INDIAN COUNTRY ECHO

LEADING THE WAY

Growing the Ability to Deliver Quality Healthcare to American Indian and Alaska Native People.

Acne

08/15/2023

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Overview

I. Epidemiology/Pathogenesis
II. Clinical evaluation
III. Management
IV. Case discussions

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Acne Epidemiology

- Estimated prevalence of acne vulgaris in adolescents: 85%
  - 20-39 yo: 20-51%
  - 40-50 yo: 12-26 %
  - Neonatal and infantile acne: 3%

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Acne Pathogenesis

- **#1** Infundibular Follicular Keratinocyte Hyperkeratinization + Abnormal Desquamation (Due to ↑ Cohesiveness) → **Follicular Plugging**
- **#2 Sebaceous Gland Hyperplasia + Sebum Production**: Androgens (DHT > Testosterone), Lipid Composition
- **#3 *Propionibacterium Acnes*** (GP Anaerobic Rod): Hydrolyze sebum triglycerides to free fatty acids
- **#4 Inflammation**
- Other: Comedogenic/Occlusive Agents, Corticosteroids, Anabolic Steroids, Neuroleptics, Lithium, Cyclosporine, High Glycemic Diet, Skim Milk

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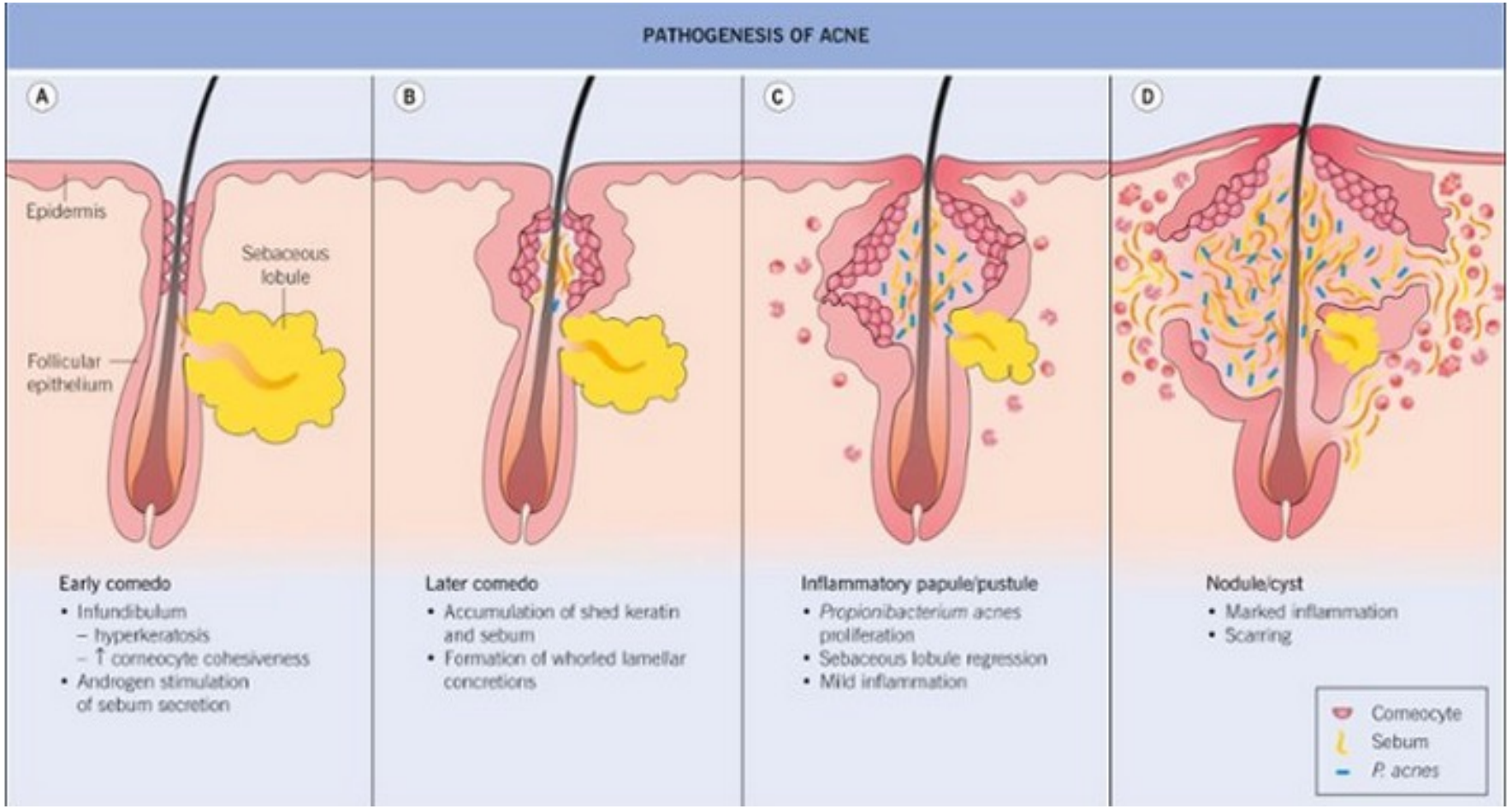
Acne Pathogenesis



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Acne Clinical Presentation

- **Comedones**: ~ 1mm Papules with Dilated Centrally Opening Filled with Keratin
  - **Open Comedo** (Blackhead): Blackened Keratin
  - **Closed Comedo** (Whitehead): Skin-colored
- **Inflammatory Papules, Pustules**
- **Nodules** (Inflamed, Indurated, Tender), **Cysts** (Deep-Seated with Pus + Serosanguinous), **Sinus Tracts**
- **Scars**:
  - **Hypertrophic**
  - **Atrophic**: Ice-Pick, Rolling, Shallow Boxcar, Deep Boxcar
- Distribution: Face (Often Cheek, Nose, Forehead, Chin), Ears, Neck, Upper Trunk, Upper Arms
  - **Adult Acne**: Mainly Women; **Lower 3rd Face, Jawline, Chin, Upper Neck**

