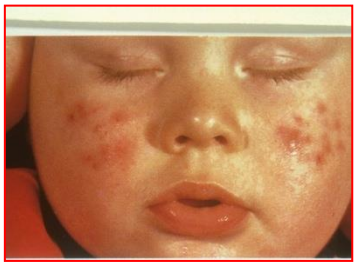


Nodules

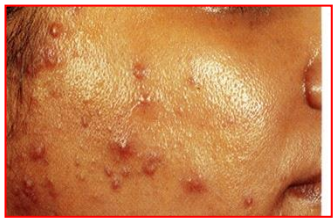
Moderate to severe



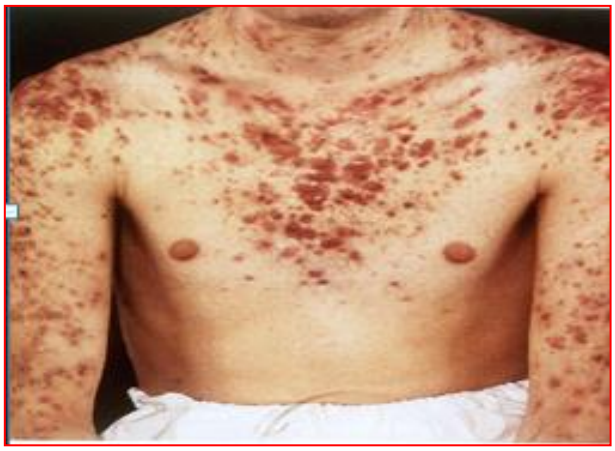
Acne conglobata with nodules and scars



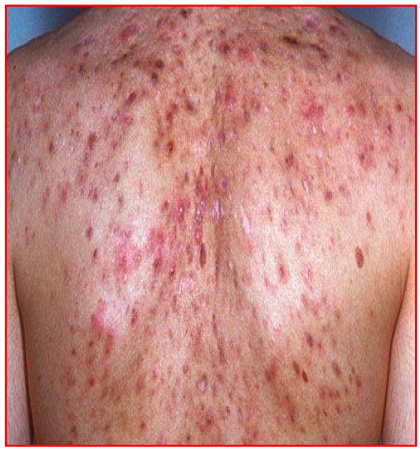
Neonatal acne

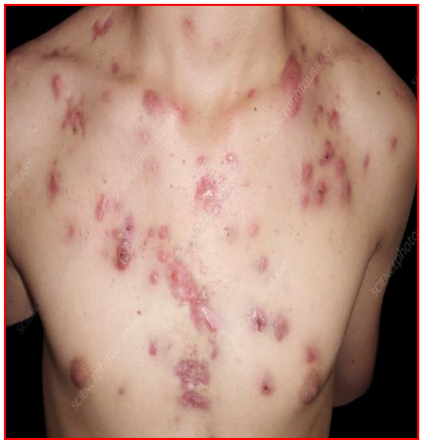


Seborrohea and papules , pustules

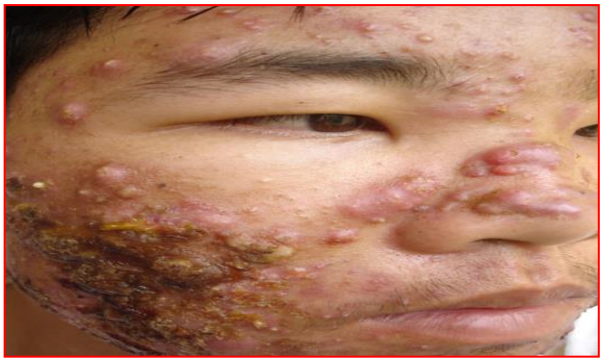


Nodules , Keloides



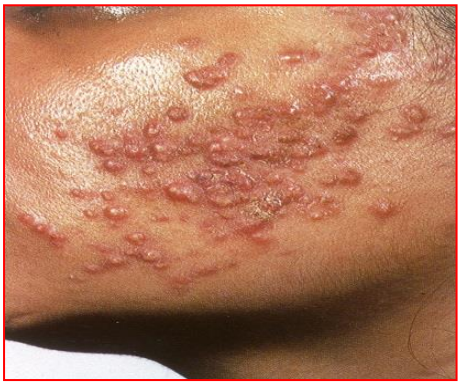


Acne conglobata
Nodules, Keloides, Sinuses, Scars



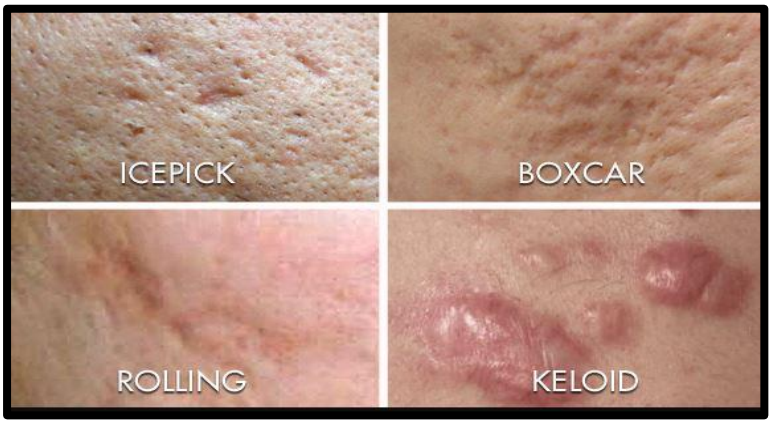
- **Acne fulminans** in 2 weeks with ulceration and clear exudates.
- **Nodules, pustules closed comedones,papules, pus .**

Acne icepick and boxcar scars
Deep scars not keloids

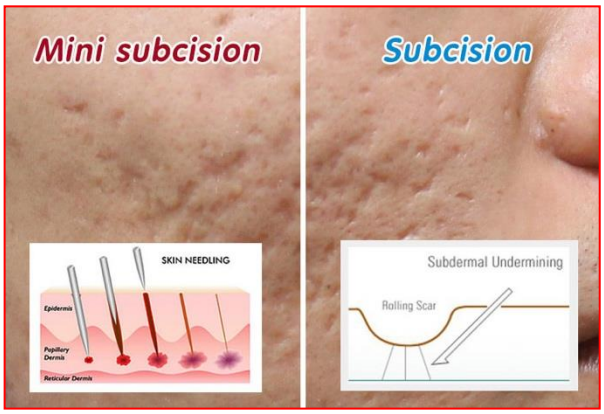


Monomorphic steroid acne
Same morphology Indicate drug induced. (pahognomic/diagnostic)

