Acne and Other Facial Rashes

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Disclosure

I have no financial interests or relationships to disclose.

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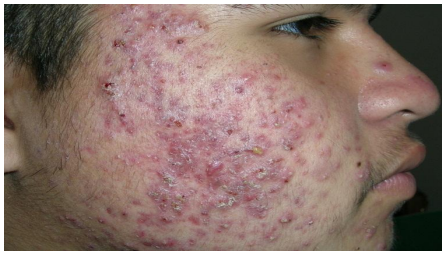
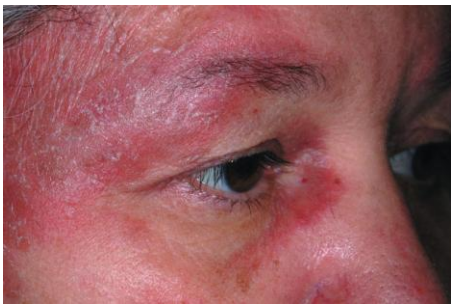
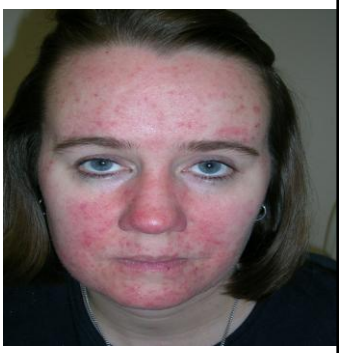
Acne and Other Facial Rashes

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Objectives

1) Recognize different types of facial rashes
2) Discuss how to individualize acne treatment for patients by type of acne and severity.
3) Distinguish rosacea and seborrhea from other causes of red rashes on the face
4) Identify the systemic diseases that cause facial rashes.

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What's New?

Topical anti-androgen
- Clascoterone 1% cream

Topical Antibiotic:
- Minocycline 4% Foam

Oral Antibiotics:
- Sarecycline

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What's Old?

Steps in Acne Pathogenesis

1. Obstruction of the sebaceous follicle with sebum and desquamated cells
2. Disruption of follicle wall occurs
3. Extrusion of Cutibacterium acnes, sebum, hair, and cells into dermis causes inflammation
   - C. acnes causes inflammation not an infection

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Four Major Pathophysiologic Features

1. Sebum overproduction
2. Abnormal desquamation of the follicular epithelium (keratin plugging)
3. *Cutibacterium acnes* (P. acnes) proliferation
4. Inflammation

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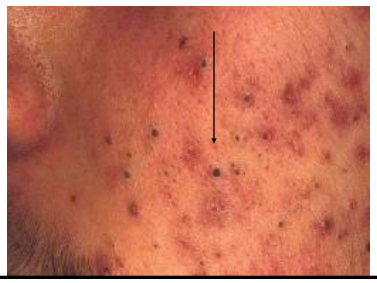
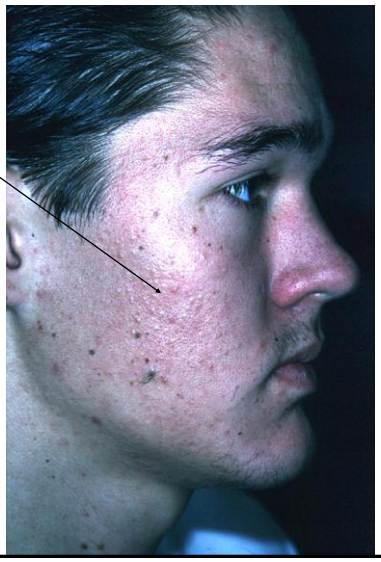
Non-Inflammatory Lesions Are

- Closed comedones whiteheads
- Open comedones blackheads





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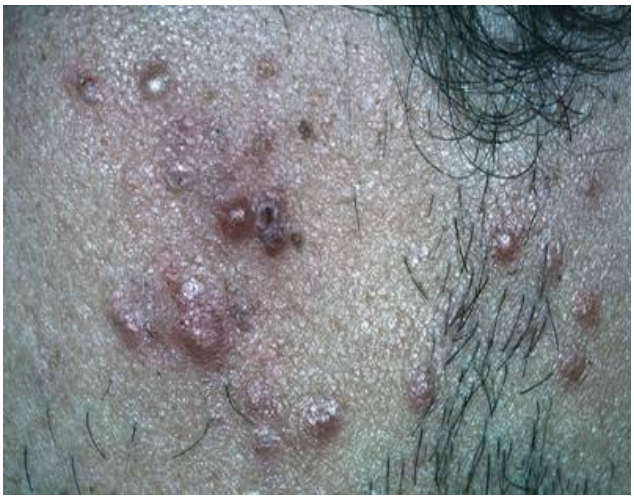
Inflammatory Lesions

- Papules and Pustules (<5mm)
- Nodules and Cysts (>5mm)



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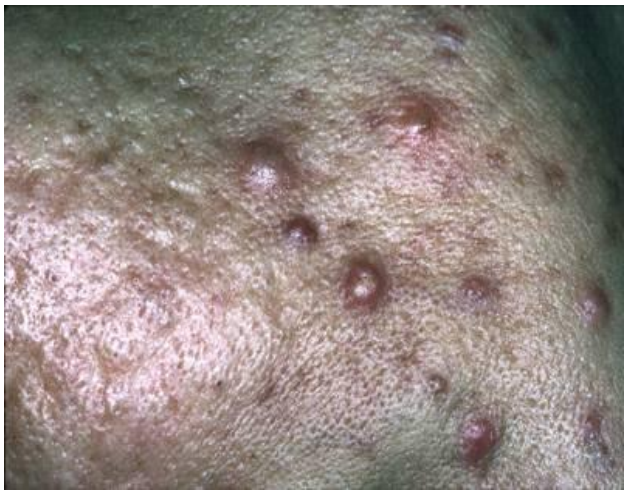
Cysts

- Large deep inflammatory nodules are referred to as cysts
- Not true epithelial cysts with cyst walls



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Causes/Exacerbating Factors

- Genetics
- Androgens – hormonal studies not needed unless other signs of androgen excess*
- Stress
- Diet?

- *Zaenglein Andrea, et al. Guidelines of care for the management of acne vulgaris. J Am Acad Dermatol. 2016 May;74(5):945-973.

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EBM – Diet and Acne

- Milk - excessive skim milk intake may increase acne in teenaged boys and girls:
  - Adebamowo CA, et al. Milk consumption and acne in teenaged boys. J Am Acad Dermatol. 2008 May;58(5):787-93.
  - Adebamowo CA, et al. Milk consumption and acne in adolescent girls. Dermatol. Online J. 2006 May 30;12(4):1.
- Chocolate and fried food have no effect on acne
- High glycemic index foods may worsen acne but data is not conclusive

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Classification Is Essential

- Obstructive vs. inflammatory- use morphology of lesions
- By severity - mild, moderate, severe
- useful for deciding upon the therapeutic approach

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Acne Treatments - Overview

	Sebum Production	Comedones	C. Acnes	Inflammation
Benzoyl Peroxide		↓	↓	↓
Topical Abx/Dapsone		↓	↓	↓
Topical Retinoids & Azelaic Acid		↓		↓
Oral Antibiotics		↓	↓	↓
Combination contraception	↓			↓
Spironolactone	↓			↓
Oral isotretinoin	↓	↓	↓	↓

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ARS Question #1

When Treating a Patient with Moderate Acne, the Following Treatment Has the Best Level of Evidence:

A. Clindamycin 1% solution
B. Monotherapy with erythromycin gel
C. Combination therapy with topical clindamycin and benzoyl peroxide
D. Monotherapy with topical benzoyl peroxide

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Updated Acne Treatment Guidelines 2024

1. Strong recommendations:

   Topical BPO, retinoids +/- topical antibiotics; oral doxycycline (limited to 3 months); isotretinoin

2. Conditional recommendations:

   Topical clascoterone, salicylic acid, azelaic acid, oral minocycline, sarecycline, combined oral contraceptives and spironolactone

3. Good clinical practices:

   Combining multiple mechanisms of action, limiting systemic antibiotic use, combining BPO when using topical or oral antibiotics and adjuvant intralesional steroid

J Am Acad Dermatol https://doi.org/10.1016/j.jaad.2023.12.017.

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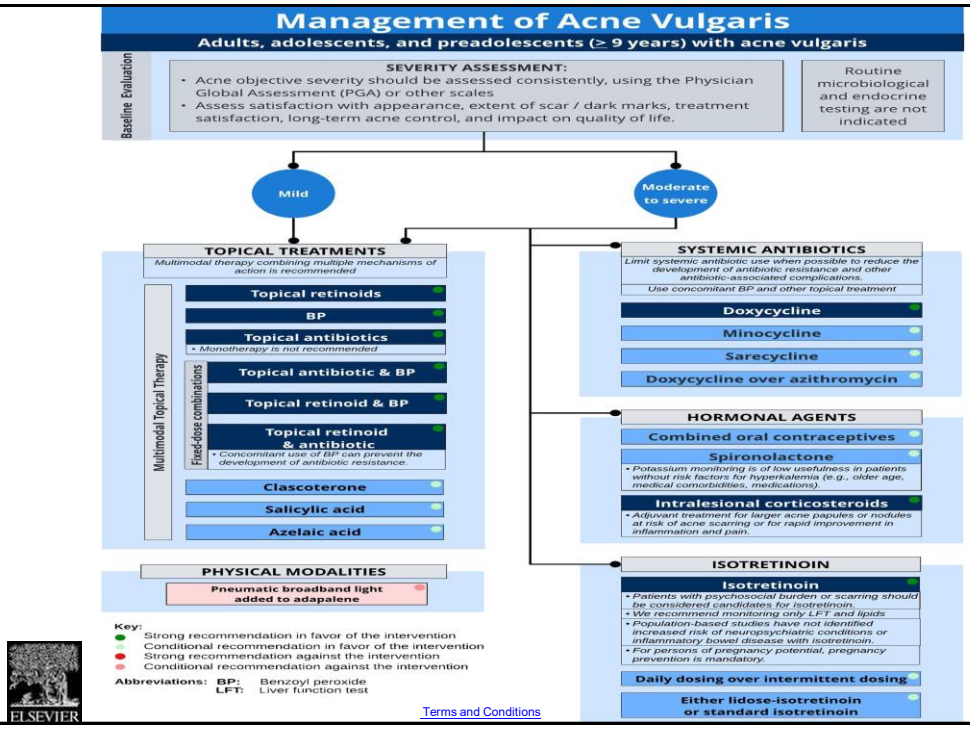

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Topical Medications for Acne Therapy

- Antimicrobial effect – benzoyl peroxide and azelaic acid (Azelex)
- Topical antibiotics – clindamycin, erythromycin, dapsone, minocycline
- Keratolytic agents – retinoids and azelaic acid
- Antiandrogenic

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Benzoyl Peroxide

- Kills *C. acnes* by direct toxic effect
- Also mildly comedolytic for comedonal acne
- 2.5% to 10% (gel, cream, lotion, soap bar)

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Topical Antibiotics

- Erythromycin - solution, gel, cream
- Clindamycin - solution, gel, lotion
- Dapsone – gel
- Minocycline 4% Foam – new and pricey

- Combination products with benzoyl peroxide (BPO)
- Don't use as monotherapy – can add OTC BPO to the prescription antibiotic to keep cost down

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Dapsone Gel

5% and 7.5%

- anti-inflammatory
- Females, skin of color

Yale S, Stefanko N, McCarthy P, McFadden V, McCarthy J. Pediatr Dermatol. 2020 Mar;37(2):377-378
Once-Daily Topical Dapsone Gel, 7.5%: Effective for Acne Vulgaris Regardless of Baseline Lesion Count, With Superior Efficacy in Females. Tanghetti E, Harper J, Baldwin H, Kircik L, Bai Z, Alvandi N. J Drugs Dermatol. 2018 Nov 1;17(11):1192-1198.

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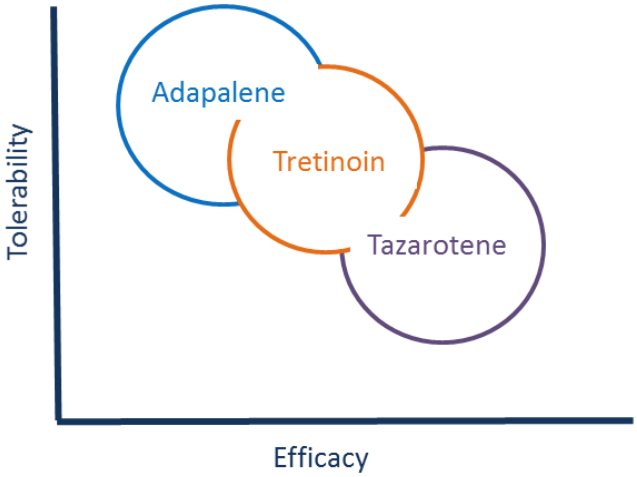
Topical Retinoids



- Adapalene gel – Differin gel
- Tretinoin – Retin-A
- Tazarotene
  - Decreases abnormal follicular keratinization
  - Expect some redness and scaling
  - May make acne worse during the first 2 weeks
  - Maximal effect seen in 3 -6 months

Topical Retinoids in Acne Vulgaris: A Systematic Review. Kolli SS, Pecone D, Pona A, Cline A, Feldman SR. Am J Clin Dermatol. 2019 Jun;20(3):345-365.

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Adapalene Gel 0.1% Is OTC

- Adapalene gel (Differin Gel) 0.1% OTC
- Less irritating than tretinoin.
- 0.3% adapalene gel by Rx
- Less expensive than generic and brand-name tretinoin
- This is a game changer for acne therapy in patients without health insurance or those with large co-pays and deductibles.

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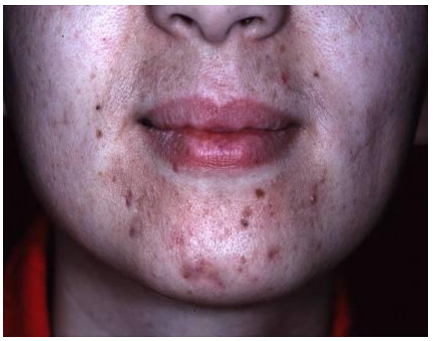
Azelaic Acid

- Antibacterial and keratolytic effects
- Useful for benign hyperpigmentation (melasma)
- 20% Azelaic Acid cream (Azelex)
- 15% Azelaic acid gel (Finacea)
- 10% OTC
- Safe in pregnancy



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10% Azelaic Acid OTC

Promoted to even skin tone (melasma)

Could be used for acne or rosacea

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Combination Topical Products – More Money but Some Convenience

- Benzoyl peroxide 5% / Erythromycin 3% (Benzamycin, Aktipak)
- Benzoyl peroxide 5% / Clindamycin 1% (Duac, Neuac, BenzaClin)
  - Acanya 2.5% / 1.2%
  - Onexton 3.75% / 1.2%
- Benzoyl peroxide 2.5% / Adapalene 0.1% / 0.3% (Epiduo / Epiduo Forte)
- Tretinoin 0.025% / Clindamycin 1.2% (Ziana, Veltin)

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New Very Expensive Topicals

- Clascoterone 1% cream - androgen receptor inhibitor
- Minocycline topical foam
- Trifarotene (Aklief) – a new retinoid cream
- Triple combination product (Cabtreo – think Crabtree)
  - Clindamycin Phosphate 1.2%/Adapalene 0.15%/Benzoyl Peroxide 3.1% Gel

- Approximately $500 - $1000 per tube

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Topical Medications for Acne Therapy

- Antimicrobial effect – benzoyl peroxide and azelaic acid (Azelex)
- Topical antibiotics – clindamycin, erythromycin, dapsone
- Keratolytic agents – retinoids and azelaic acid

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Benzoyl Peroxide

- Kills *C. acnes* by direct toxic effect
- Also mildly comedolytic for comedonal acne
- Use 2.5% to 5% (gel, cream, lotion)
- 10% is more irritating and no more efficacious
- Lotion is less irritating than alcohol-based solutions

- Don't store in a hot environment due to toxins that can form.