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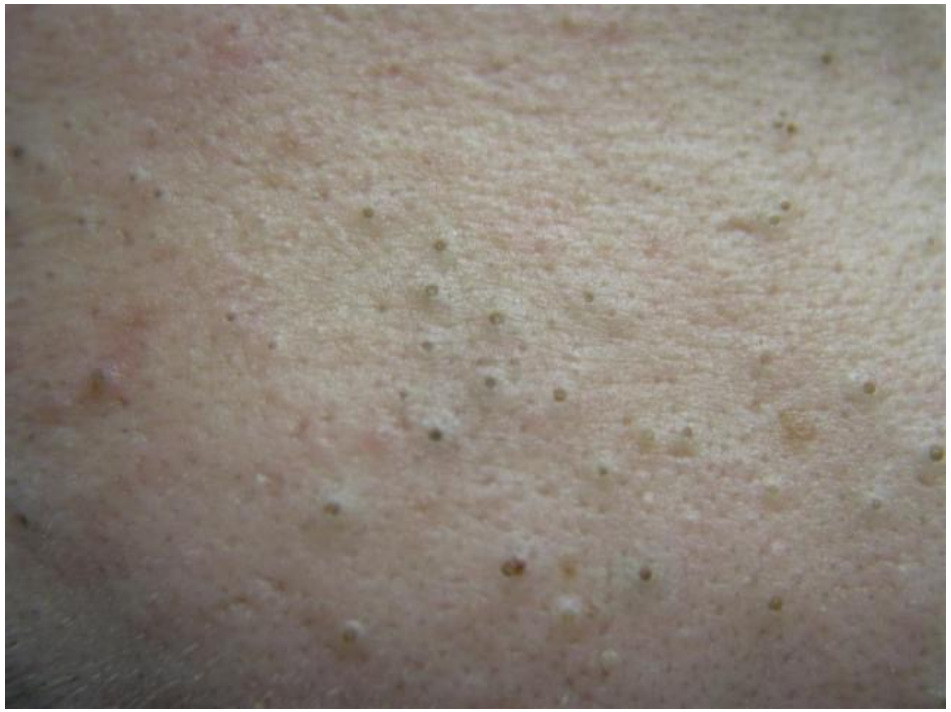
Open Comedones



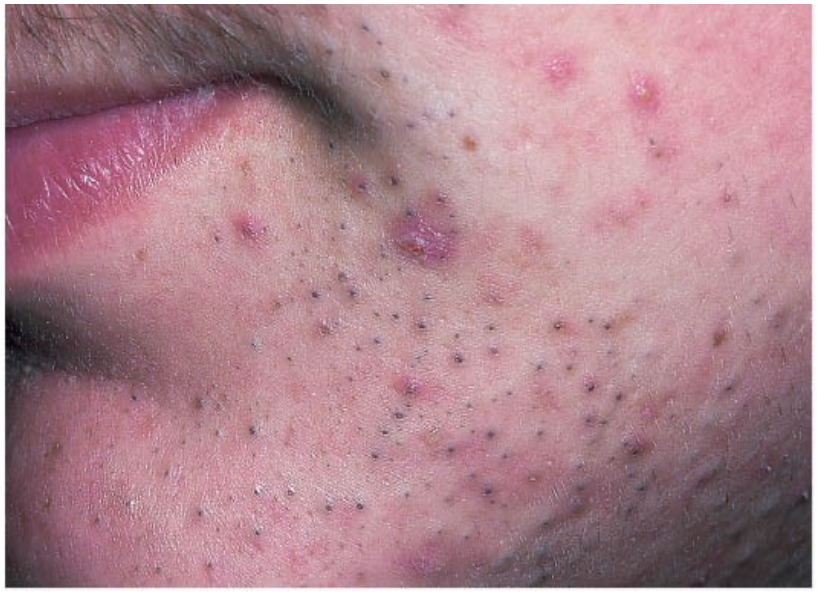


Fig. 13-1 Acne vulgaris, with comedones, on the chin.

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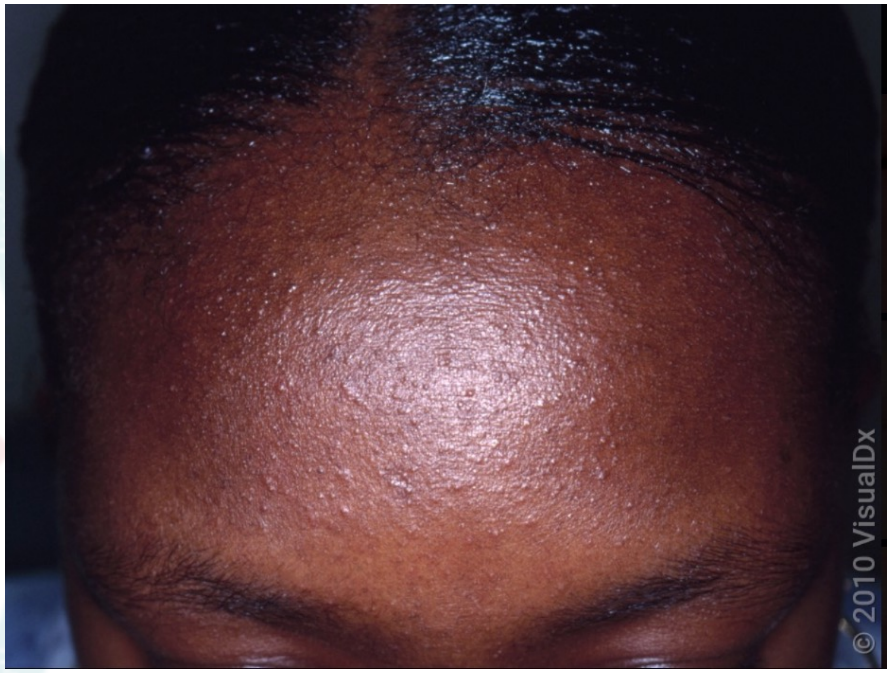
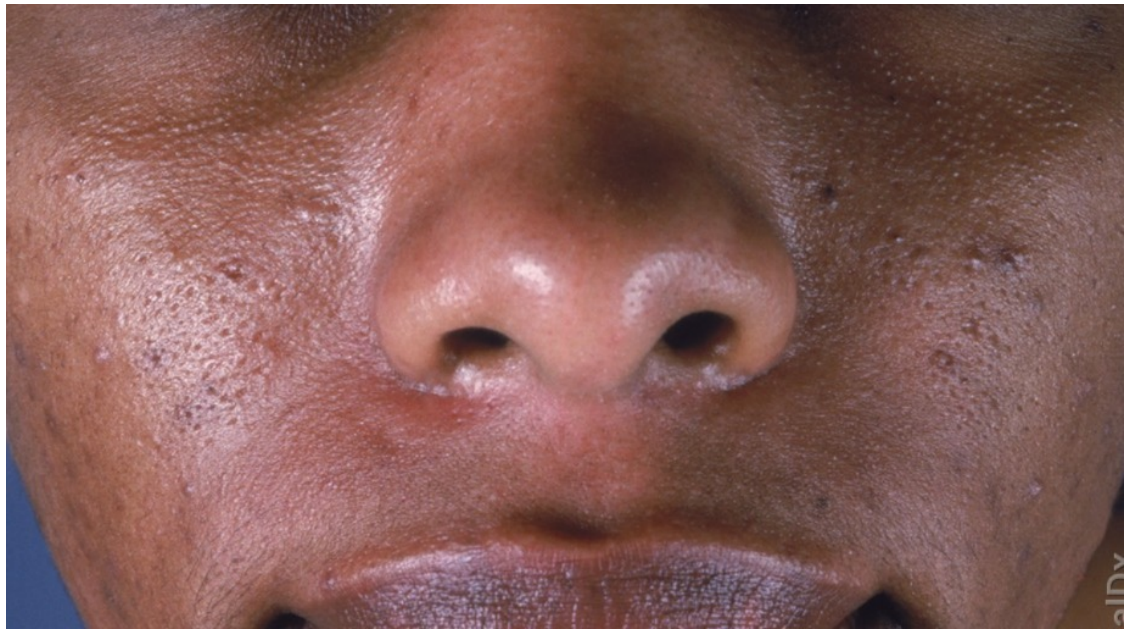
Closed Comedones