Hirsutism and acne

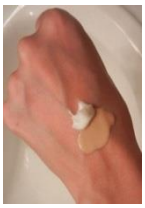


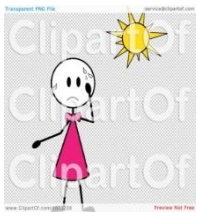
ACNE SCARS



Rolling acne scars

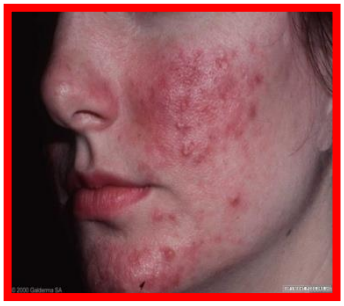
Aggravating Factors:



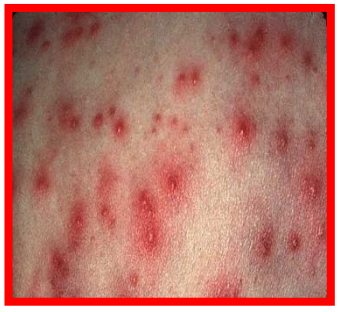


- **Diet has no relation to acne.** Imp There is no evidence
- **Pre menstrual flare.**
- **Sweating.** Hyegine.
- **UV radiation.**
- **Stress.**
- **Friction.**
- **Cosmetics.**

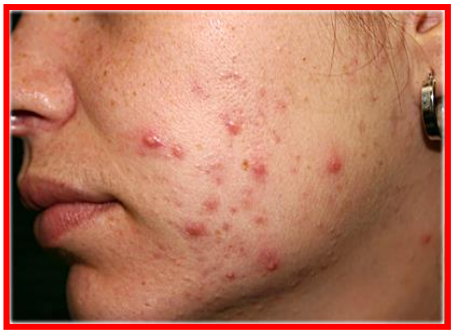
Differential Diagnosis:



Rosacea

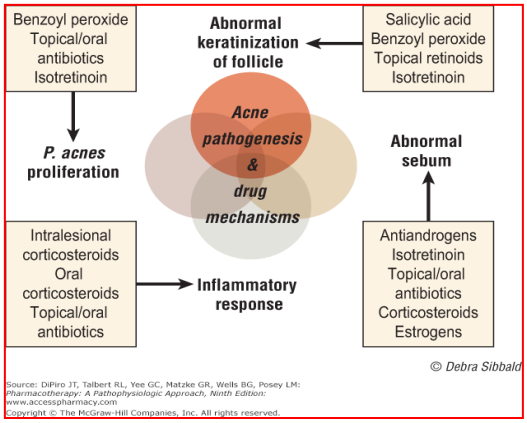


Folliculitis



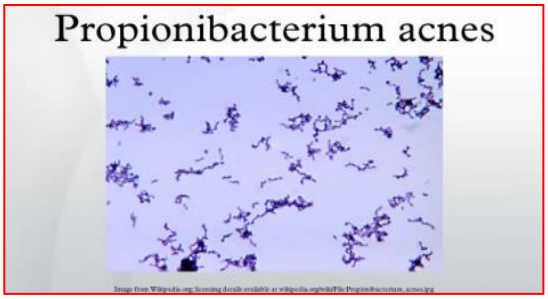
ACNE TREATMENT – Goals:

- Decrease scarring. Most important aim.
- 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 intra-follicular P.acnes.
- Decrease sebaceous gland activity.
- Decrease inflammation.