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Antibiotic Use – 2024 AAD Guidelines

- Don't use antibiotics as monotherapy
- Use benzoyl peroxide with topical or oral antibiotics to avoid resistance
- When using oral antibiotics, try to limit use to 3 months
- Don't use tetracyclines in pregnant women or children less than 8 years of age

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Systemic Antibiotics – Typical Dosing

- Doxycycline 100 mg bid at first, then daily for maintenance
- Minocycline (1 mg/kg) 50 mg 1-2x daily
- Azithromycin – pulse dosing
  - 250 mg 3 x week
  - 250 mg 5 days/month

Comparative efficacy and safety of oral azithromycin versus doxycycline in moderate-to-severe Acne vulgaris: a systematic review and meta-analysis. J Dermatolog Treat. 2026 Dec;37(1):2648406

Efficacy and safety of oral doxycycline for acne vulgaris treatment: A systematic review and meta-analysis. Saudi Pharm J. 2026 Mar 17;34(2):13. doi:

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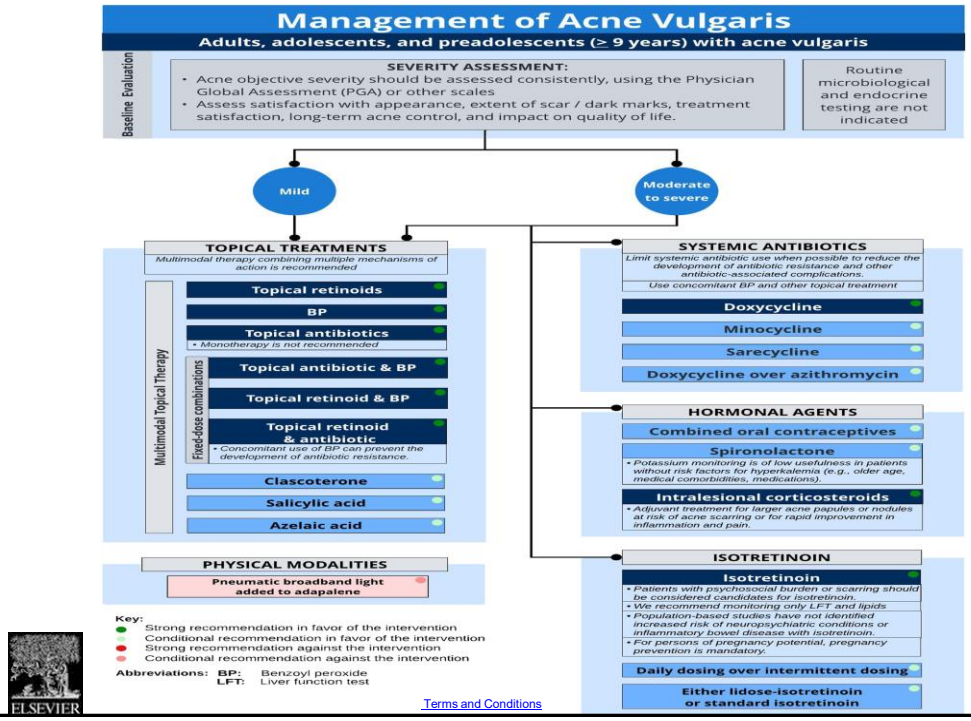

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Spironolactone

- Great systemic treatment for any female over age 12 years with acne
- Being used more often as we are trying to get away from promoting antibiotic resistance with long term antibiotics
- Off label use
- Less expensive than antibiotics now

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Spironolactone Dosing

- Dosing- available in 25, 50, 100 mg tablets
- Start with 25 - 50 mg daily
- Sometimes 50 mg bid is needed (max dose is 100 mg bid)
- It is best absorbed with food.

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New Tetracycline

- Sarecycline – if you thought old tetracycline is expensive
- narrow-spectrum tetracycline for acne
- Less E. coli effect (until they see the price)

Once-Daily Oral Sarecycline 1.5 mg/kg/day Is Effective for Moderate to Severe Acne Vulgaris: Results from Two Identically Designed, Phase 3, Randomized, Double-Blind Clinical Trials. Moore A, Green LJ, Bruce S, et al. J Drugs Dermatol. 2018 Sep 1;17(9):987-996

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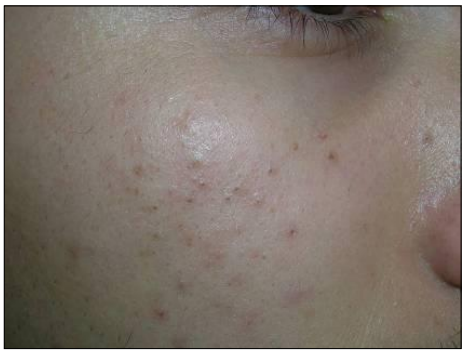
Mild Comedonal Acne



- Monotherapy with topical retinoid or azelaic acid
- Consider adding benzoyl peroxide – leave-on vs. wash-off
- Add OTC acne cleanser
  - Either BPO 4-5% or Salicylic Acid 2-3%

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Mild-Moderate Inflammatory

"Triple therapy"

1) Topical Retinoid
2) Benzoyl Peroxide
3) Topical Clindamycin or Erythromycin

Can be achieved with any number of the combination products to increase compliance in those that can afford the combination products

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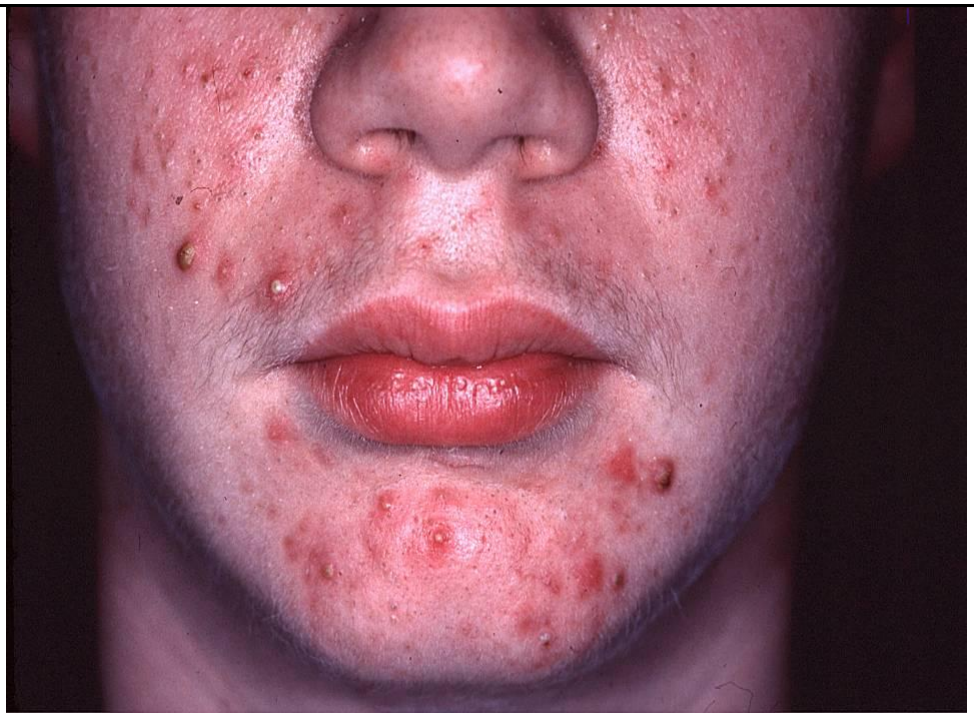

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Moderate to Severe Papulopustular Acne

- "Triple Therapy"
- PLUS Oral antibiotic - especially if the back or trunk is involved

- In women – may use hormonal tx instead of abx
  - spironolactone oral daily
  - OCPs – Ortho TriCyclen, Yaz, others

- If good response after 3 mo, consider tapering or stopping oral antibiotics (e.g. bid→qd, or 7-10 days of month when flaring)

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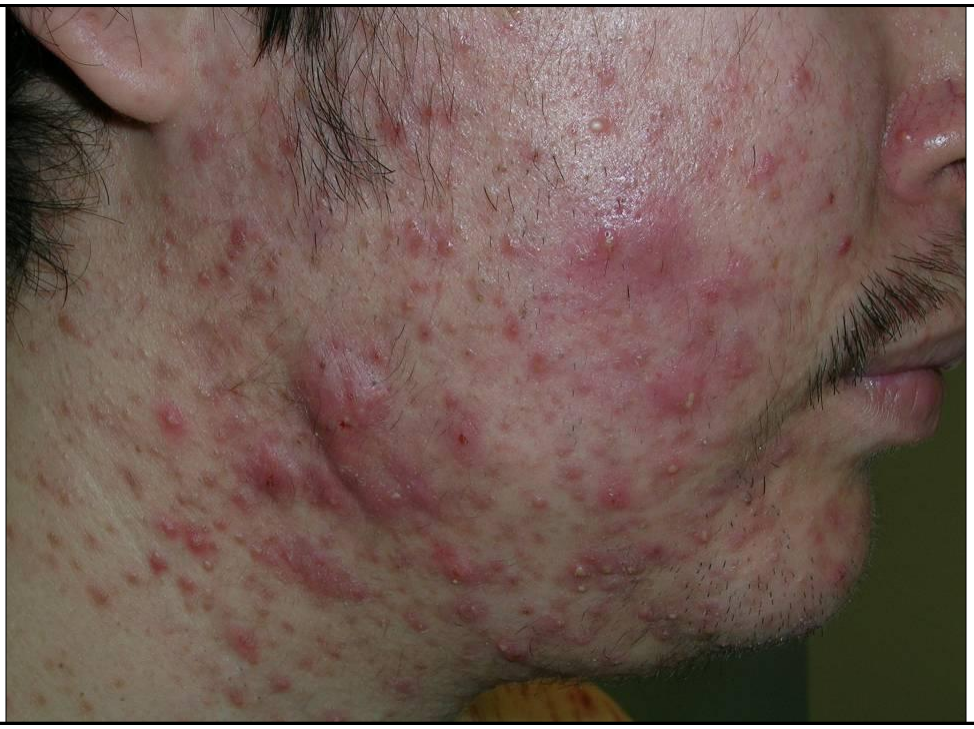

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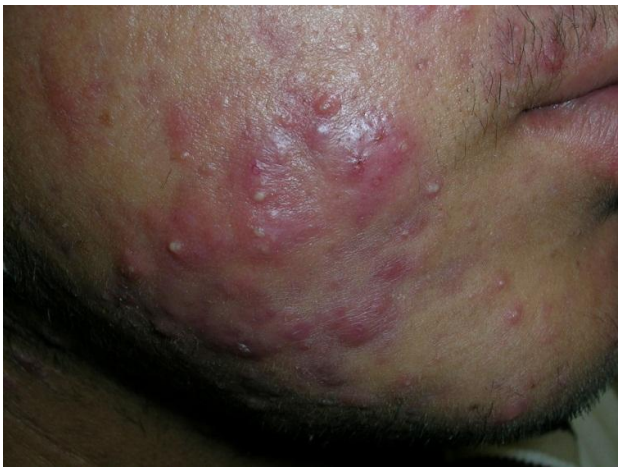
Severe Nodular or Scarring Acne

- When acne has not responded to the above treatments, consider:
  - Isotretinoin - the nuclear option



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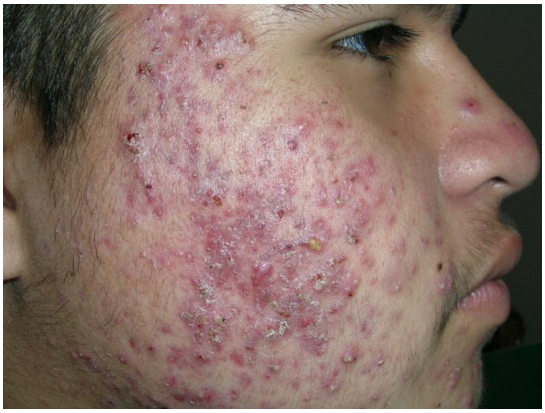
Severe Nodular or Scarring Acne

- Isotretinoin - 0.5 – 1 mg/kg day for 5-6 months
- Treats all the mechanisms of acne production
- But teratogenic in females



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Indications for Isotretinoin

- Severe nodulocystic acne
- Moderate inflammatory acne that fails to improve after 3-6 months of combination topical and systemic therapy
- Moderate acne with significant scarring or significant psychological distress
- Acne fulminans
- Acne conglobata

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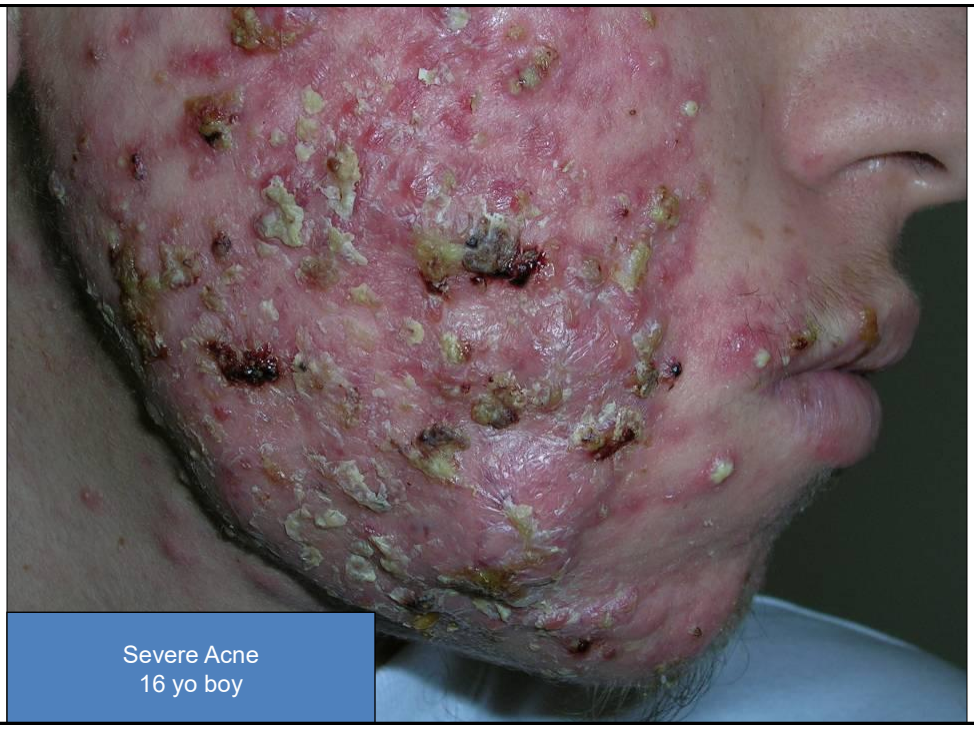

Severe Acne
16 yo boy

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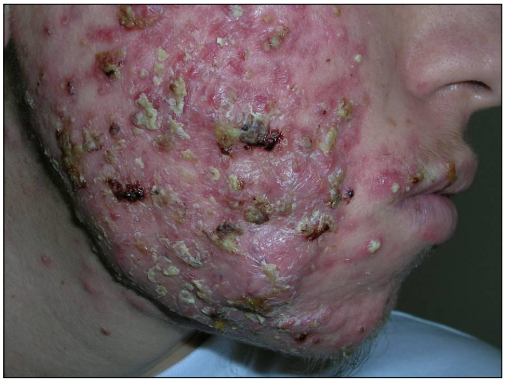

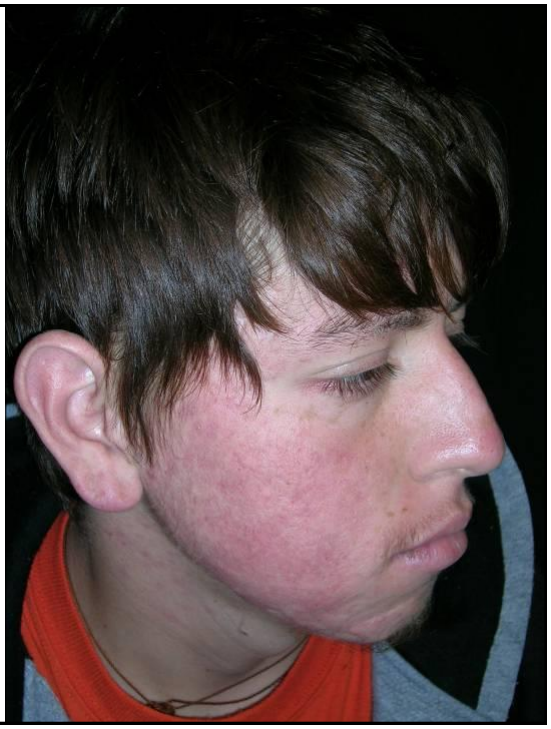

After Prednisone
Then Isotretinoin

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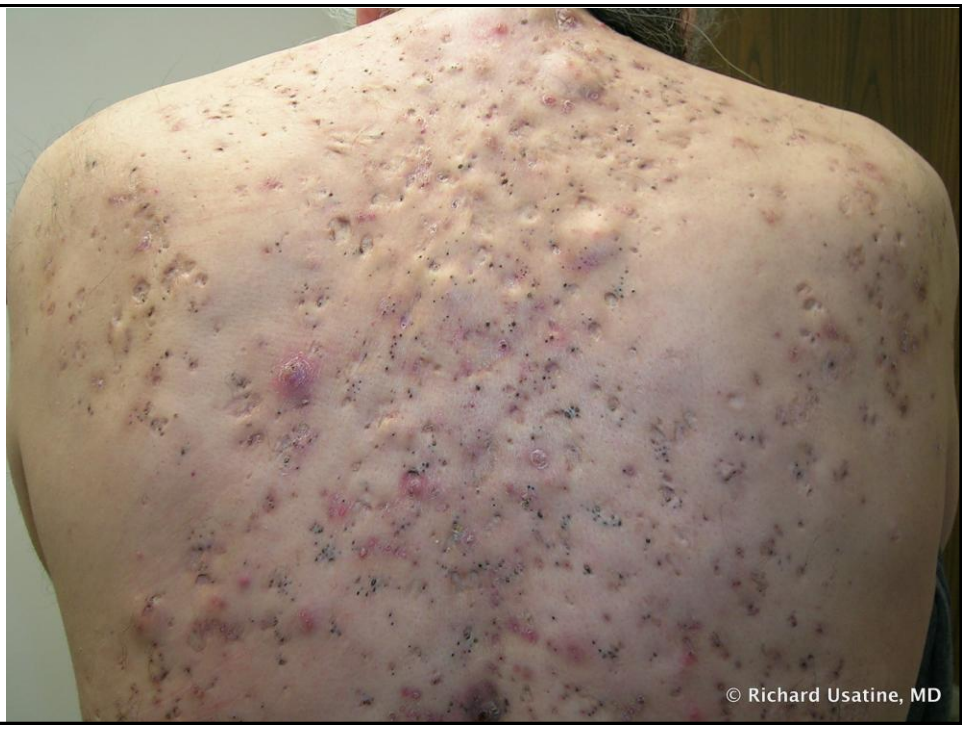
Acne Conglobata



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Isotretinoin Risks

- Birth defects – major teratogen
- Depression risks
- Suicide – risk unproven but should mention this

- Consent forms that emphasize these risks
- Must take mental health history at onset and at each visit