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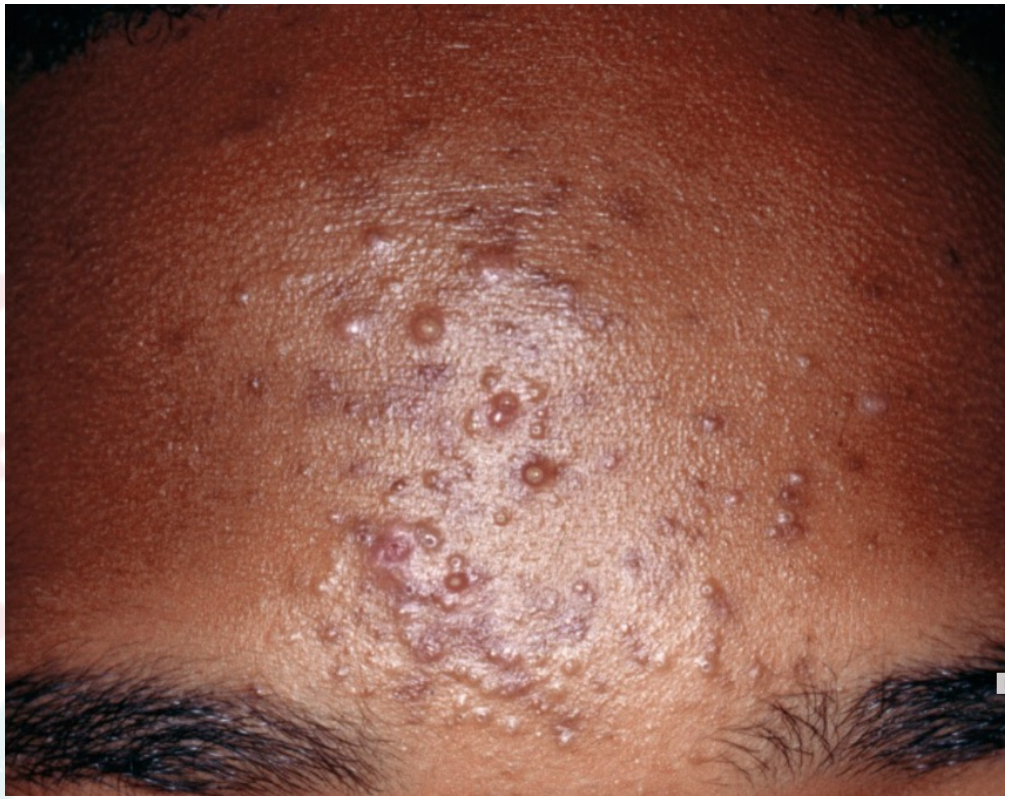
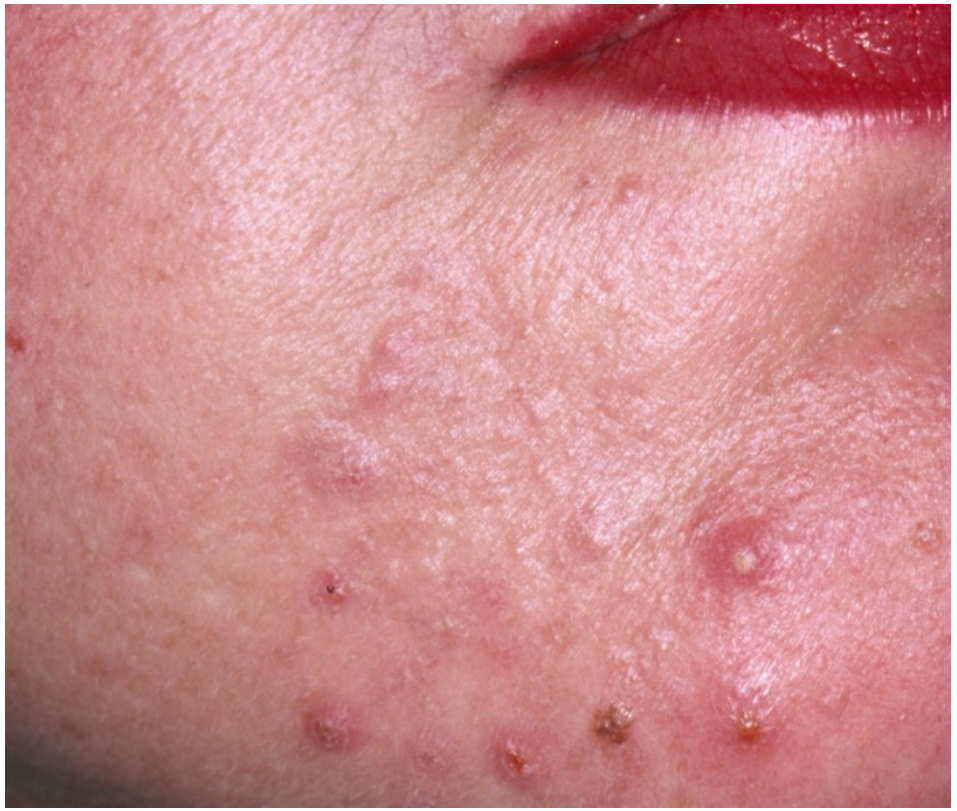
Inflammatory Papules & Pustules