Treatment

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

Topical Therapy: (alter keratinization)

Benzoyl peroxide:

- High antibacterial activity.
- Drying effect.
- Could cause irritation and contact dermatitis.

Retinoic Acid:

- Comedolytic activity.
- Advice patient not to expose to sun as it may lead to burn.

Salicylic Acid:

- Comedolytic, less potent than retinoic acid.

Resorcinol and sulfur: are keratolytic.

Azeliac acid: antibacterial and bleaching.

- Topical treatment result is noticed within 2 months.

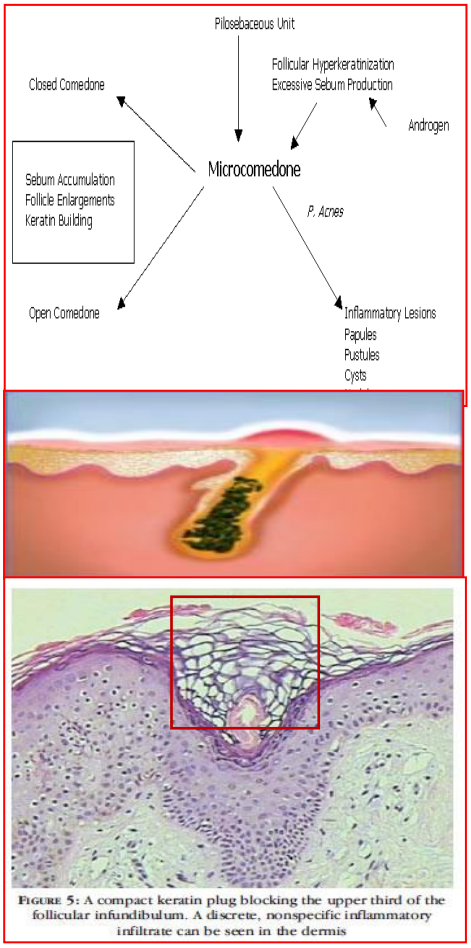


FIGURE 5: A compact keratin plug blocking the upper third of the follicular infundibulum. A discrete, nonspecific inflammatory infiltrate can be seen in the dermis

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"?** **Not given to children under 12 years old because it causes teeth discoloration.**
Erythromycin	**0.5 g BD**	**For pregnant women with bad acne**
azithromycin	**250mg**	**3 consecutive days/w for pregnant women**
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 membranous colitis**
Trimethoprim Sulphamethoxazole		**Used only in resistant cases .**
Isotretinoin	**0.5-1mg/kg**	**Give long term remission** **Given in resistant acne** **Not given to pregnant women.** **She can get pregnant 1-2 months after discontinuation of the drug.** **You need to monitor liver and lipid profile.**

Acne treatment:

Systemic Antibiotic:

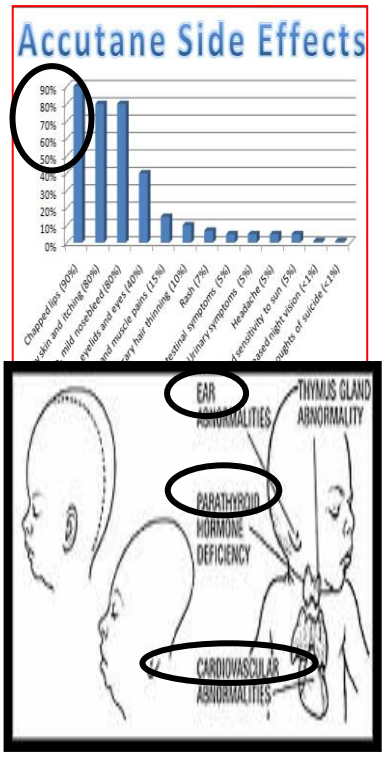
- Have to be used for 3 months to avoid resistance.