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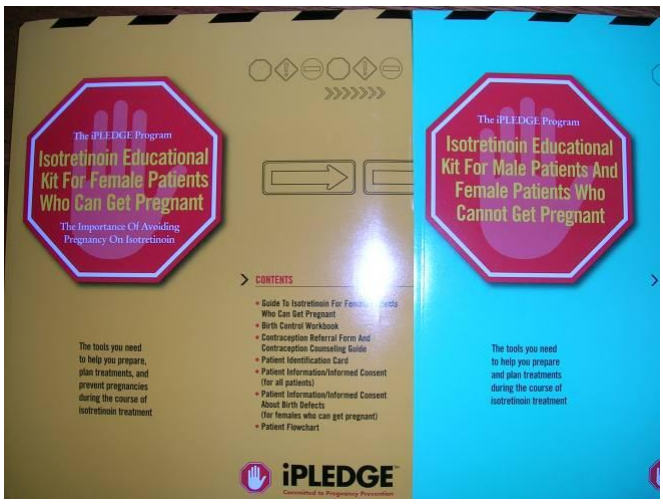

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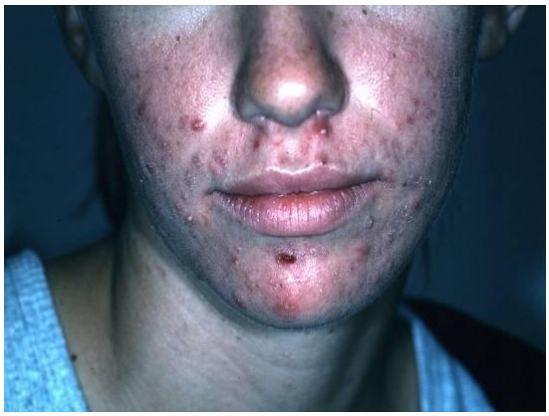
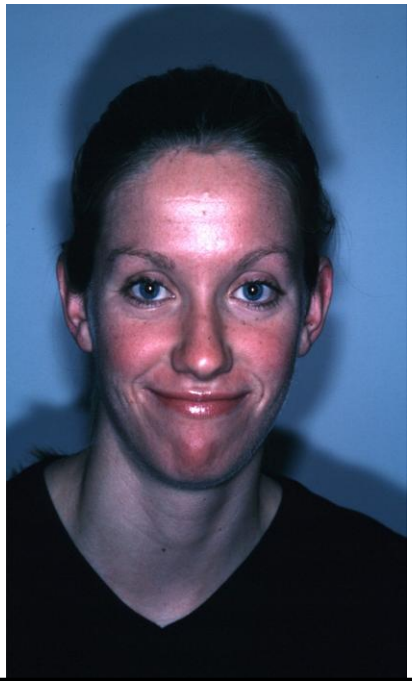
Before and After Isotretinoin





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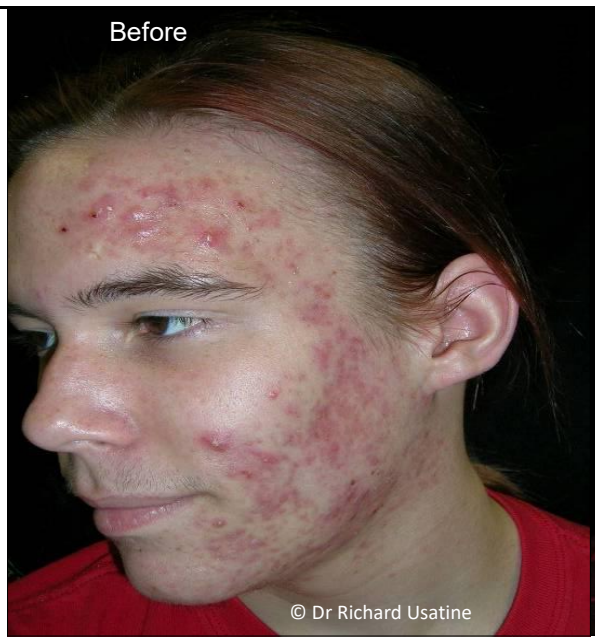

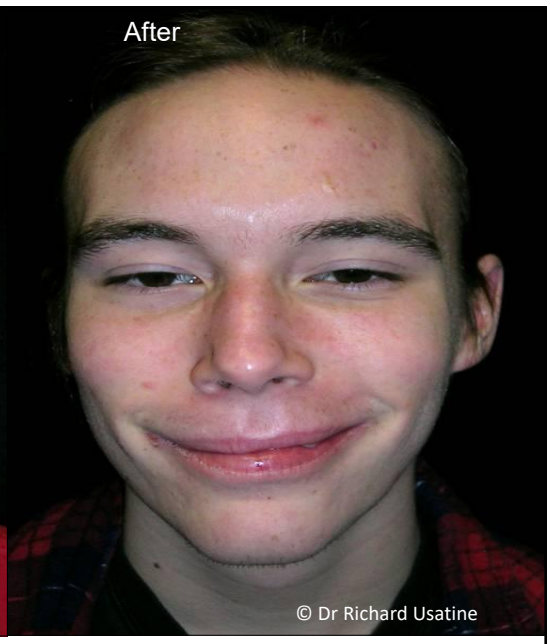

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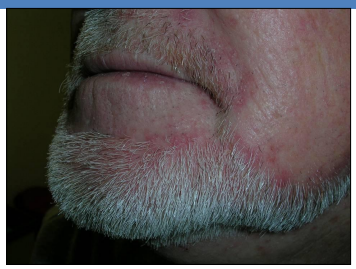
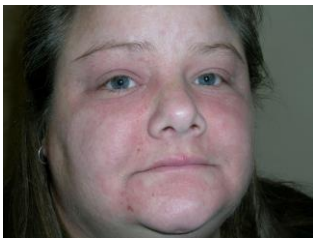
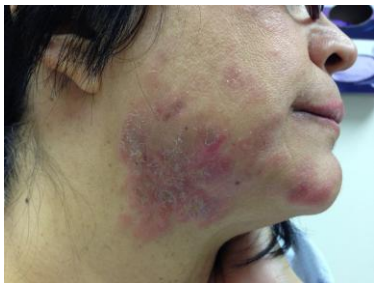
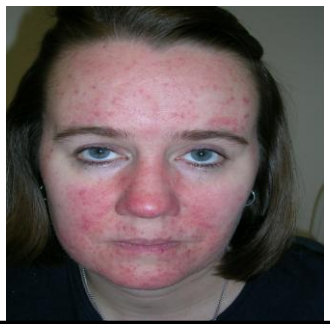
Most Common Cause of Facial Rashes

- Seborrheic dermatitis
- Atopic Dermatitis
- Contact Dermatitis
- Rosacea









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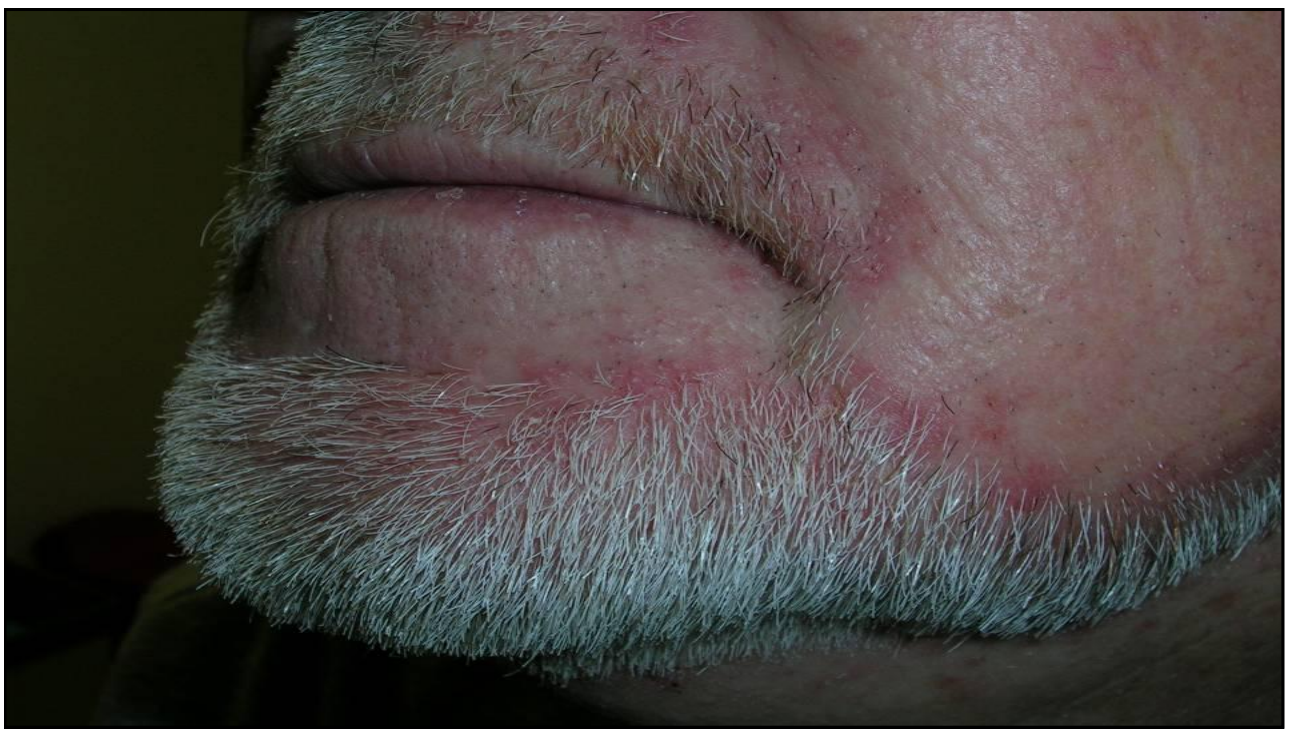

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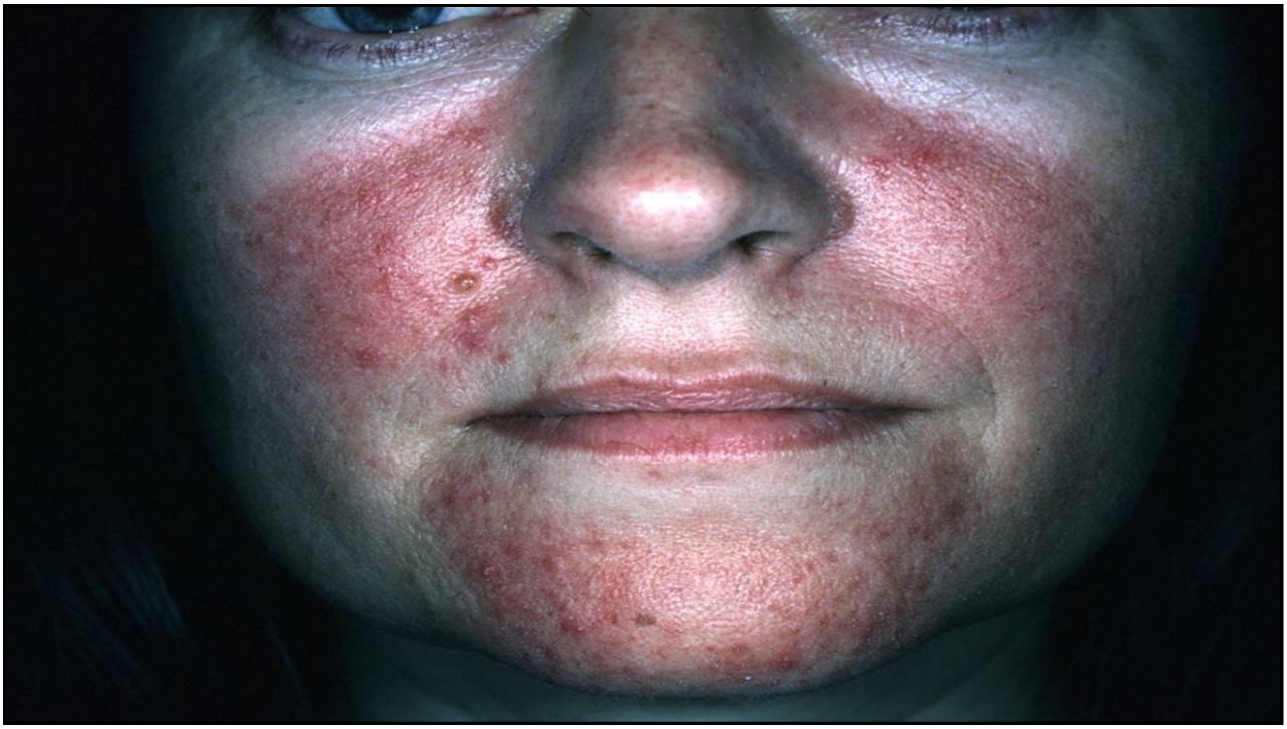

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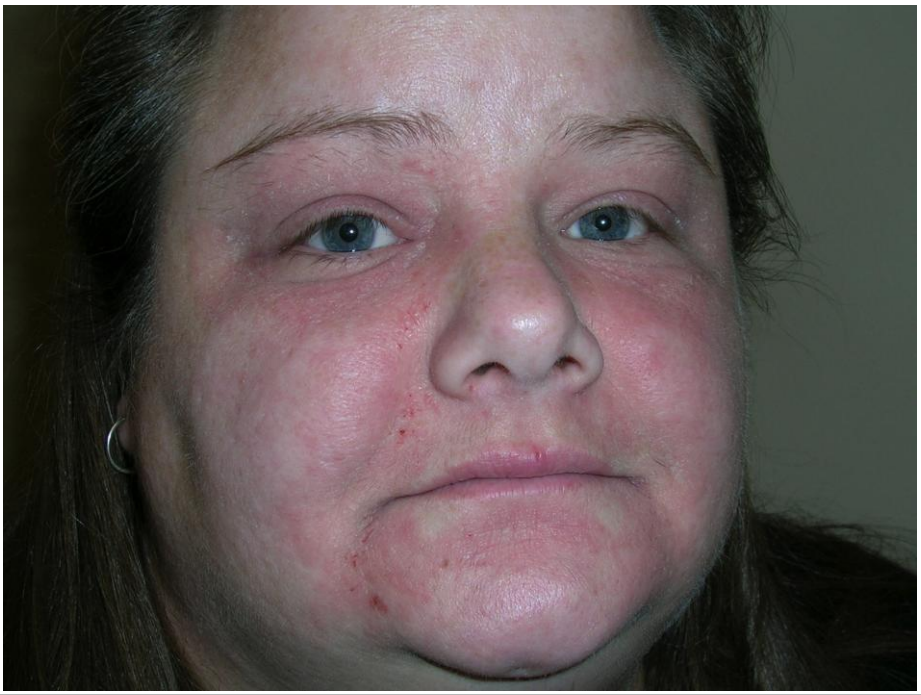
Atopic Dermatitis



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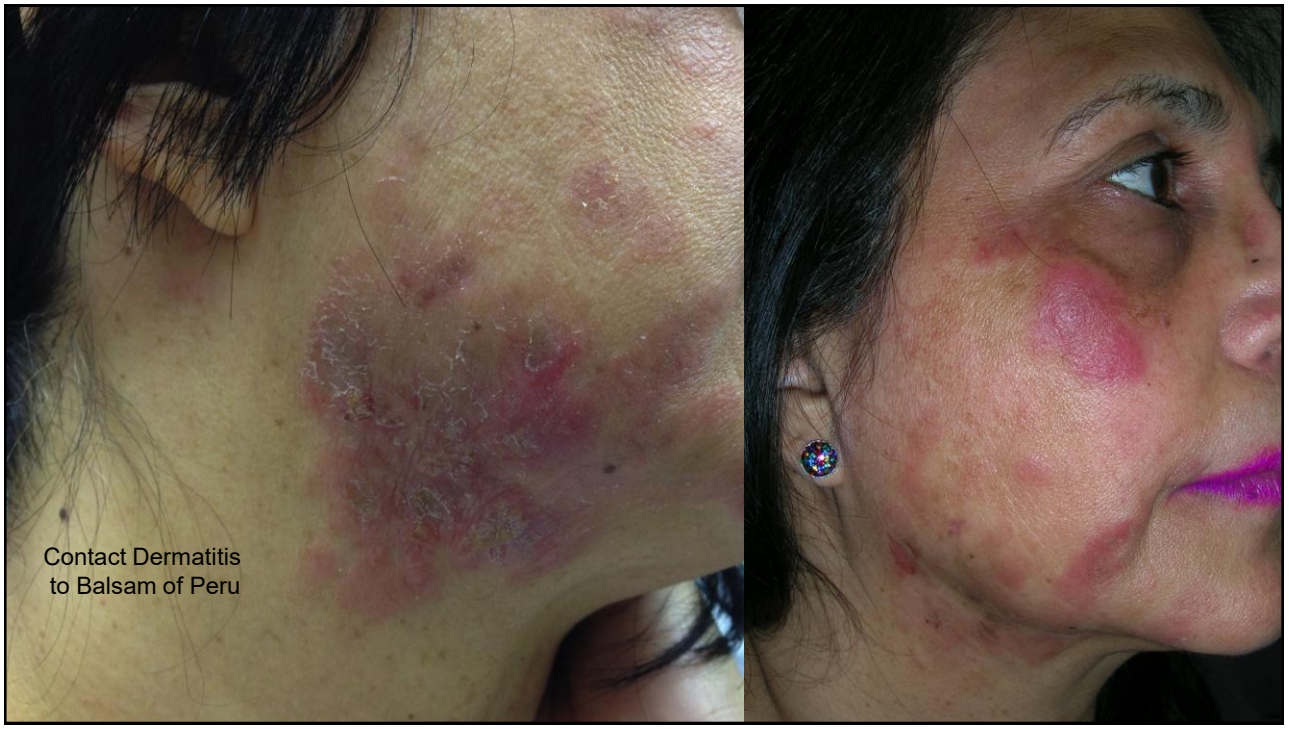

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Systemic Diseases with Facial Rashes