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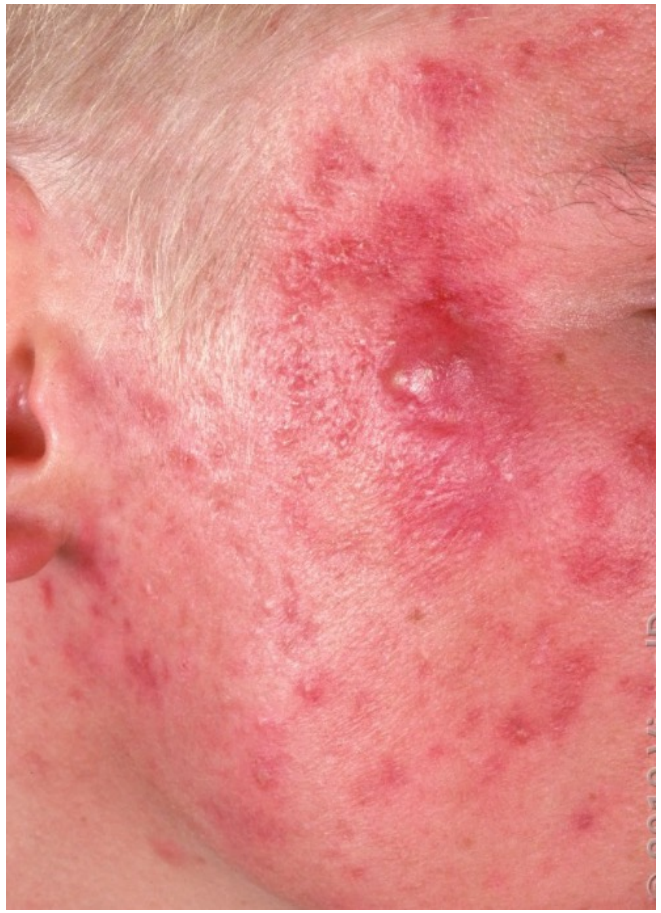
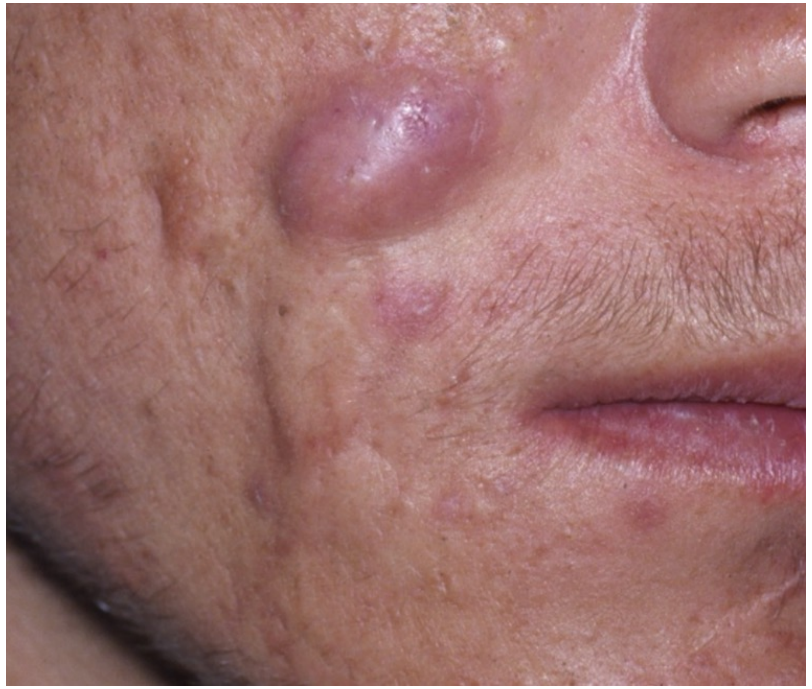
Nodules and Cysts





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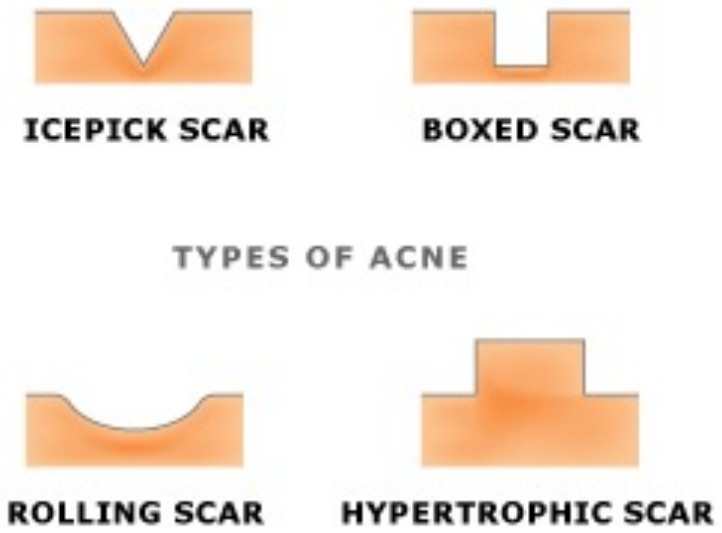
Scars & Post-Inflammatory Hyperpigmentation