Hormonal:

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

Isotretinoin [Accutane]:

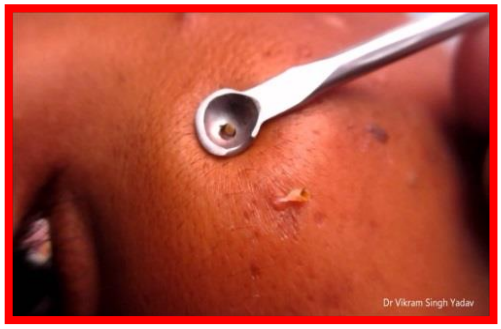
- Vitamin A analogue



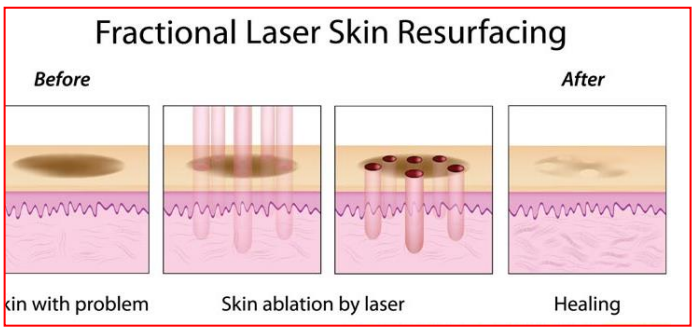
Side Effects of Isotretinoin:

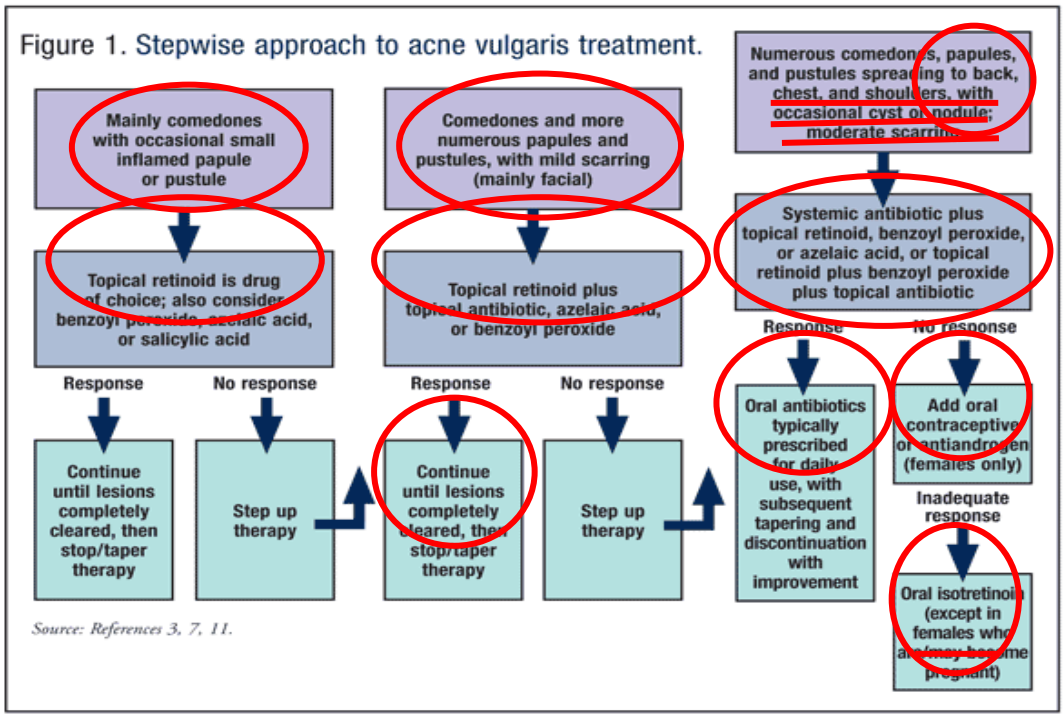
- Dryness of mucous membranes [Chelitis, Conjunctivitis].
- Headache and increased intracranial pressure [Pseudotumor cerebri].
- Isotretinoin should not be given with tetracycline.
- Contact lens intolerance.
- Bone and joint pains.
- Increases triglycerides and cholesterol or LFT.
- Patients should avoid pregnancy 4 w after discontinuation of drug because of teratogenicity.
- Depression and mood swings.

CROSS (chemical reconstruction of skin scars)



Comedo extraction



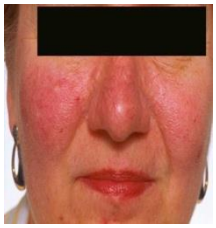


Take home massage:

- **A** avoid squeezing and manipulation.
- **C** comply with medication.
- **N** no cosmetics and moisturizers.
- **E** early treatment to avoid scaring.

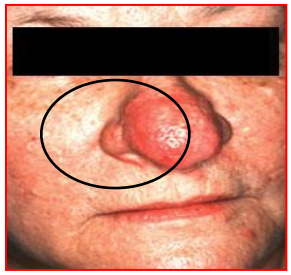
B) Rosacea:

Age of onset
Morphology
Central face (nose)



Definition:

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

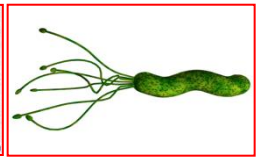


Incidence:

- 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:

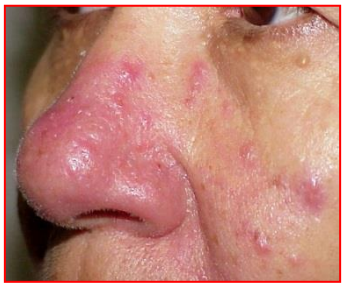
- Unknown.
- Genetic predisposition (38% have a relative).
- Sunlight and heat.
- Constitutional predispostion to flushing & blushing.
- Demodex folliculorum mite.
- H. Pylori infection.