- Dermatomyositis
- Systemic lupus
- Cutaneous lupus
- Scleroderma
- Sarcoidosis
- Mycosis fungoides

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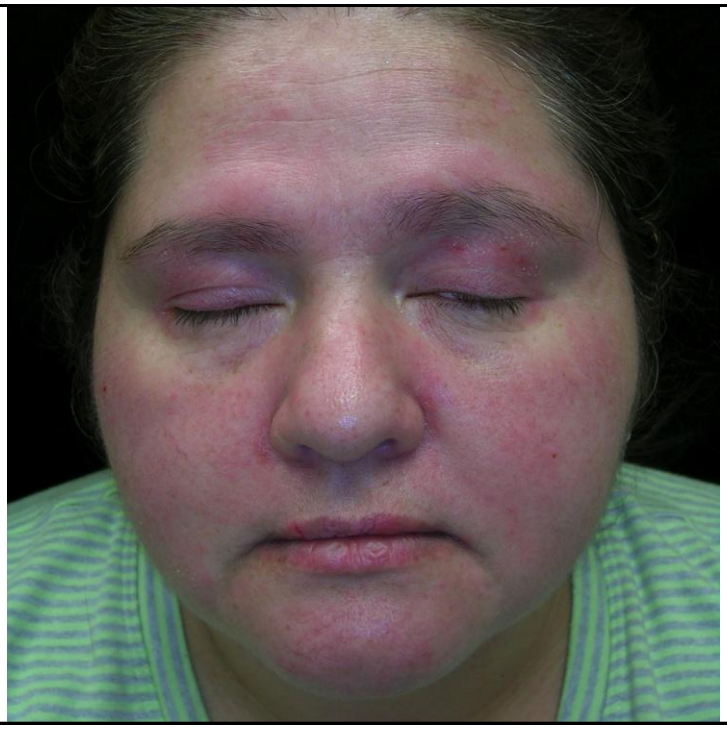
Dermatomyositis

Heliotrope Rash Around Eyes



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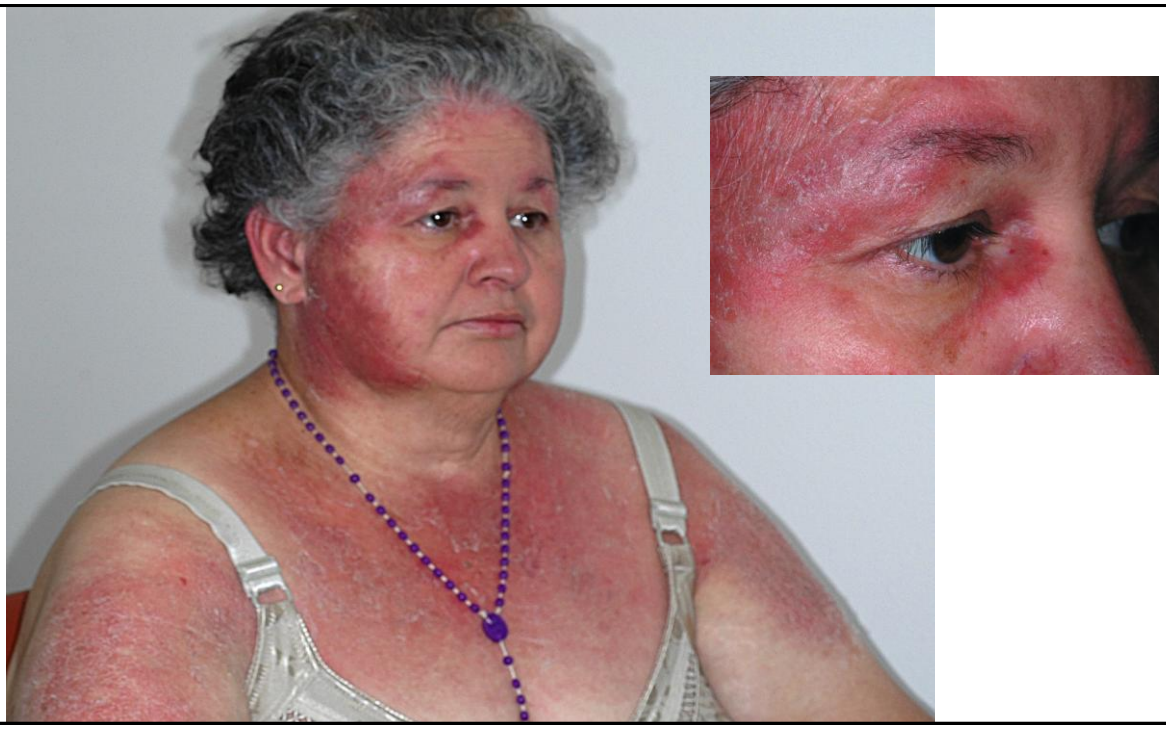

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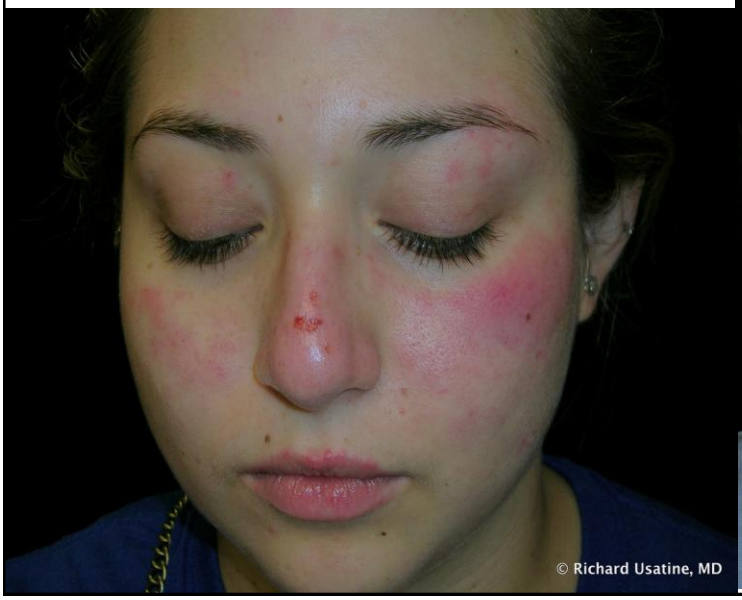

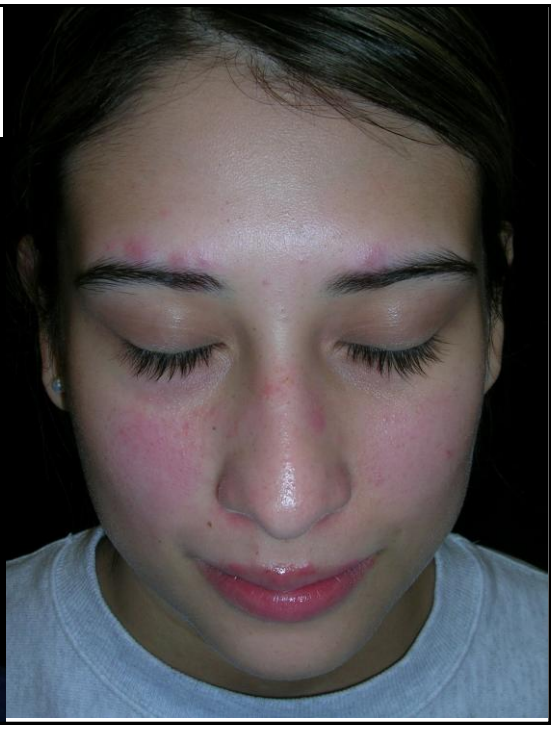

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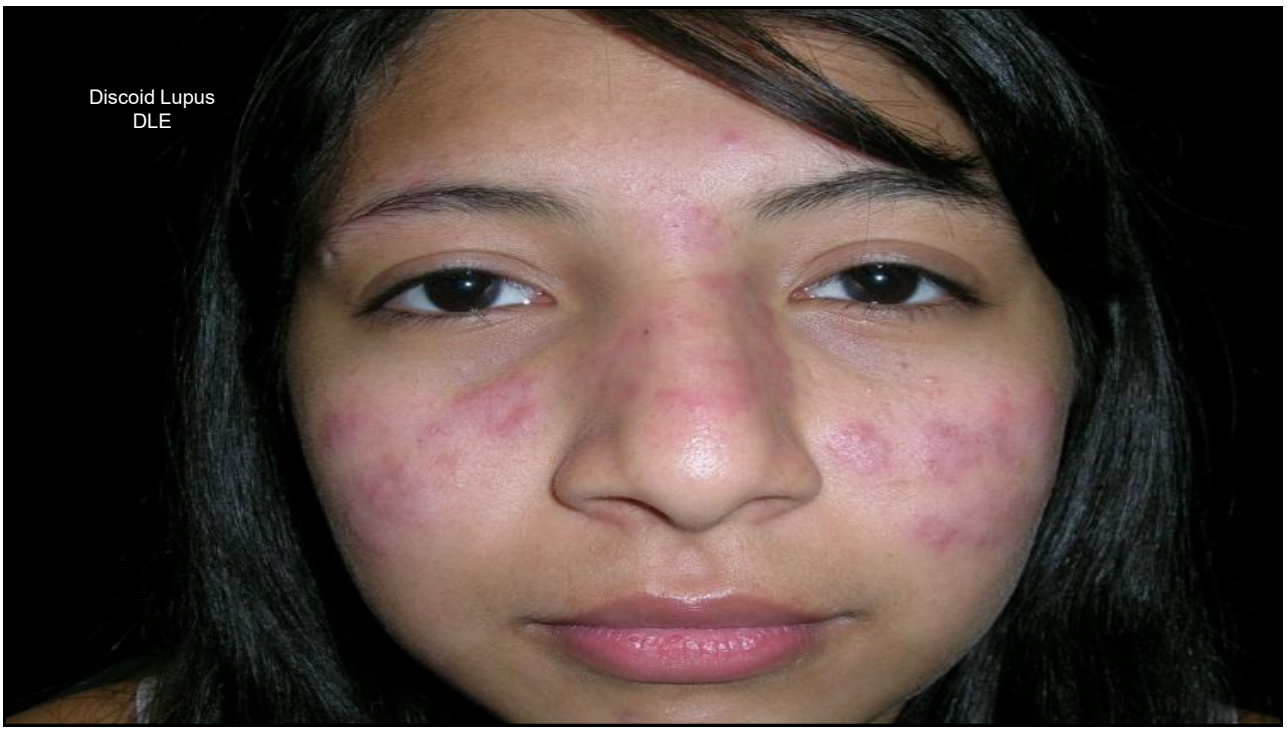

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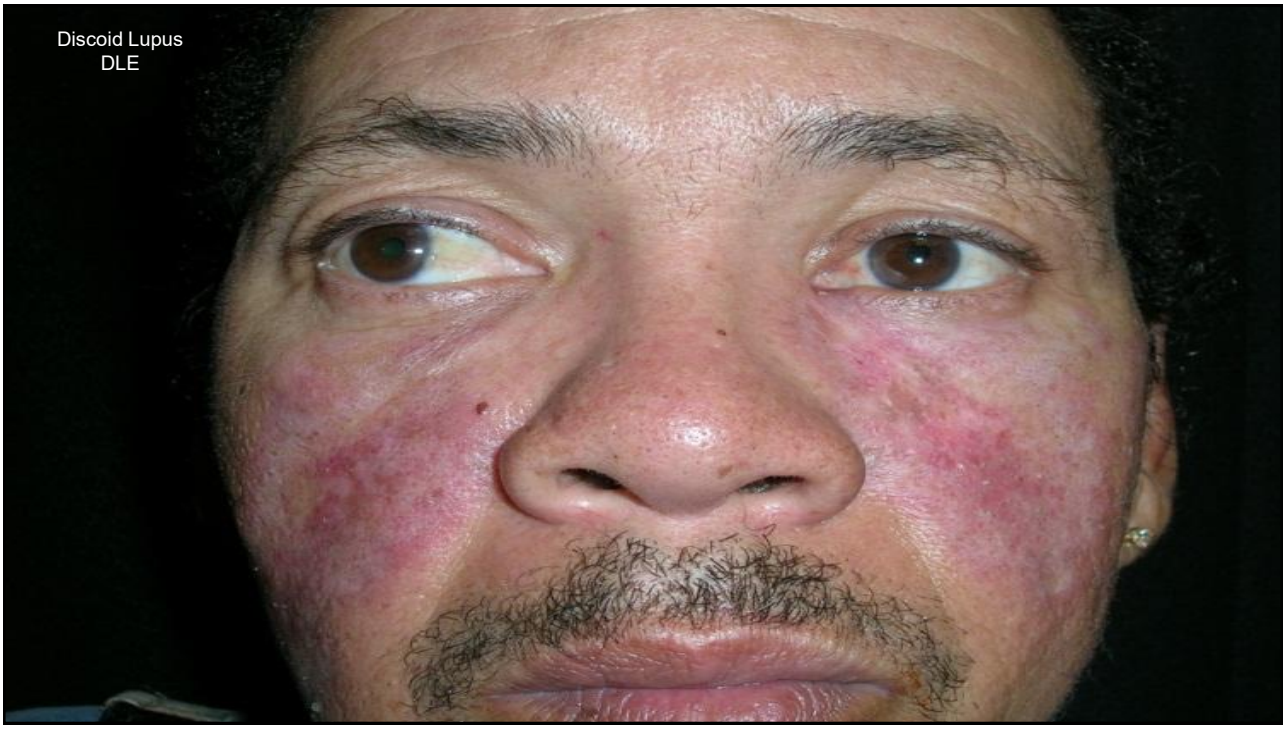

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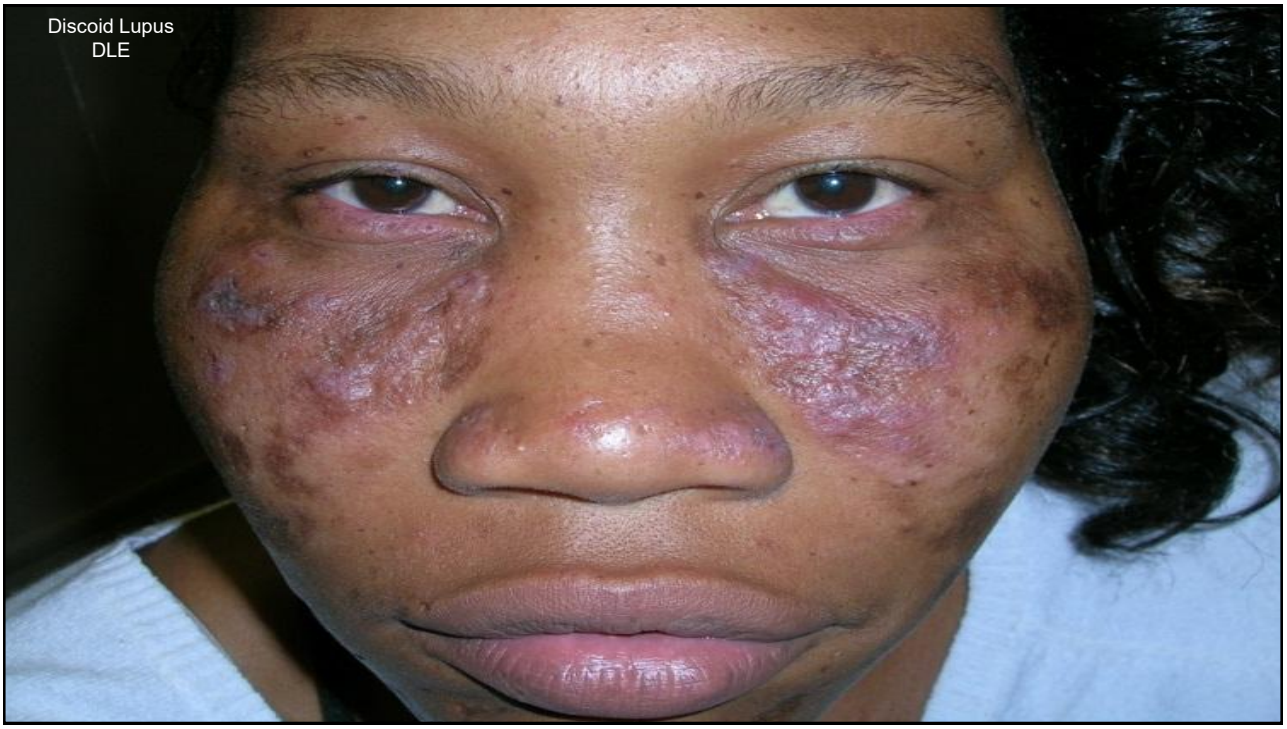

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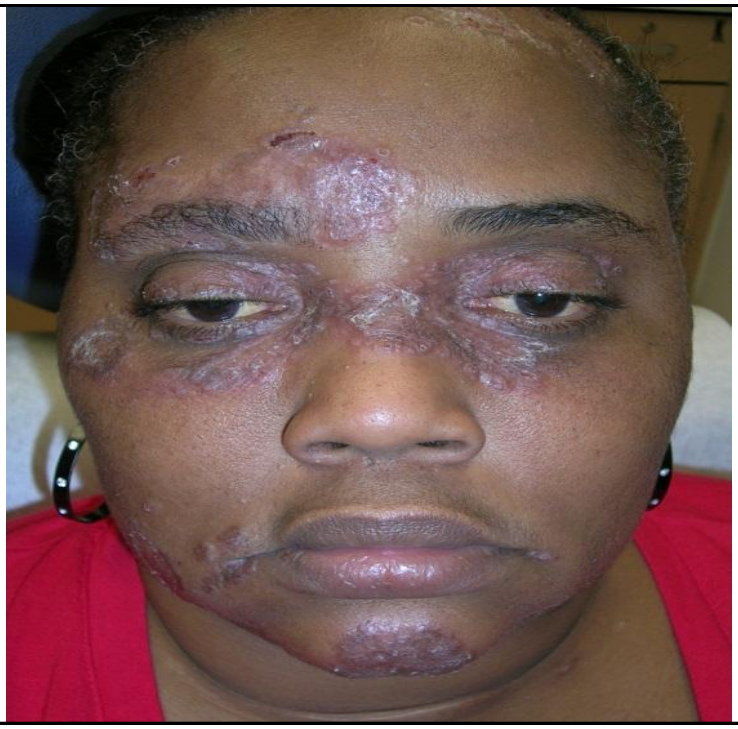
Sarcoidosis -
Lupus Pernio