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Evaluation

- Obtain History: Topicals, Cosmetics, Medications, Triggers (Menses, Diet)
- Grade Acne Type + Severity
- Ddx:
  - Rosacea
  - Periorificial dermatitis
  - Pseudo-folliculitis barbae
  - Facial angiofibroma in tuberous sclerosis
  - Sebaceous hyperplasia
  - Drug-induced acne
- Red Flags:
  - If Sudden Onset | Refractory | **Clinical Hyperandrogenism (Hirsutism, Irregular Menses, Androgenetic Alopecia,** Deep Voice, Muscular Habitus, Clitoromegaly, Increased Libido, Acanthosis Nigricans)
  - Mid-Childhood acne: **onset between 1-7 years of age**

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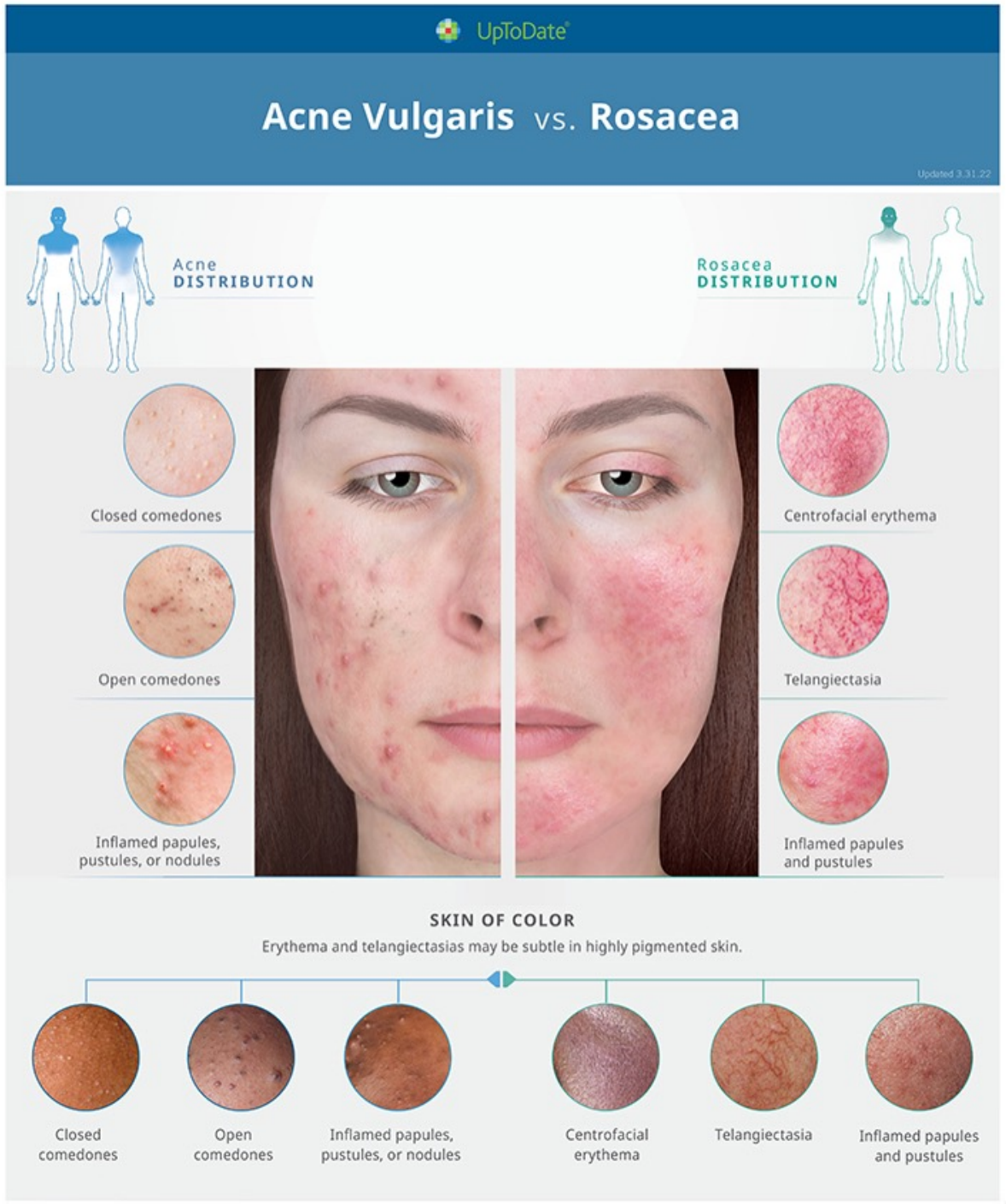
OTHER FEATURES: Acne Vulgaris

- Most prevalent in adolescents and young adults
- Variable distribution on face
- Frequent shoulder, chest, and/or back involvement
- Sequelae of postinflammatory hyperpigmentation, postinflammatory erythema, and scarring
- Association with hyperandrogenic disorders (eg, polycystic ovarian syndrome)

OTHER FEATURES: Rosacea

- Most prevalent in adults >30 years old
- Centrofacial distribution (cheeks, nose, chin)
- Ocular involvement (eg, symptoms of eye irritation, eyelid erythema, conjunctival injection, crusting, recurrent hordeolum or chalazion)
- Sensitive skin
- Flushing



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Evaluation

TABLE 2. Comprehensive Acne Severity Scale (CASS)

GRADE		DESCRIPTION
Clear	0	No lesions to barely noticeable ones; very few scattered comedones and papules
Almost clear	1	Hardly visible from 2.5 meters away; a few scattered comedones and a few small papules; and very few pustules, comedones, and papules
Mild	2	Easily recognizable; less than half of the affected area is involved; many comedones, papules, and pustules
Moderate	3	More than half of the affected area is involved; numerous comedones, papules, and pustules
Severe	4	Entire area is involved; covered with comedones, numerous pustules and papules, a few nodules and cysts
Very severe	5	Highly inflammatory acne covering the affected area, nodules and cysts present