Clinical Findings

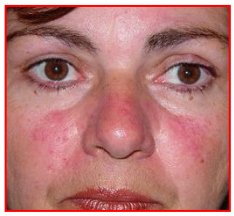
The Hall Mark Is:

- Episodes of flushing and erythema in butterfly distribution.
- Papules and pustules.
- Erythema and telangiectasia (irreversible dilation of peripheral capillaries) Telangiectasia is only in rosacea not acne.
- Absent comedons.
- Granulomas [firm papules].



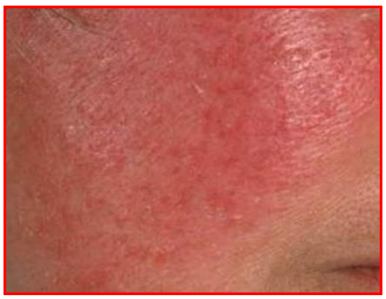
Localization:

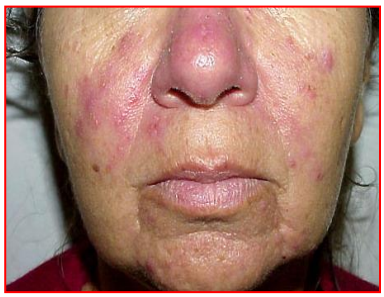
- The nose, cheeks, chin, forehead, glabella.
- May involve ears, chest.

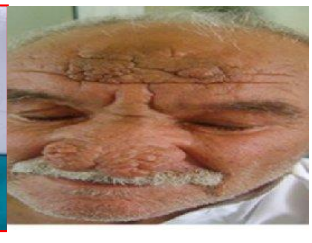


Types of Rosacea:

- Erythematotelangictatic.
- Papulopustular.
- Ocular.
- Phymatous.





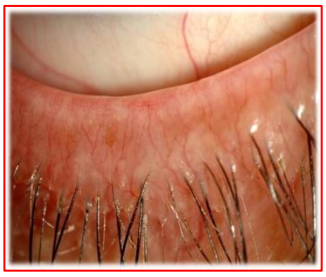


Complications:

Phymatous complication:

- **Rhinophyma:** Swelling of the nose due to sebaceous gland hyperplasia.
- **Other phymatous complications include**: gnathophyma, otophyma, blepharophyma and metophyma.

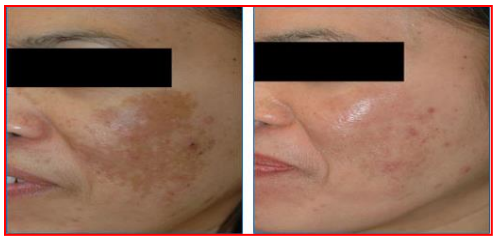
Eye complications:

- Occurs in 50% of cases including:
- Blepharitis.
- Conjunctivitis.
- Keratitis.
- Iritis.
- Eyelid telangi-ectasia.

Associated diseases:

MARSH syndrome:



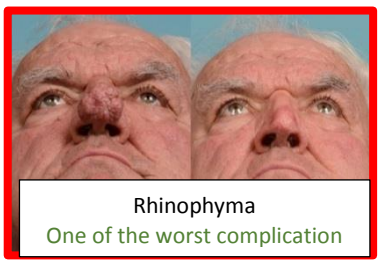
- Melasma.
- Acne.
- Rosacea.
- Seborrheic dermatitis.
- Hirsutism.

Triggers:

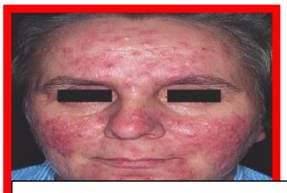
- Hot or cold temperatures, Wind.
- Hot drinks, Caffeine, Spicy food, Alcohol.
- Exercise.
- Emotions.
- Topical products that irritate the skin and decrease the barrier.
- Medications that cause flushing (nicotinamide).

Differential Diagnosis

- SLE (erythema only). SLE has telangiectasia + atrophy. In rosacea there is no atrophy.
- Acne (comedons).
- Seborrheic dermatitis no pustules
- Perioral dermatitis.

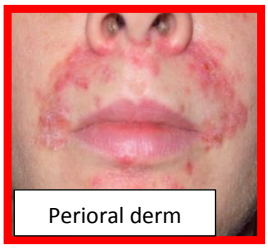


Rhinophyma
One of the worst complication

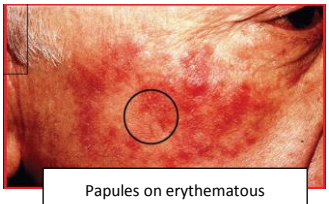


Papules on erythematous background

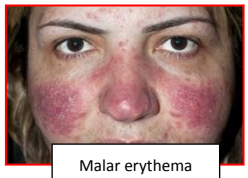
Telangictasia, papules , blepharitis , conjunctivites



Perioral derm



Papules on erythematous background , telangictasia



Malar erythema and scales

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.