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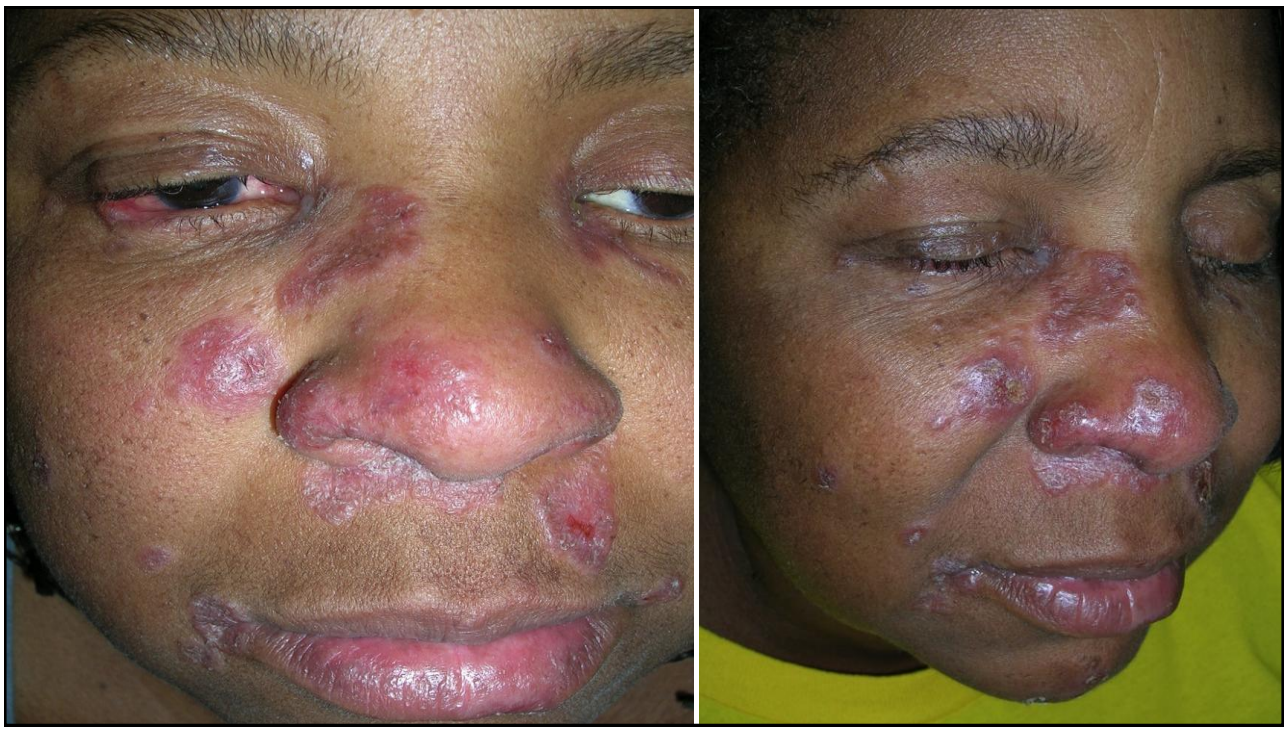

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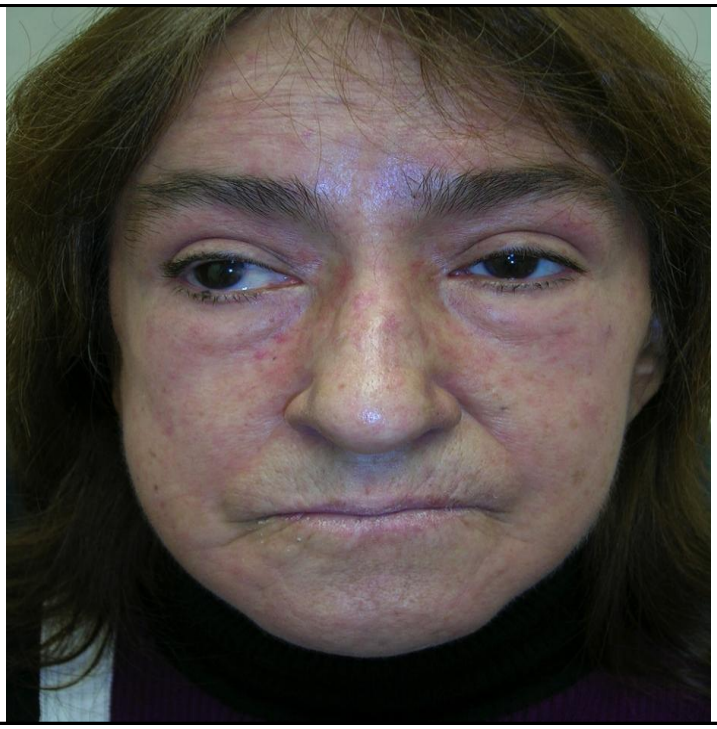
Scleroderma



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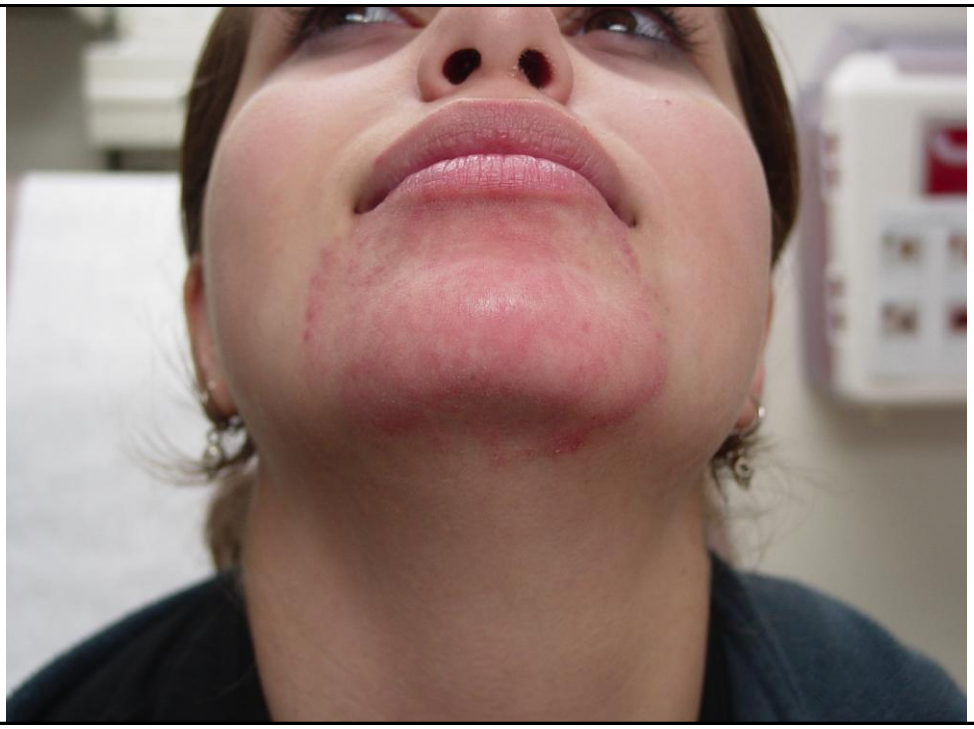
Infectious Causes of Facial Rashes

- Fungal - tinea
- Viral – herpes, zoster, molluscum
- Bacterial – impetigo, cellulitis
- Leprosy

66

Tinea Faciei



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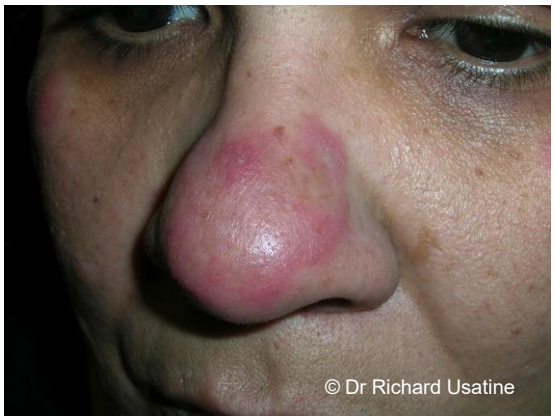
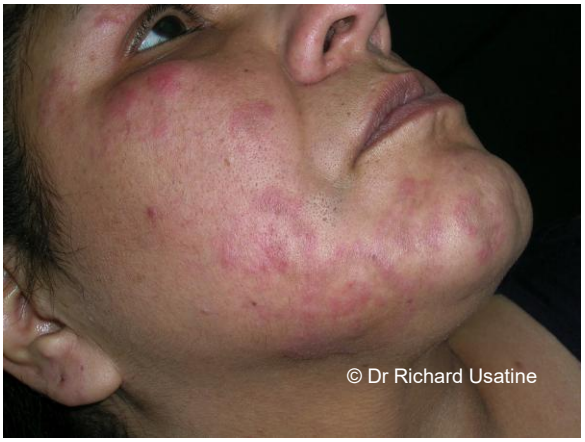
Tinea Incognito





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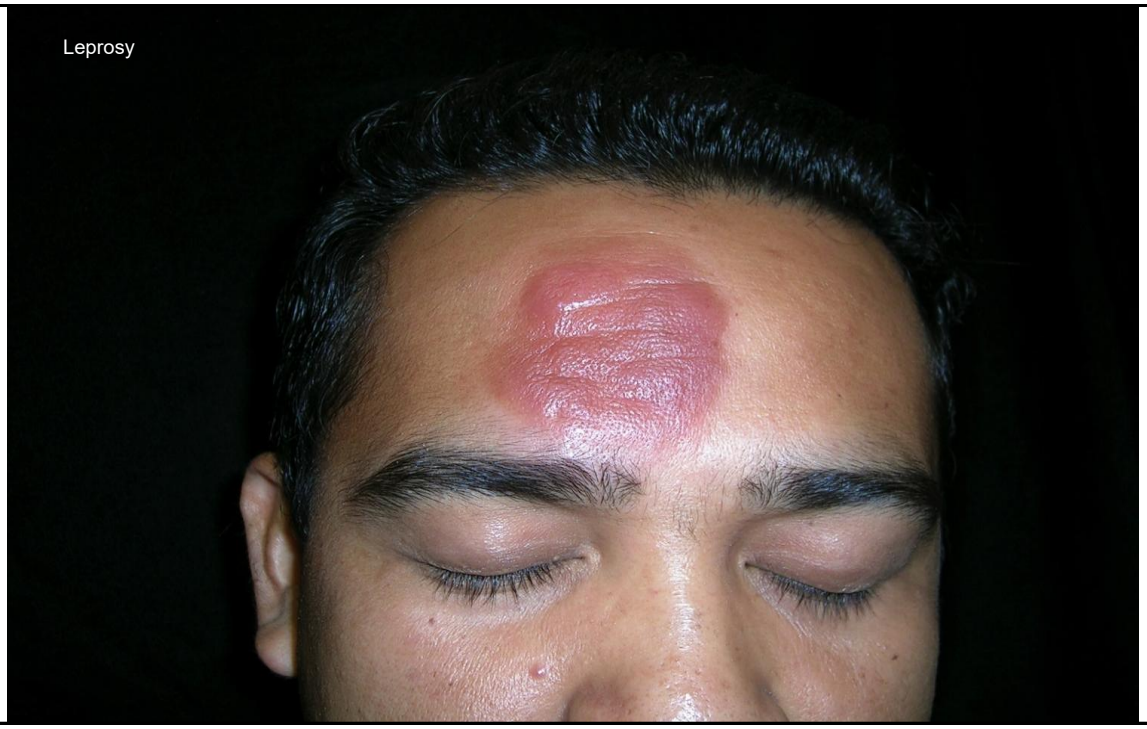

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Rosacea - Subtypes

1. Erythematotelangiectatic
2. Papulopustular
3. Rhinophymatous
4. Ocular rosacea

Standard classification of rosacea: *J Am Acad Dermatol*. 2002;46:584-587.

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2017 UPDATE: Rosacea Can Present as a Combination of Subtypes

Table I. Phenotypes of rosacea

Diagnostic*	Major†	Secondary
Fixed centrofacial erythema in a characteristic pattern that may periodically intensify Phymatous changes	Flushing Papules and pustules Telangiectasia Ocular manifestations • Lid margin telangiectasia • Interpalpebral conjunctival injection • Spade-shaped infiltrates in the cornea • Scleritis and sclerokeratitis	Burning sensation Stinging sensation Edema Dryness Ocular manifestations • "Honey crust" and collarette accumulation at the base of the lashes • Irregularity of the lid margin • Evaporative tear dysfunction (rapid tear breakup time)

*These features by themselves are diagnostic of rosacea.
†Two or more major features may be considered diagnostic.

J Am Acad Dermatol 2018;78:148-55.

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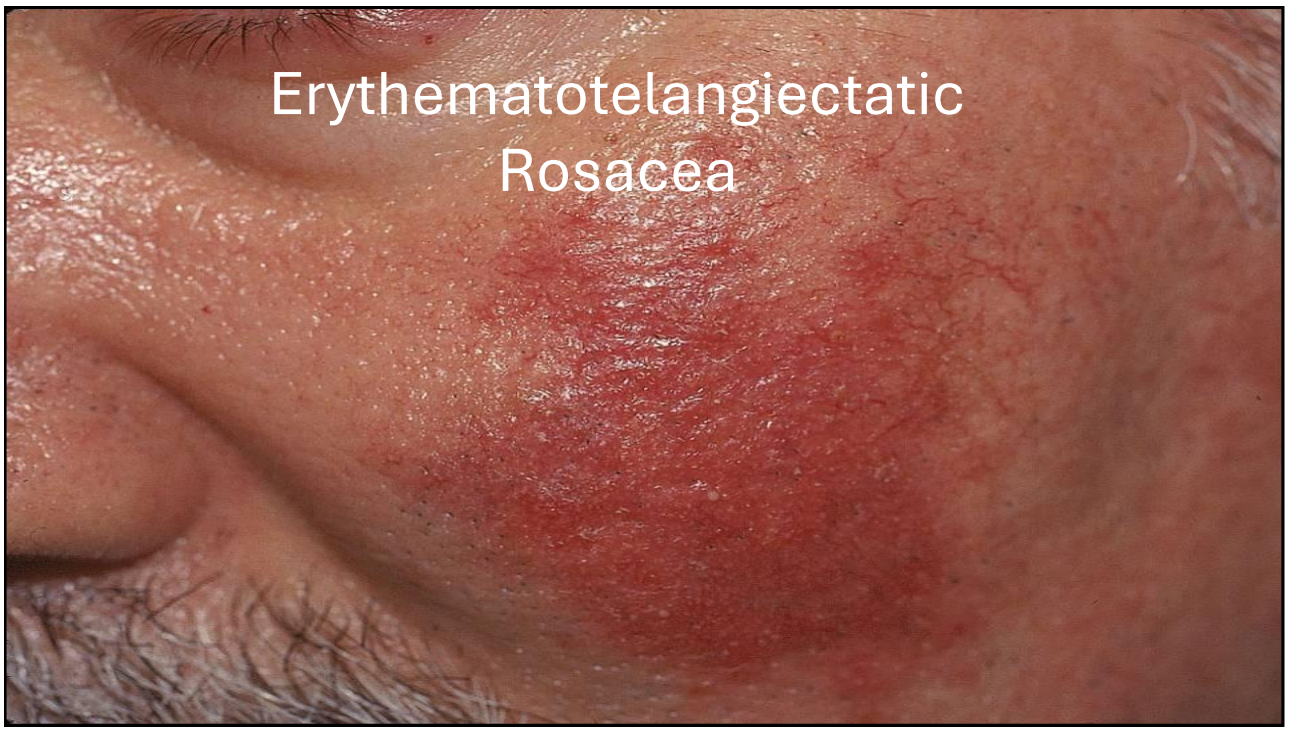