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Management

	Mild	Moderate	Severe
1st Line Treatment	Benzoyl Peroxide (BP) or Topical Retinoid -or- Topical Combination Therapy** BP + Antibiotic or Retinoid + BP or Retinoid + BP + Antibiotic	Topical Combination Therapy** BP + Antibiotic or Retinoid + BP or Retinoid + BP + Antibiotic -or- Oral Antibiotic + Topical Retinoid + BP -or- Oral Antibiotic + Topical Retinoid + BP + Topical Antibiotic	Oral Antibiotic + Topical Combination Therapy** BP + Antibiotic or Retinoid + BP or Retinoid + BP + Antibiotic -or- Oral Isotretinoin
Alternative Treatment	Add Topical Retinoid or BP (if not on already) -or- Consider Alternate Retinoid -or- Consider Topical Dapsone	Consider Alternate Combination Therapy -or- Consider Change in Oral Antibiotic -or- Add Combined Oral Contraceptive or Oral Spironolactone (Females) -or- Consider Oral Isotretinoin	Consider Change in Oral Antibiotic -or- Add Combined Oral Contraceptive or Oral Spironolactone (Females) -or- Consider Oral Isotretinoin

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Topicals

1. Retinoids: Normalize Follicular Desquamation, Anti-inflammatory, Anti-hyperpigmentation

- **Adapalene (OTC) < Tretinoin < Tazarotene**

2. Benzoyl Peroxide: Bactericidal, Comedolytic

3. Macrolides: Antibacterial

- **Clindamycin | Erythromycin – use with BPO**

4. Dapsone: Antibacterial, Anti-inflammatory – **do not use with BPO**

5. Sulfacetamide: Anti-inflammatory

- Cannot use in pt with sulfa allergies

6. Azelaic Acid: Antibacterial, Anti-inflammatory, Anti-hyperpigmentation (okay for pregnancy)

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Acne Oral Antibiotics

- Oral Tetracyclines: Anti-inflammatory, Antibacterial
  - **Doxycycline 50-100 mg PO 1-2x Daily**
  - **Minocycline** 50-100 mg PO 1-2x Daily
- Others
  - **Sulfamethoxazole-trimethoprim** 800/160mg 1 Tablet PO BID
  - **Amoxicillin 500 mg PO 2-3x Daily** (safe in pregnancy)
- **Start at High Doses**; **At Least 4-6 Weeks to Judge Efficacy**
- **Usage duration: 3-6 Months**

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Acne Oral Hormonal Therapy

- **Spironolactone:** Androgen Receptor Blocker
  - 50-100 mg PO BID (maximum dose 200mg daily)
  - 3 Months to Judge Efficacy
  - Monitoring K level is typically not needed unless the patient has underlying renal dysfunction or on other medications that can synergistically increase K level

- **Combination Oral Contraceptive Pills:** ↓ Endogenous Androgens, Free Testosterone; ↑ Sex Hormone-Binding Globulin

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Acne Oral Retinoids

- **Isotretinoin:** Sebocytes Apoptosis, Normalize Follicular Desquamation, Antimicrobial (Indirect)
  - Side effects: dry skin/eyes/lips, hair loss, muscle aches
  - More inconvenient for patients
    - Enroll in iPLEDGE
    - Requires blood work and monthly visits
    - Patients of Childbearing Potential Required to Use 2 Forms of Contraception

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Acne Case #1

A 19-year-old female patient presents to clinic for evaluation and treatment of acne

Onset: ~13 years of age

Prior treatments: Over the counter acne wash, but due to dryness, she was not able to use it every day

Worse with menstrual cycles

PMH: N/A

Allergies: Allergic (urticaria) to sulfa-based medications

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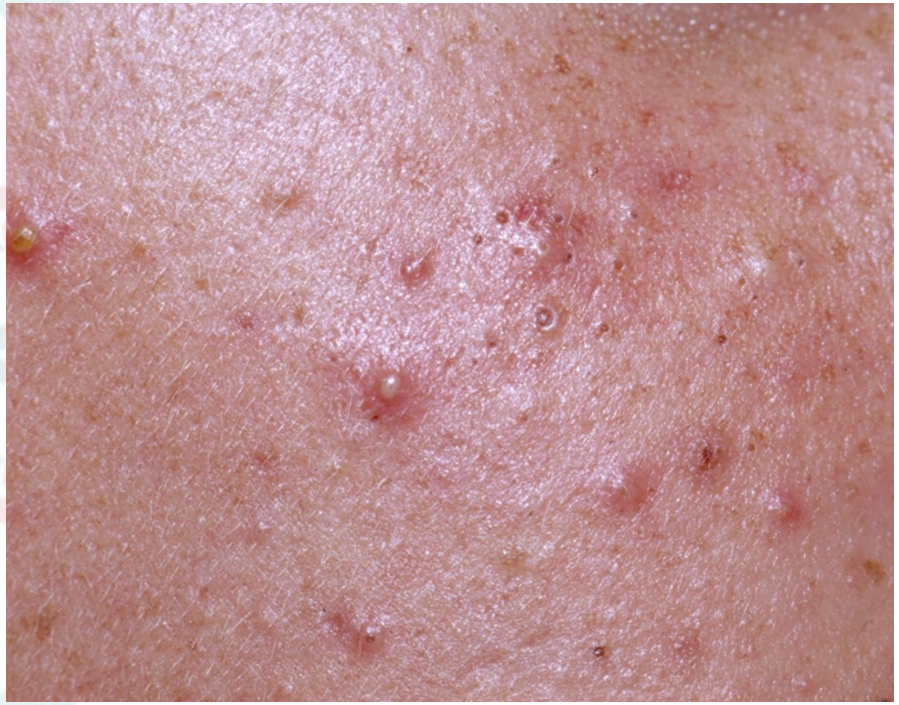
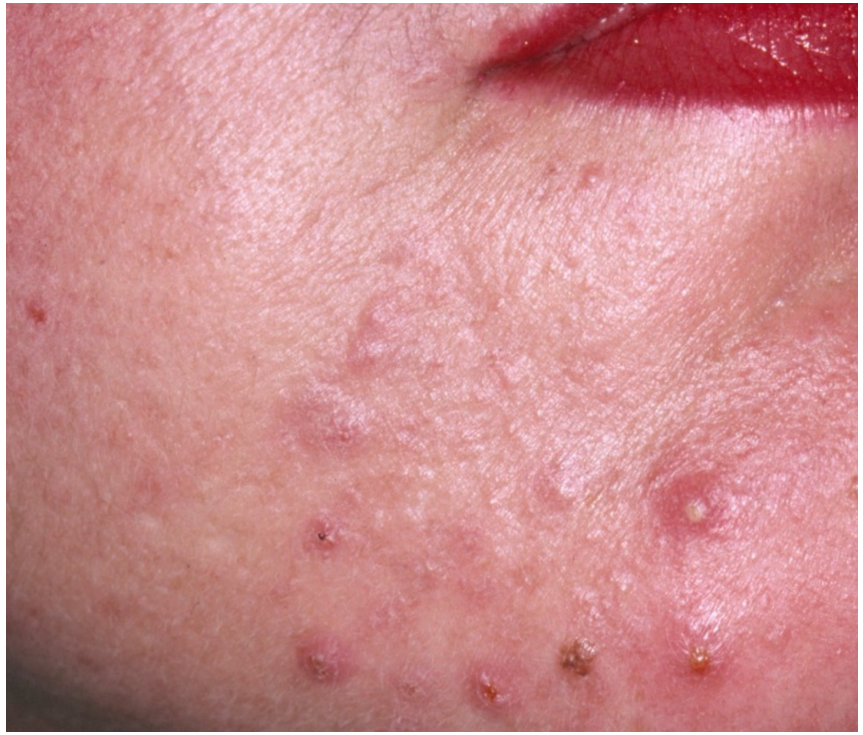
Acne Case #1