Topical	Systemic
1.Topical antibiotics • Clindamycin. • Erythromycin.	Tetracycline reduces erythema.
2. Metronidazole (gel): Affects papules or pustules but no effect on erythema (most imp drug)	Oxy-tetracycline.
3. Imidazoles • e.g. Ketoconazole cream • Has anti-inflammatory action	Minocycline
4. 2-5% sulfur lotion,sulfacetamide	Doxycycline
5. Isotretinoin 0.1% in cream	Isotretinoin in resistant phymas cases (0.1 - 0.2 mg/kg)
Antiparasitic : Lindane, permethrin, Benzyl benzoate, Crotamiton ,ivermectin	Metronidazole 500 mg for 20-60 days
Sunscreen, Vascular laser, brimonidine α-adrenergic blocker	Azithromycin

Topical:

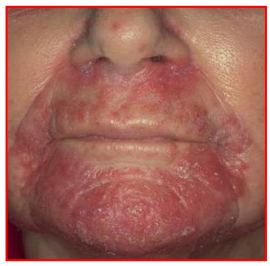
- Metronidazole gel 0.75%.
- Erythromycin 2% gel bid.

Systemic:

- Minocycline 100 mg bid till clear then taper.
- Doxycycline 100 mg bid then taper.
- Tetracycline 500 mg bid till clear and tapered.
- Anti H. pylori therapy.

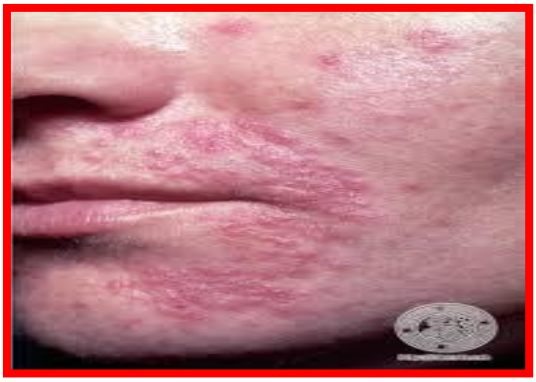
Take home massage:

R recognize triggers. Avoiding triggers could decrease it by 20-30%.
O ocular hygiene.
S sunblock.
A avoid hot food.
C comply with instructions.
E early treatment.
A avoid scrubs and harsh cleansers.

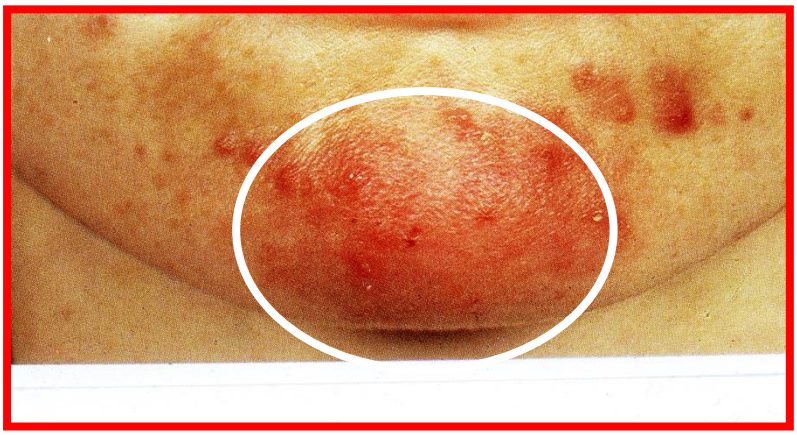


C) Perioral dermatitis: (know how to differentiate from acne)

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



Female with papules over chin



Papules , pustules, no comedones

Differential Diagnosis:

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

Atopic dermatitis

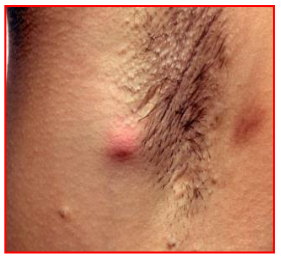
Allergic contact dermatitis

Treatment:

- Similar to acne but do not give isotretinoin (reserved for resistant cases).
- Wean patients of topical steroid.

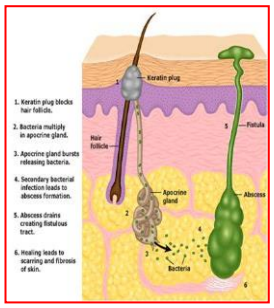
- Stop any moisturizers.
- In pregnant mild cases use topical antimicrobial therapy with metronidazole gel and erythromycin solution.
- Pimecrolimus cream in steroid induced perioral dermatitis.
- Topical anti acne medication like adaplene and azelaic acid.
- In severe cases oral doxycycline or minocycline .
- Isotretinoin for resistant cases.