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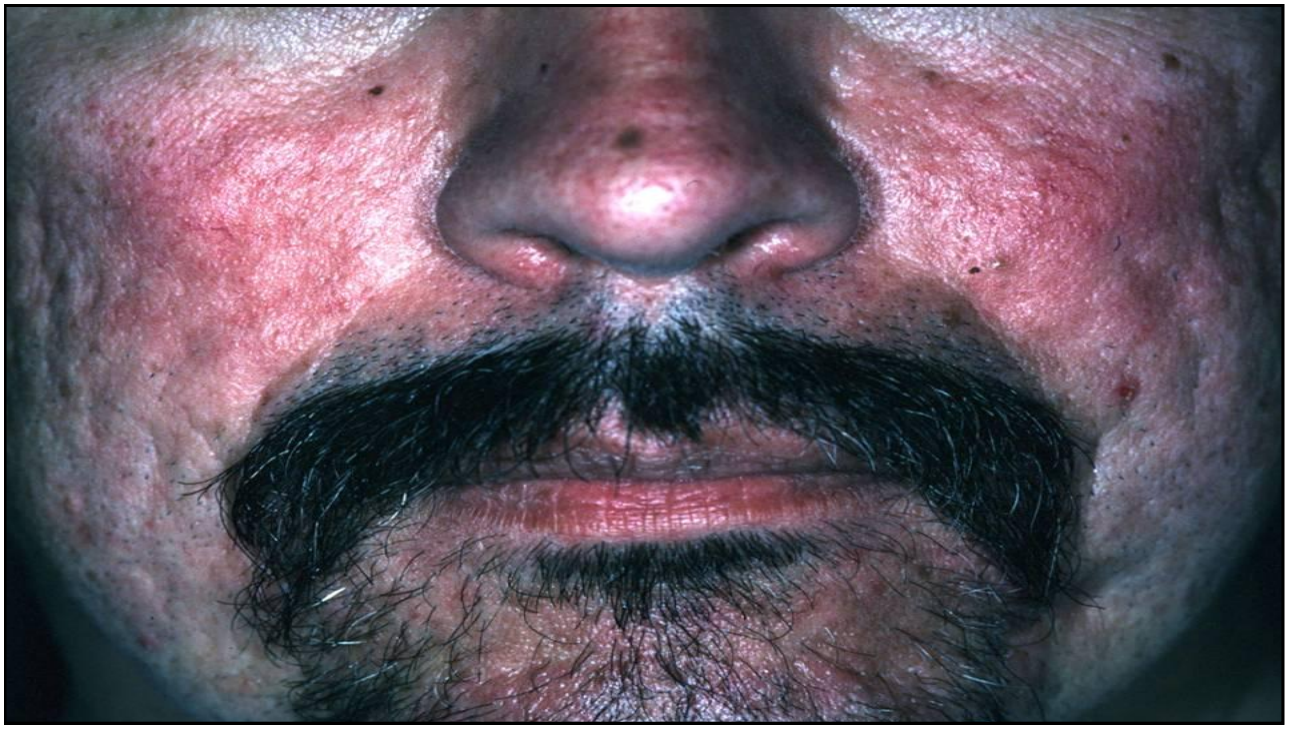

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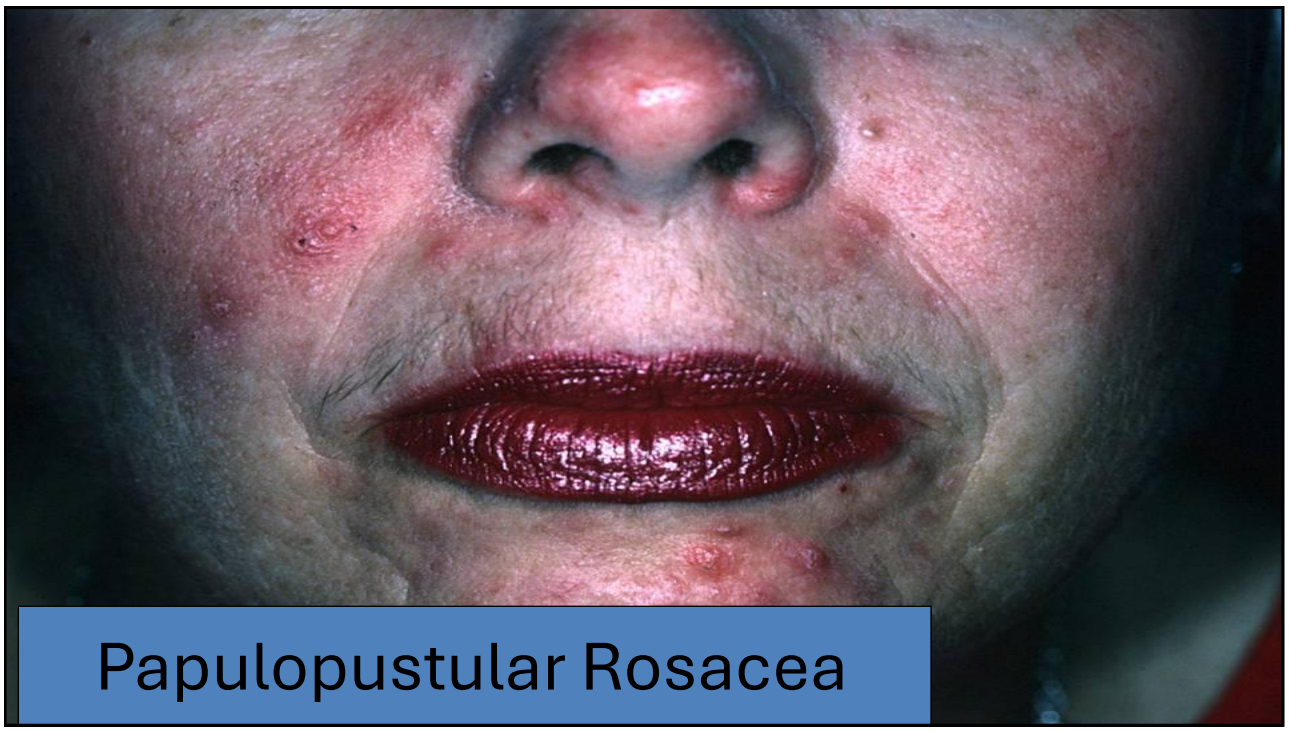

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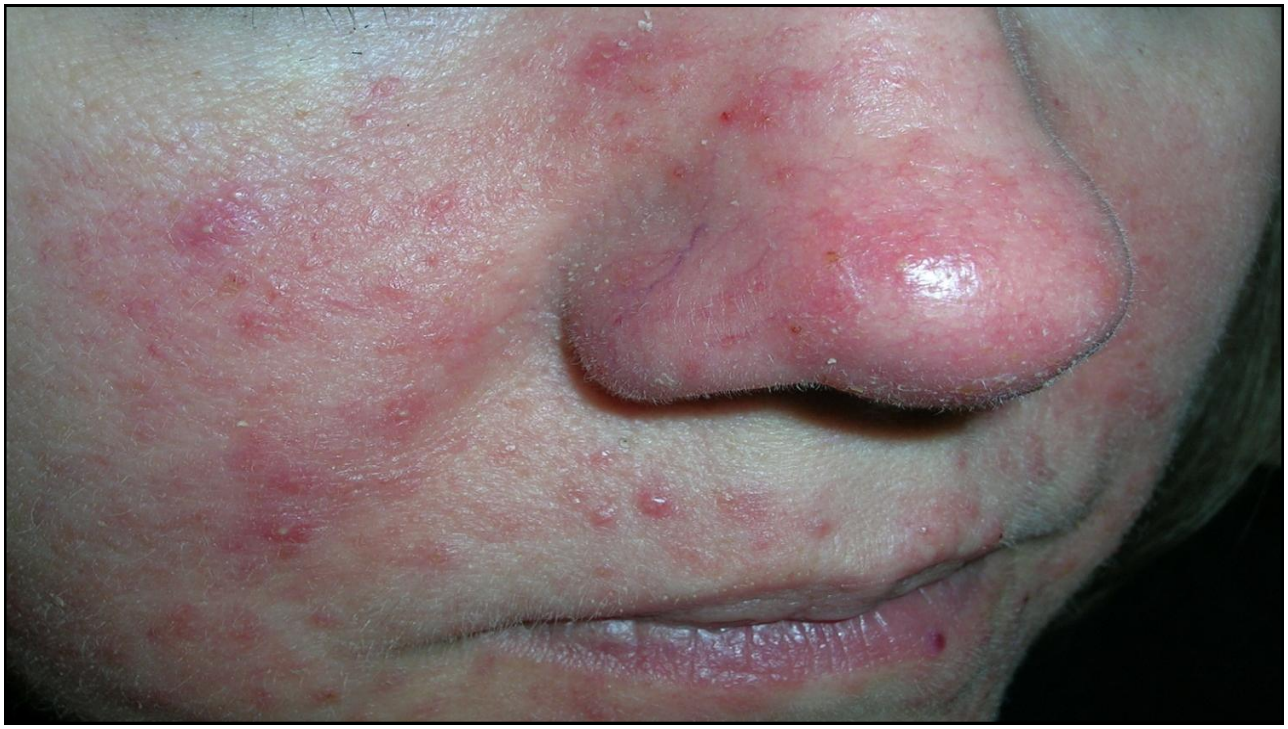

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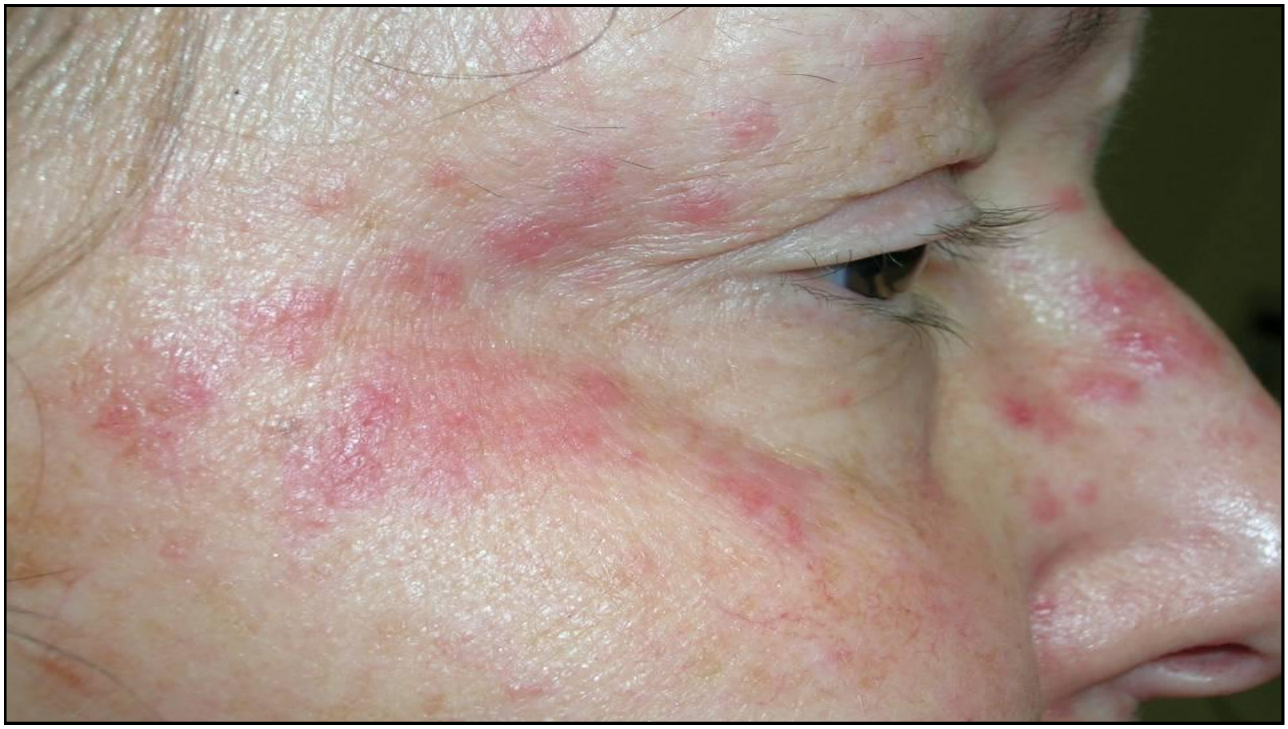

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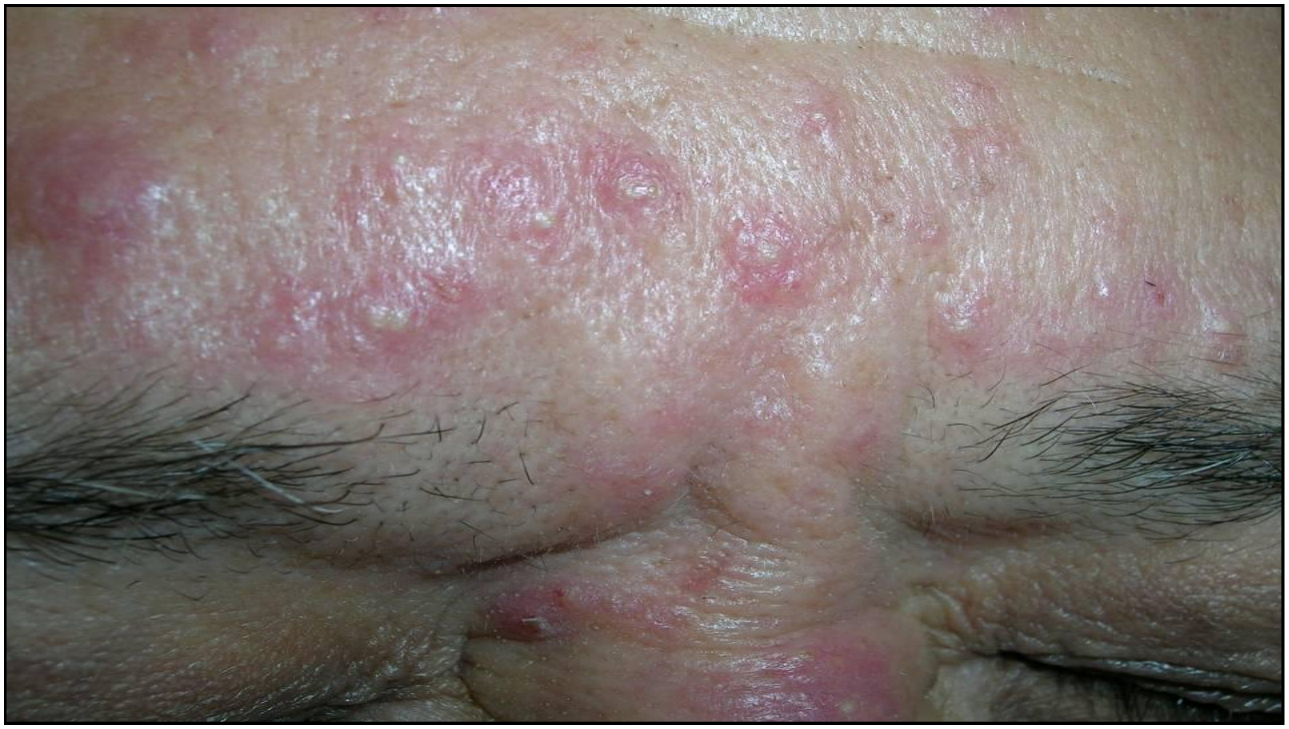

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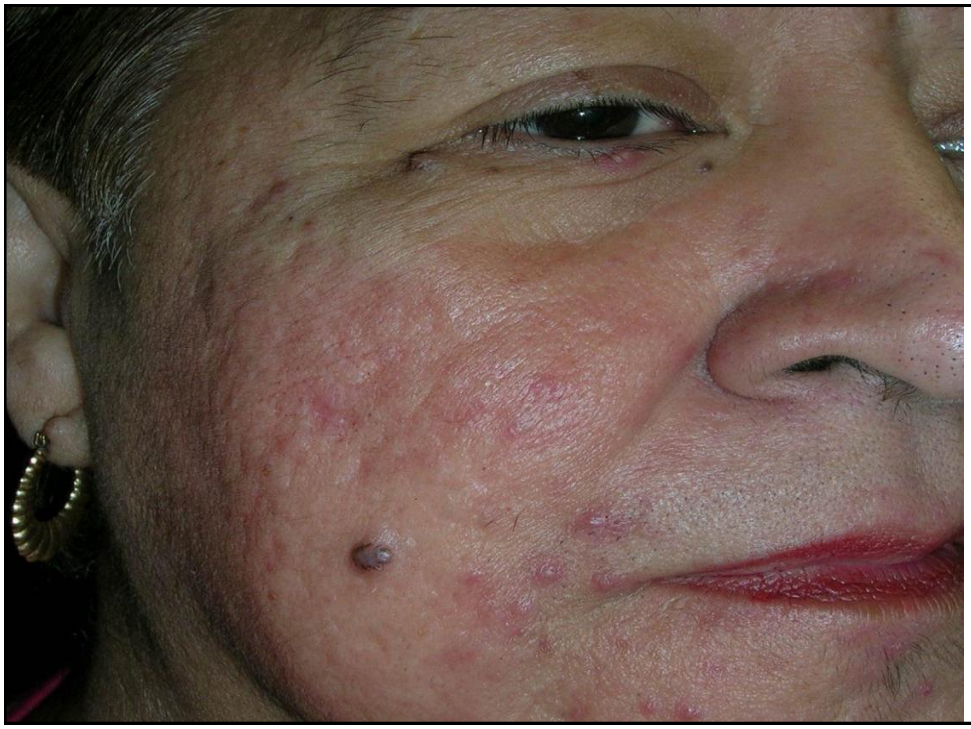