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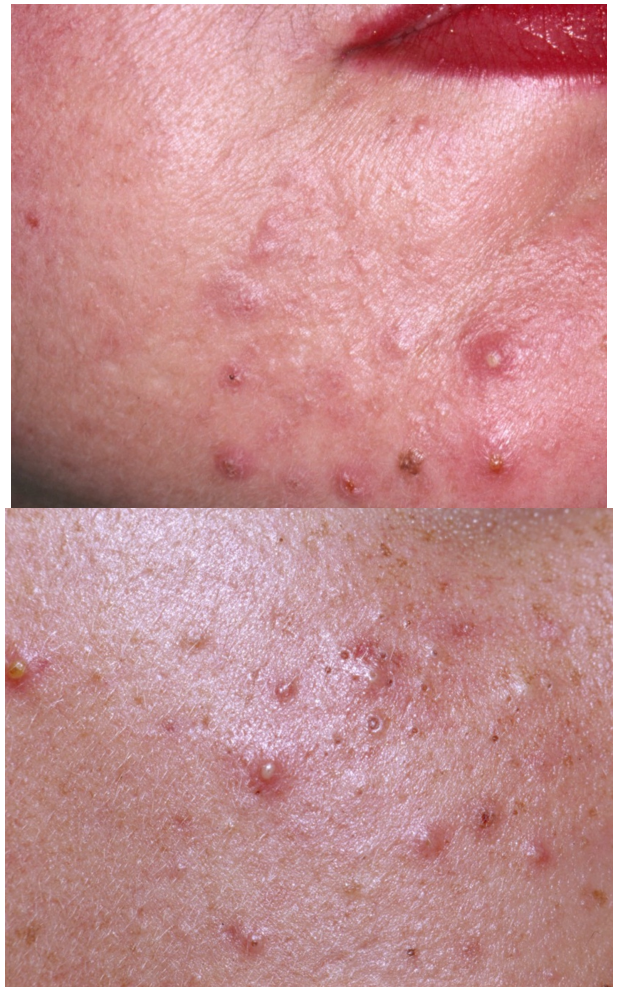
Acne Case #1

- Acne type and severity?
- Treatment?



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Acne Case #2

23 yo male patient presents for evaluation and treatment of acne.

Painful acne for many years

No current therapy

Very bothered by symptoms and appearance/scars

He was previously treated with doxycycline years ago, but experienced diarrhea with it and is not interested in doing doxycycline again