D) Hidradenitis Supprativa:



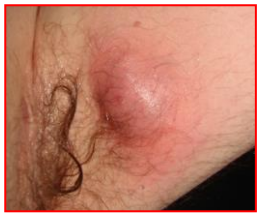
- Chronic recurrent supprative scarring disease of apocrine gland bearing skin (axillae, anogenital region, under female breast).
- Associated with obesity.
- Develops in 2nd and 3rd decades.

Pathogenesis:



- Unknown
- Apocrine duct occlusion.
- Dilatation and rupture of apocrine gland.
- Secondary bacterial infection with (Coagulase negative staphylococcus, anaerobes are often cultured) and draining sinuses. Bad situation.
- Genetic predisposition [38% have a relative affected].

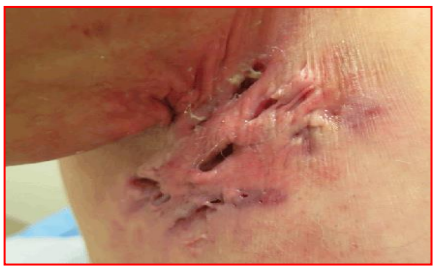
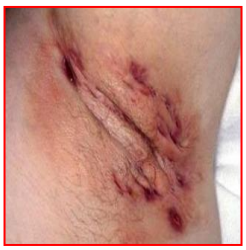
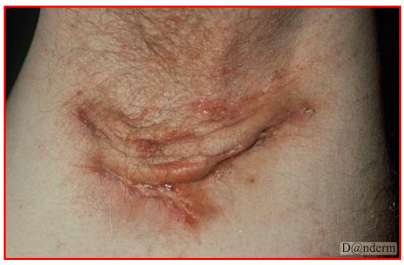
Clinical Presentation

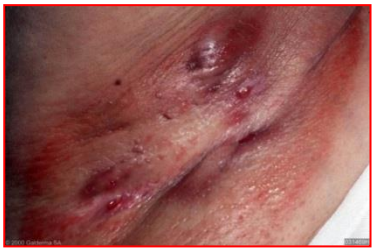


- Intermittent severe pain and tenderness.
- Pus drainage.
- Double headed comedons [characteristic lesion].
- Nodules, abscess, sinus tracts, scarring.
- Submammary, axillary , inguinal regions are common in females.
- Perineal involvement occurs more in males.

Appendix Table 3. **Hurley Stages**

Stage	Description
I	Abscess formation (single or multiple) without sinus tracts and cicatrization
II	Recurrent abscesses with tract formation and cicatrization; single or multiple, widely separated lesions
III	Diffuse or near-diffuse involvement or multiple interconnected tracts and abscesses across the entire area

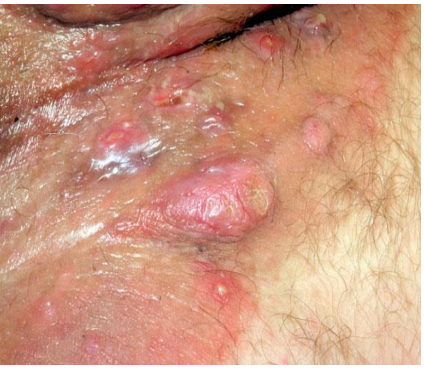


Bad findings: Fistulas, cysts, scars.

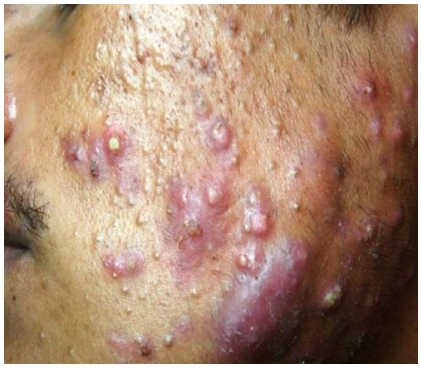
Associated findings

The follicular occlusion tetrad including:

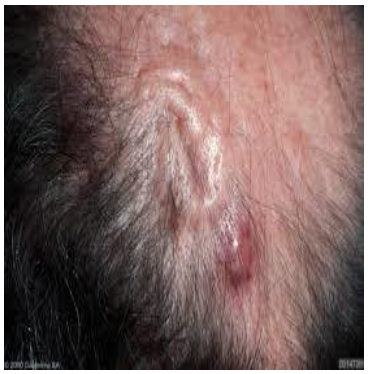
- Extensive acne vulgaris (conglobata variety).
- Perifolliculitis of the scalp.
- Pilonidal sinus.
- Crohn's disease in 39% of patients.
- Irritable bowel syndrome.
- Sjogren syndrome.