Ocular Rosacea

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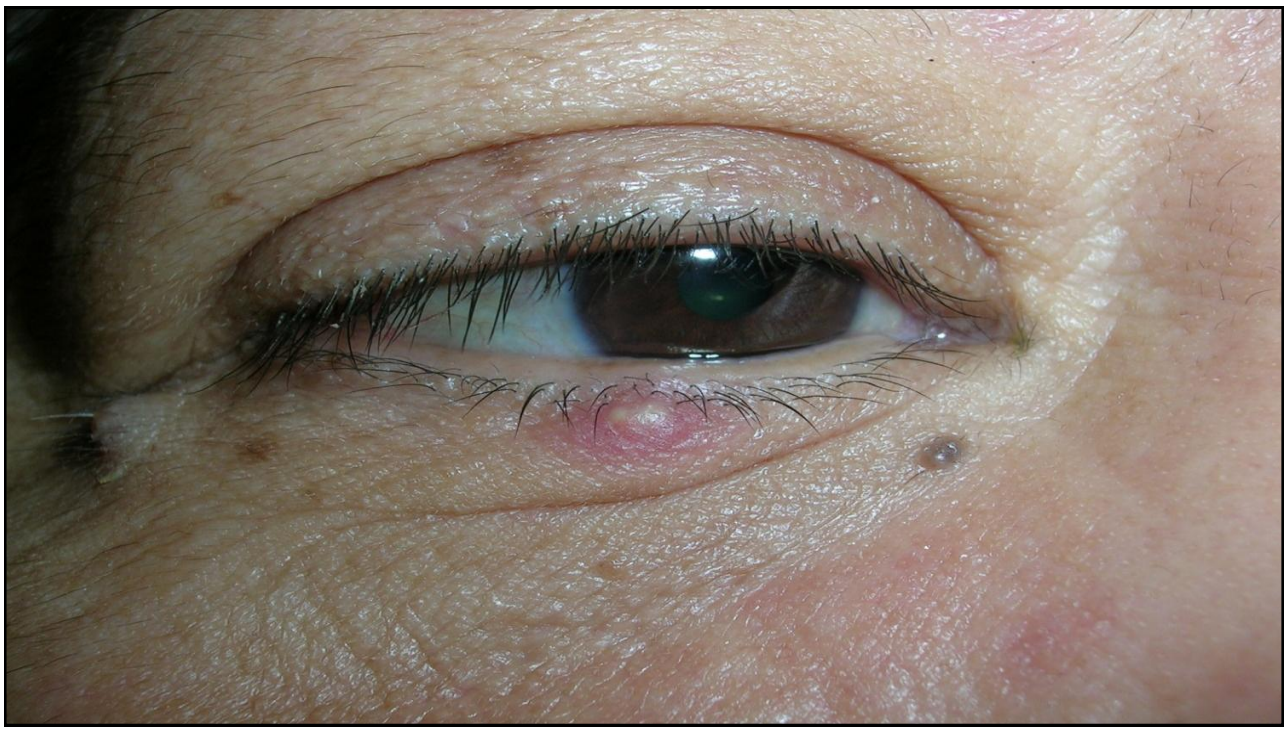
Ocular Rosacea

- Common:
  - Hordeolum and chalazion
  - Blepharitis
  - Conjunctivitis
  - Chronic edema
- Rare: keratitis, corneal neovascularization, corneal ulceration or rupture

79



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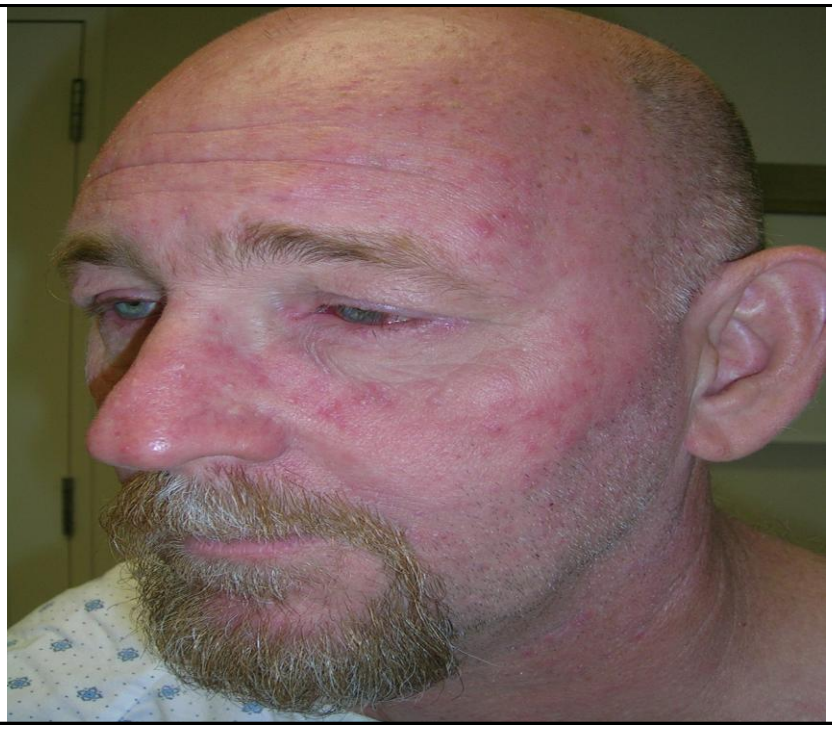

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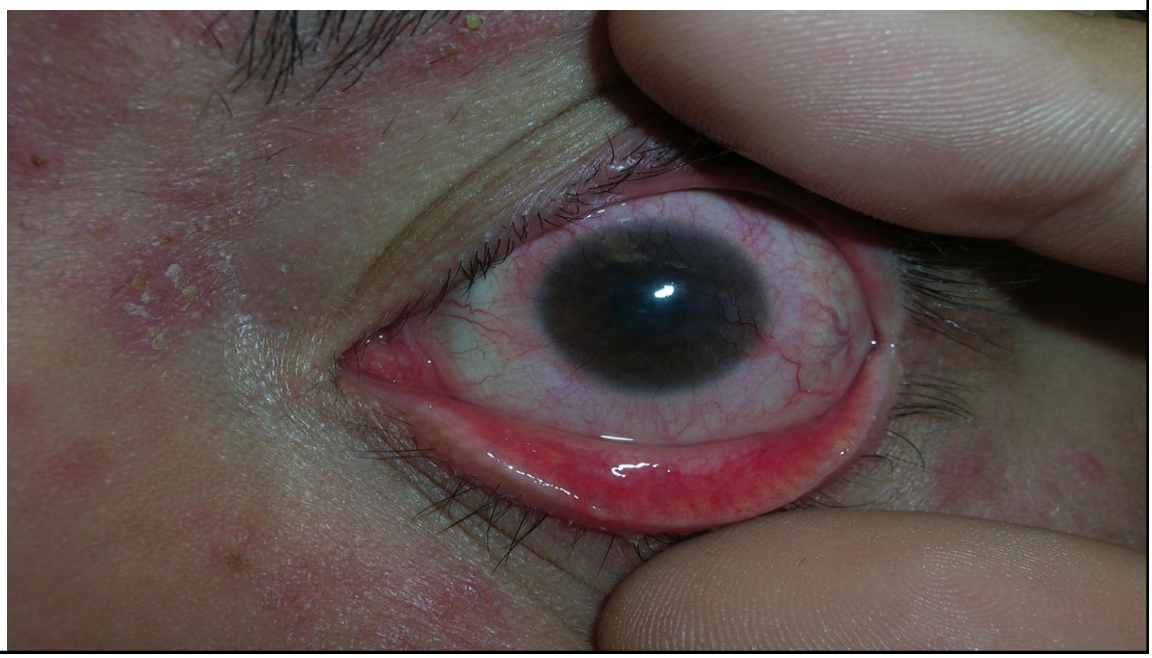
Corneal Neovascularization



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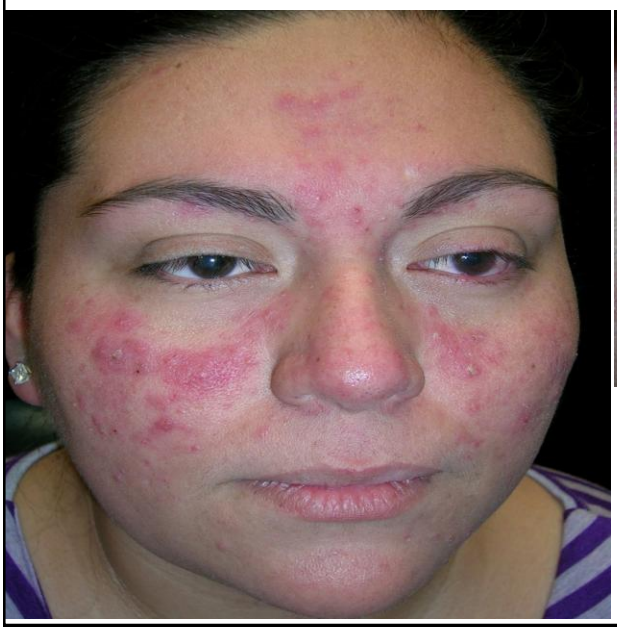
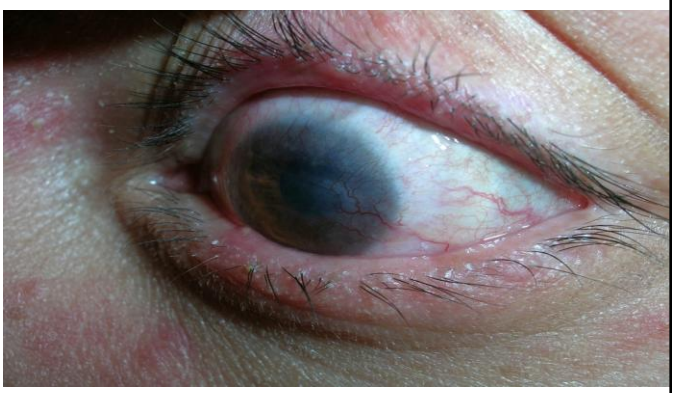
Ocular Rosacea

- Common in persons with rosacea
- Ask about ocular symptoms
- Dry eyes, burning, stinging, itching, light sensitivity, foreign body sensation, tearing, blurry vision, styes

83





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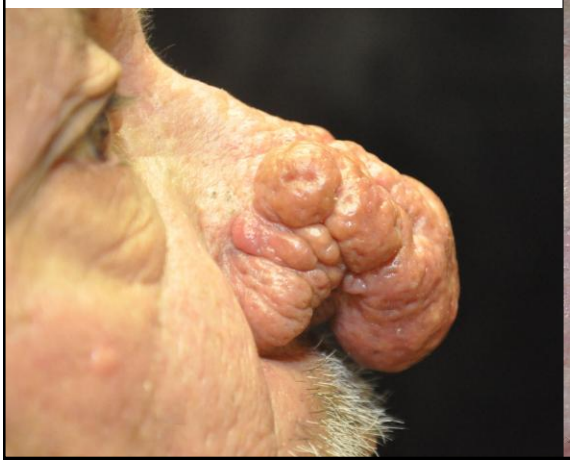
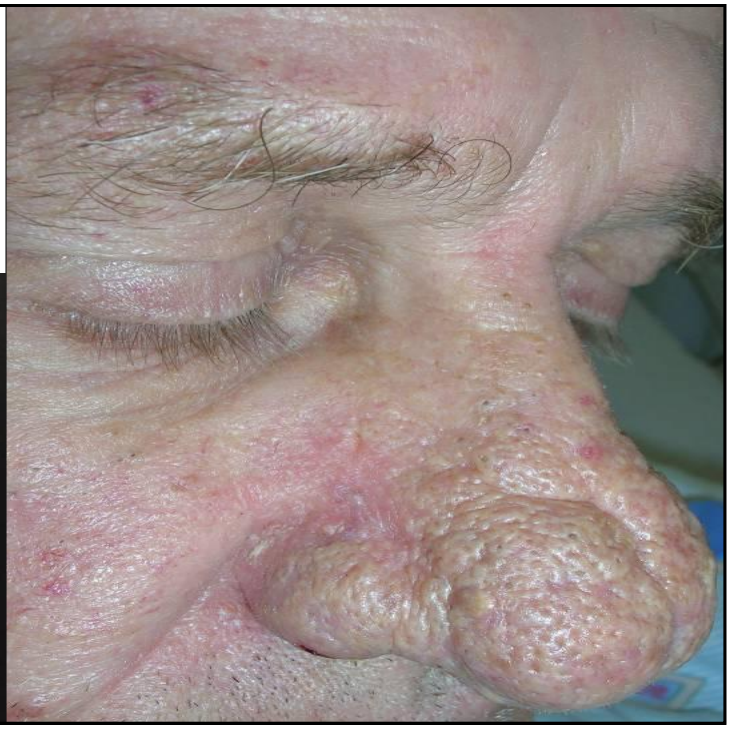
Rhinophymatous Rosacea





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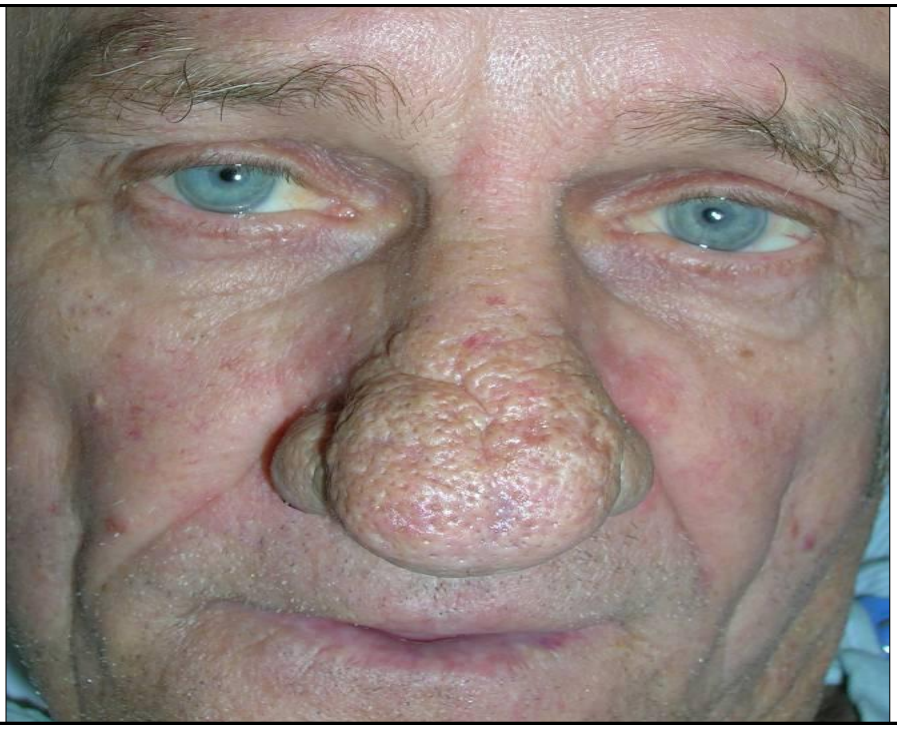

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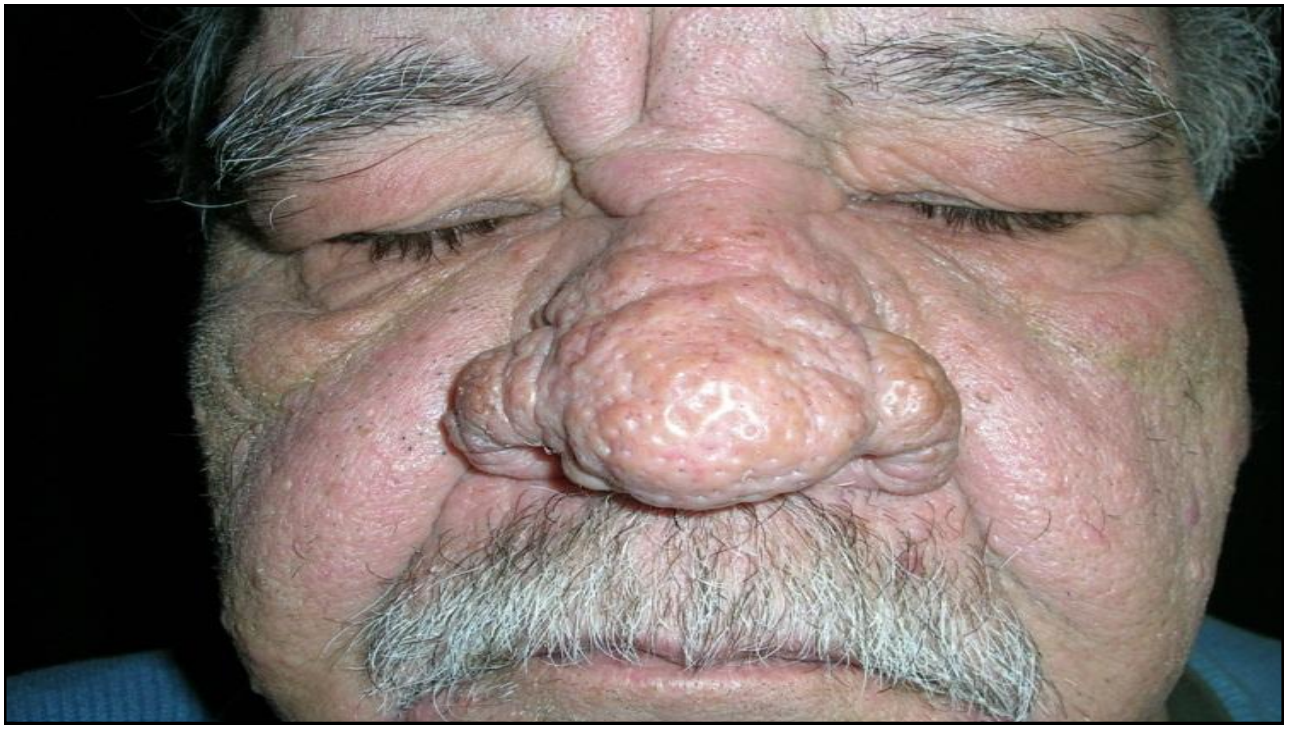