PMH: N/A

Sx: Endorses alcohol use

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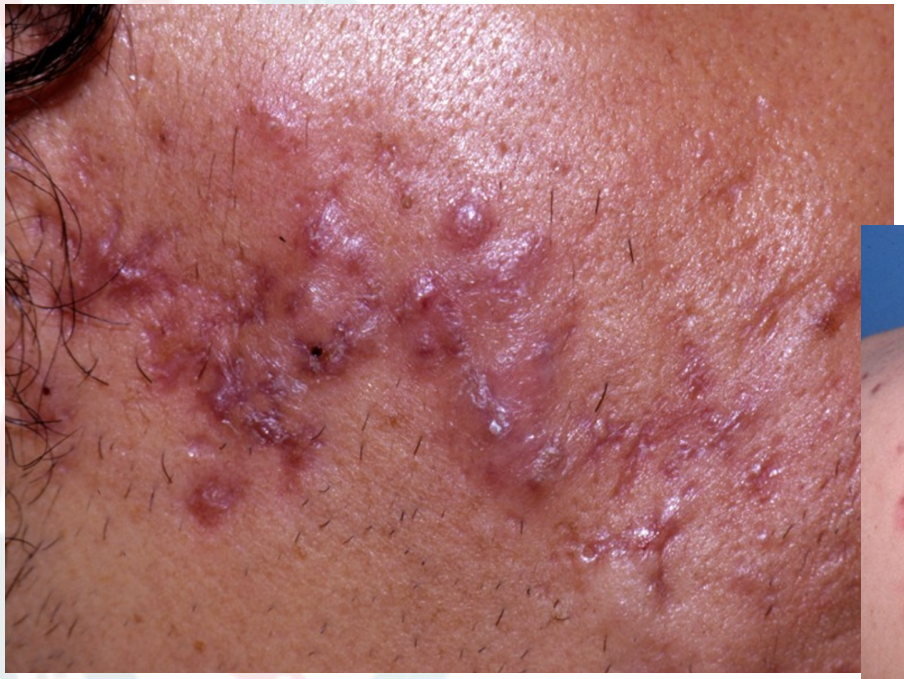
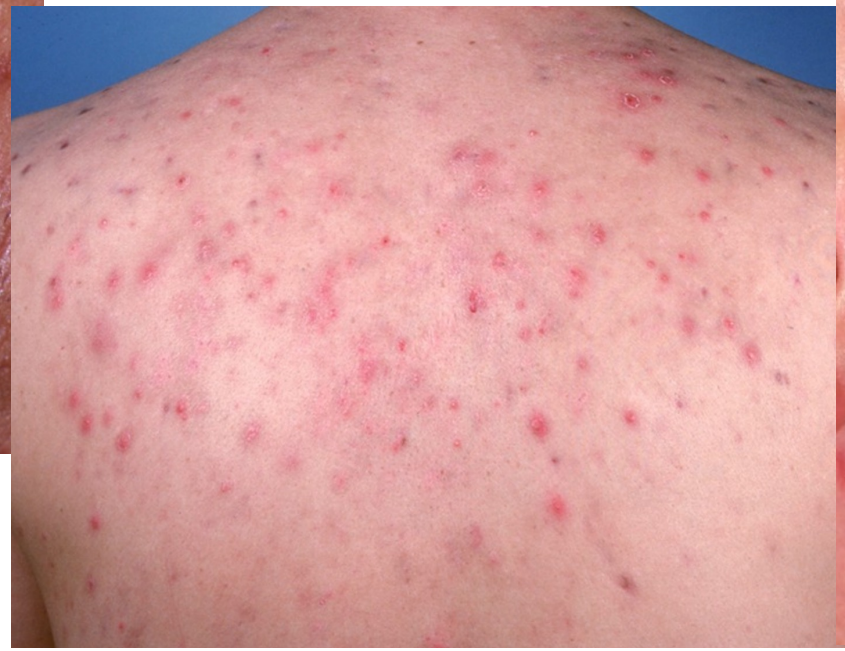
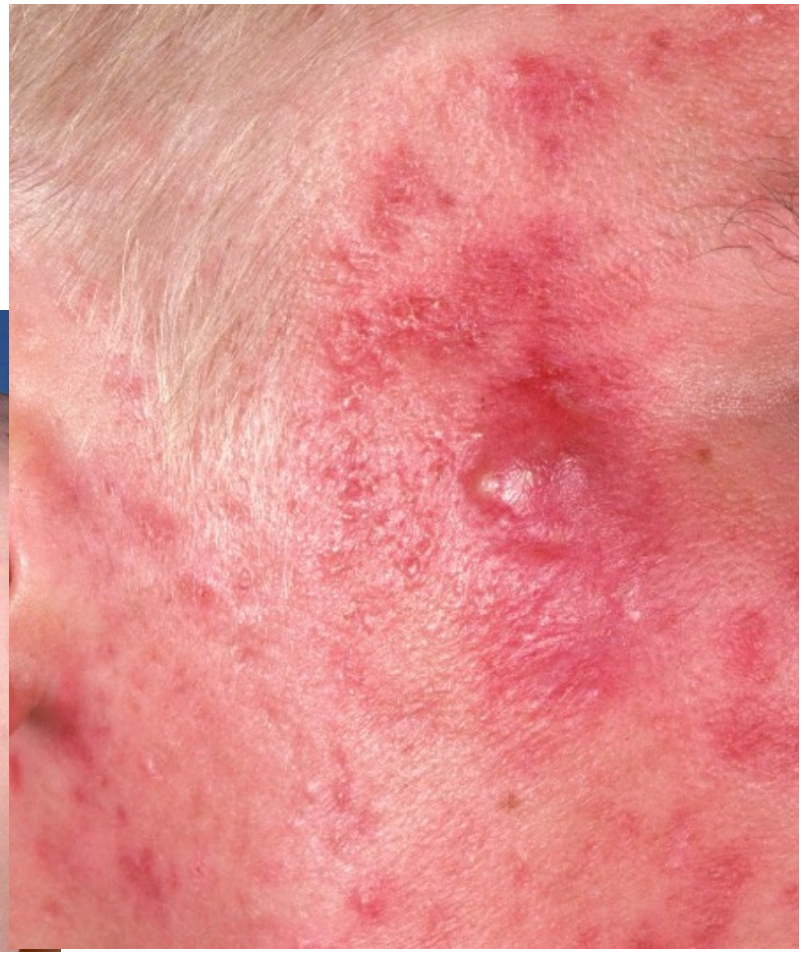
Acne Case #2







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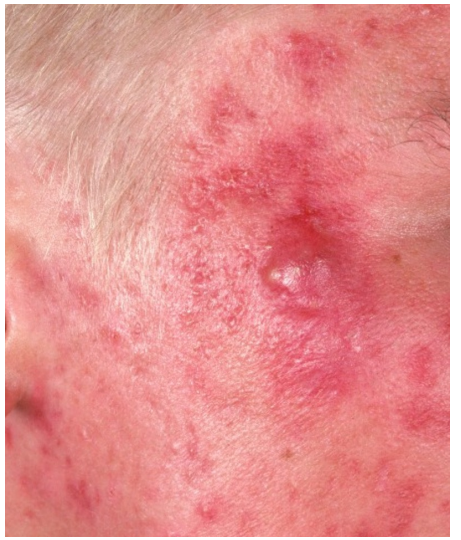
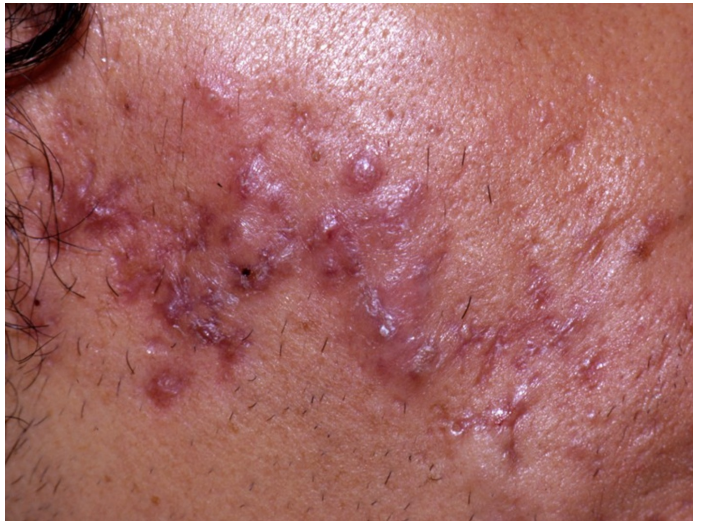
Acne Case #2

- Acne type and severity?
- Treatment?





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Thank You!

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