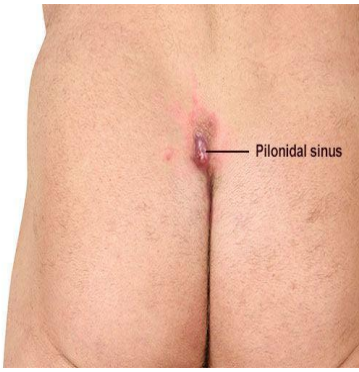
Hidradenitis supprativa

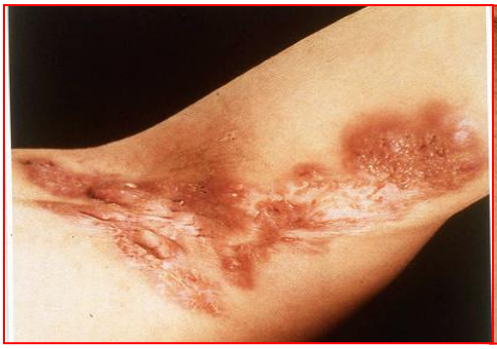


Acne conglobata

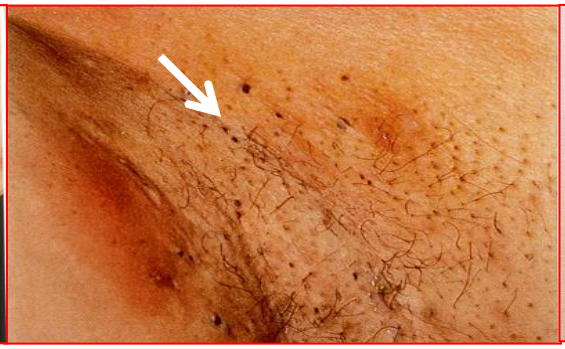


Perifolliculitis

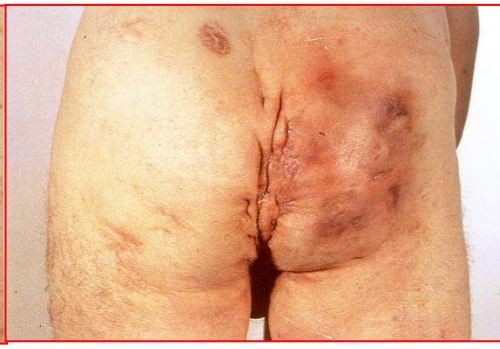




Sinuses, nodule,connecting tracts



Double headed comedones



Tracts , sinuses

Treatment:

General measures:

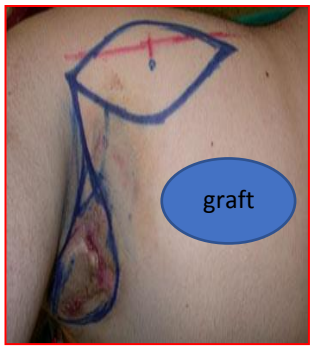
- Practicing proper hygiene.
- Using soaps and antiseptic and antiperspirant agents.
- Using warm compresses.
- Wearing loose-fitting clothing.
- Smoking cessation.
- Weight reduction.
- Pain management by paracetamol.

Medical :

- Intralesional triamcinolone acetonide for acute lesions
- Antibiotics (minocycline , doxycyclin clindamycin, rifampicin, metronidazole)
- Retinoids (Acitretin better than isotretinoin
- Antiandrogens.
- Biological therapy (infliximab, adalimumab)
- Basically, steroids or systemic antibiotics and biological therapy.

Surgical:

- Incision and drainage of abscess better avoided
- Excision of sinus tracts and chronic nodules
- Complete excision of the area and grafting.
- CO2 laser.



Questions:

1) **a patient has acne and with a resistant acne on topical antibiotic what would you give with antibiotic to enhance antibiotics role also f treat his condition**
   A. tretinoin
   B. benzoyl peroxidase
   C. azelaic acid

2) **Which of following makes diagnosis of acne vulgaris more likely over rose acne?**
   A. Mostly comedones
   B. Mostly papules
   C. Mostly pustules
   D. Mostly plaques

3) **Which of these findings favors a diagnosis of acne instead of rosacea?**
   A- Scarring
   B- Papules
   C- Pustules
   D- Erythema

4) **Which of the following dermatological disorders cause hypertrophy of sebaceous glands?**
   A. Rosacea
   B. Acne
   C. Atopic dermatitis

5) **A 30-year-old lady who has recently exposed to the sun and taking vitamin B6 supplements for over a year. She presented with episodic flushing, telangiectasia, few papules and pustules over both cheeks and forehead. The clinical picture is characteristic of which of the following diseases?**
   A. Rosacea
   B. Drug induced lupus
   C. Drug induced acne
   D. Folliculitis

1	2	3	4	5
B	A	A	A	A