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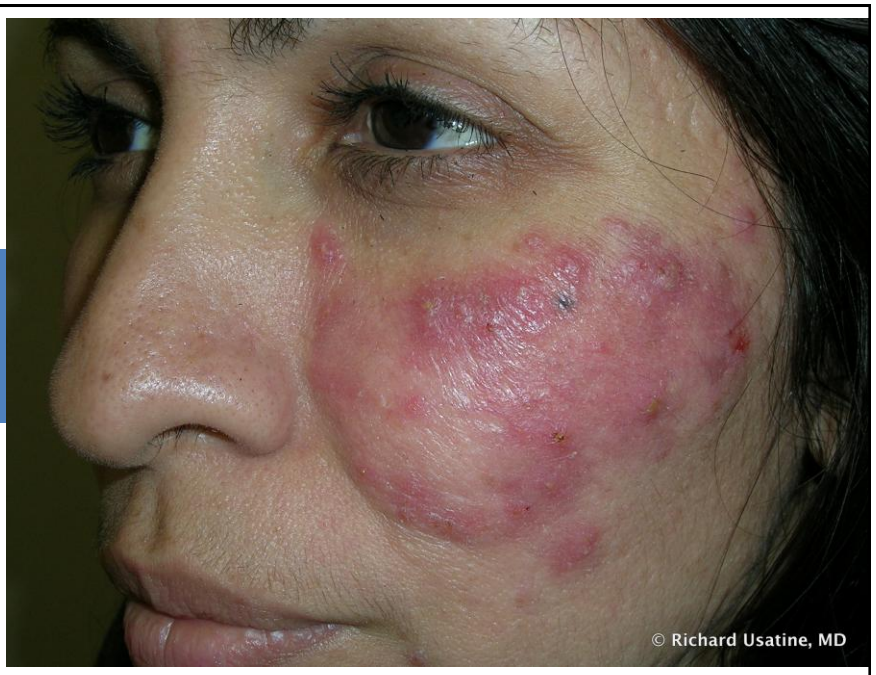
Pyoderma Faciale



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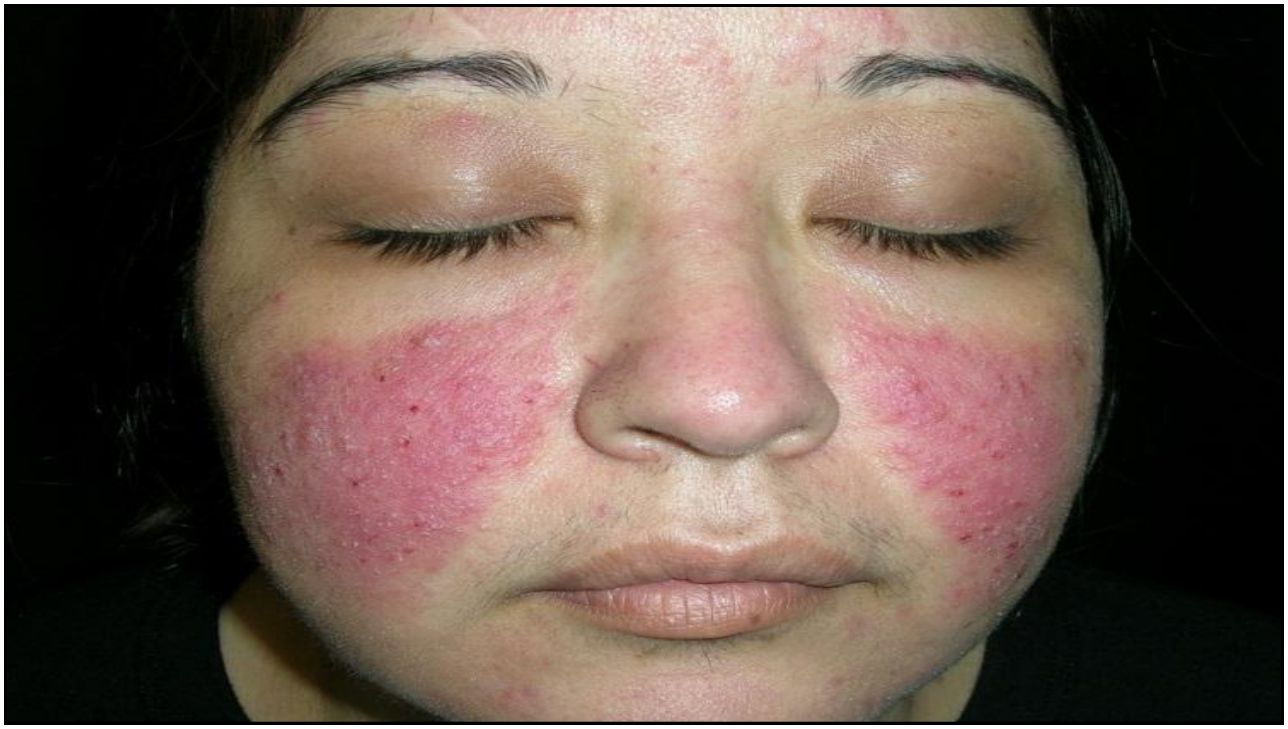

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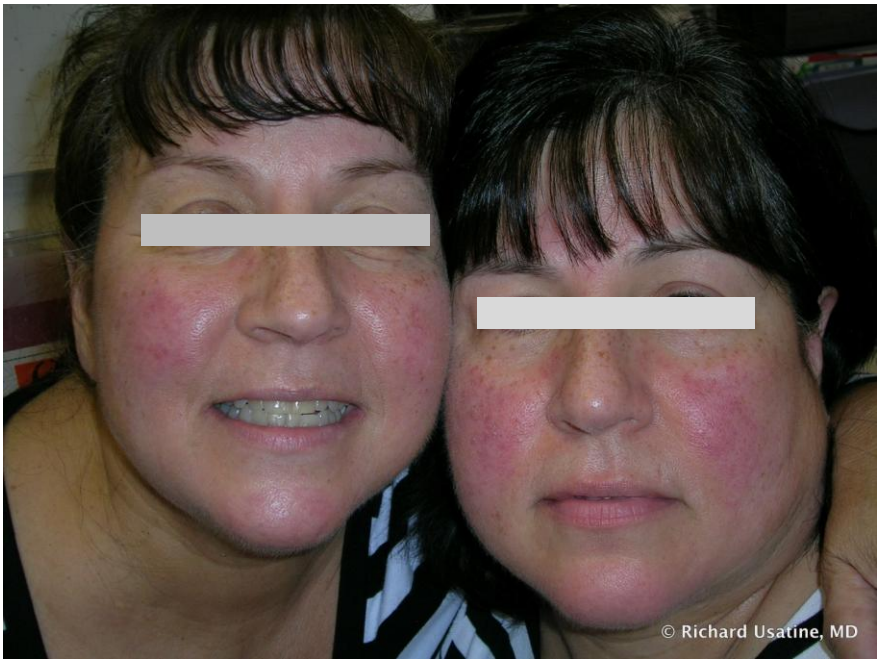

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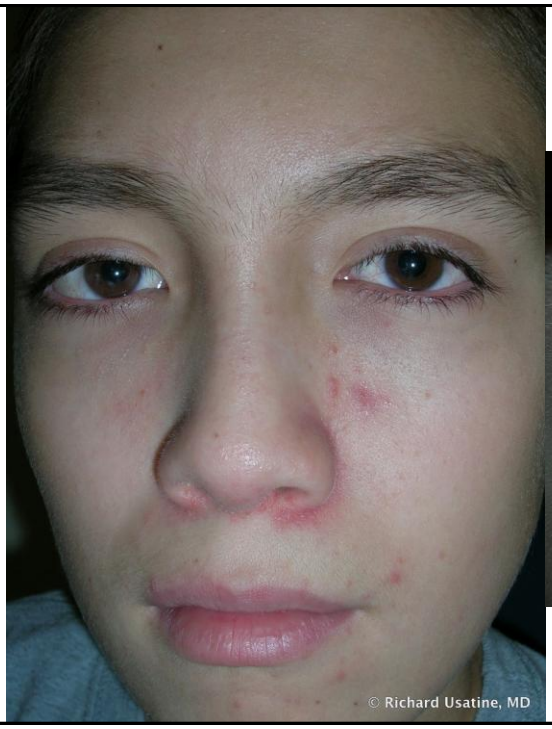

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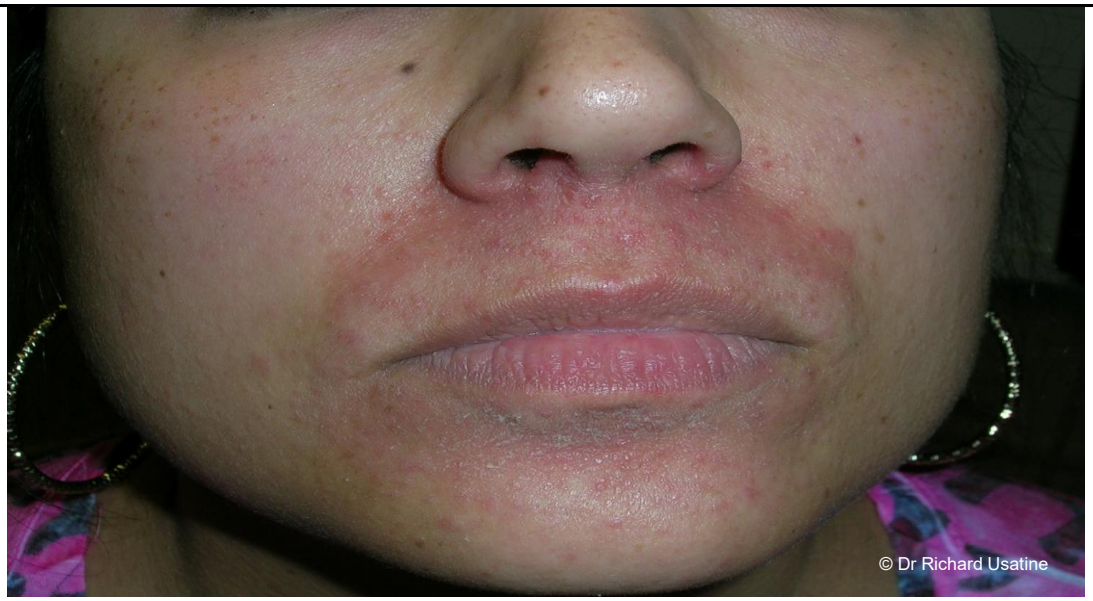

Periorificial Dermatitis

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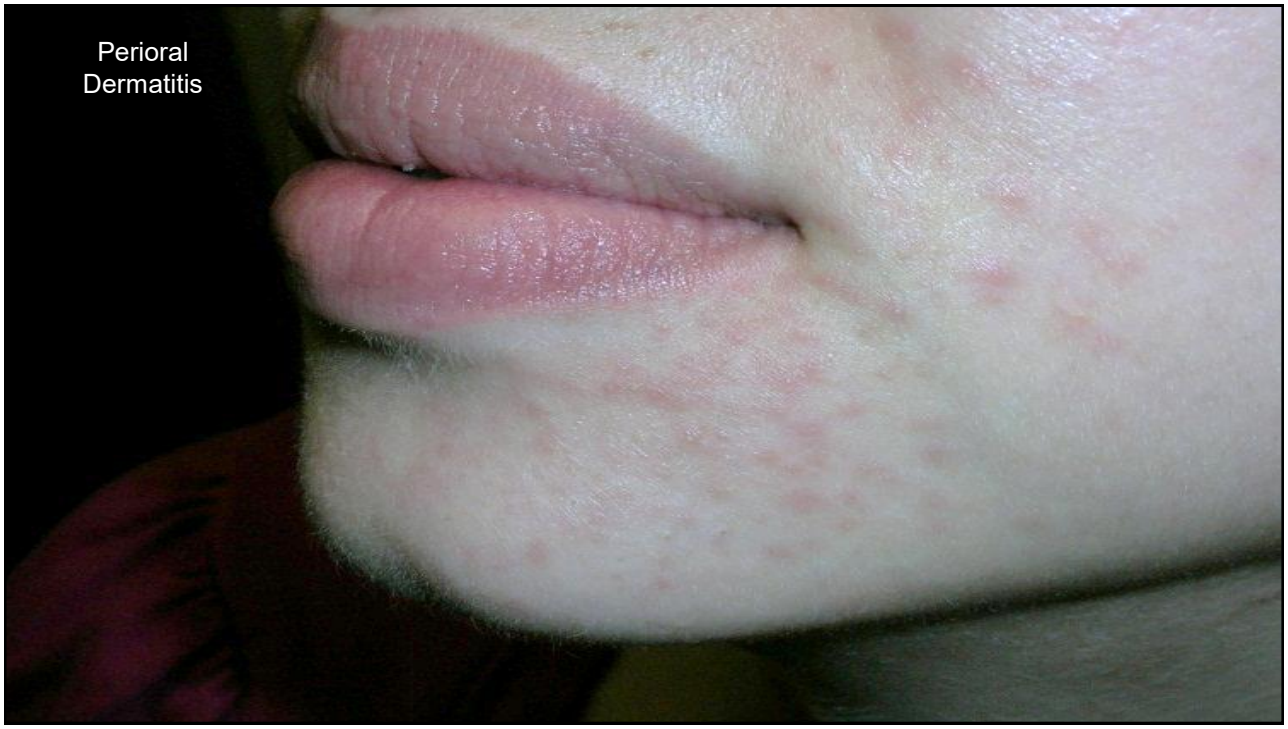

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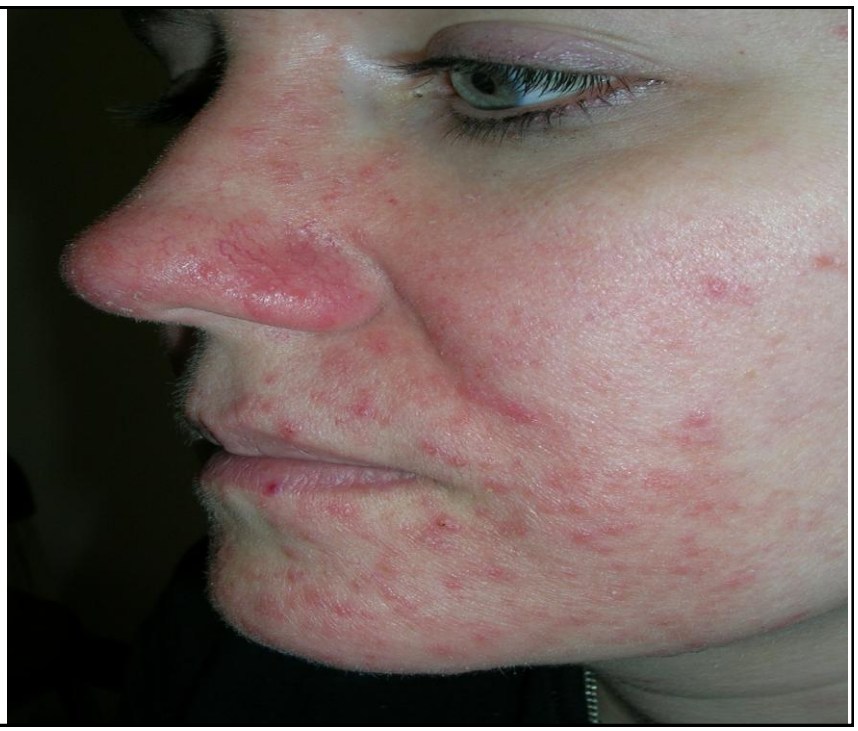
Rosacea Treatment



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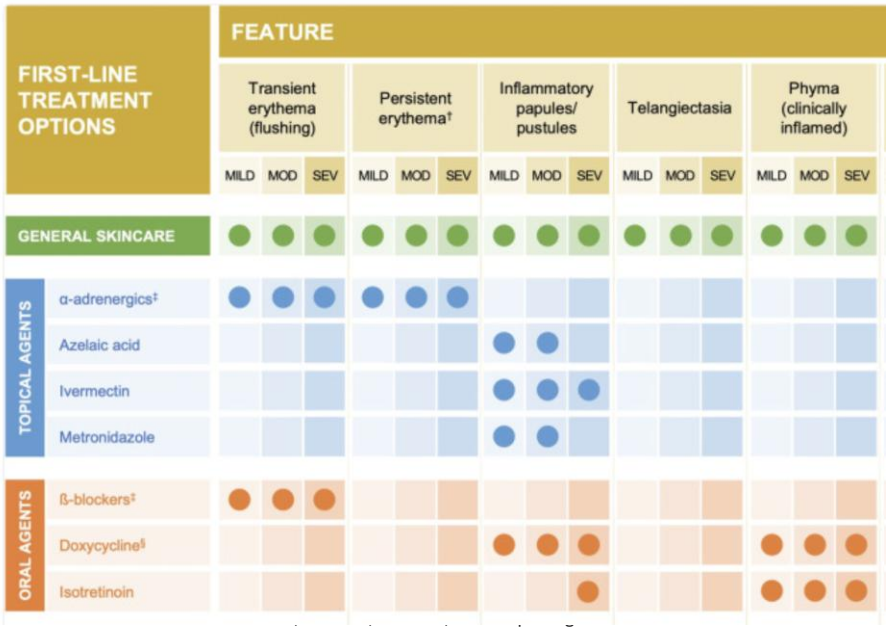

Longitudinal Rosacea Management. *Dermatol Ther (Heidelb)*. 2026;16(2):741-761. doi:10.1007/s13555-025-01612-x

95

Cochrane Database

- Oral doxycycline is significantly more effective than placebo
- No statistically significant difference in effectiveness between the 100-mg and 40-mg doses
- fewer side effects with lower dose

- Interventions for rosacea. Cochrane Database Syst Rev. 2015 Apr 28;(4):CD003262

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Oral Meds

- Best for papulopustular & ocular rosacea
- Doxycycline (high quality evidence – Cochrane 2015)
  - 50-100 mg qd-bid
    - 20mg qd, 40 mg qd
- Minocycline (low quality evidence – Cochrane 2015)
  - 50-100 mg qd-bid, 1mg/kg qd
- Erythromycin (best choice for pediatric rosacea to avoid dental staining) 30-50 mg/kg/day divided bid-qid

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Topical Meds (Best for Papulopustular)

High quality evidence for:

- Topical azelaic acid and topical ivermectin
- Azelaic acid applied bid -15% gel or 20% cream
- Ivermectin – 1% cream applied daily

- Topical metronidazole once to twice daily (moderate quality evidence)
  - Gel or cream – 1% or 0.75%
  - Interventions for rosacea. Cochrane Database Syst Rev. 2015 Apr 28;(4):CD003262

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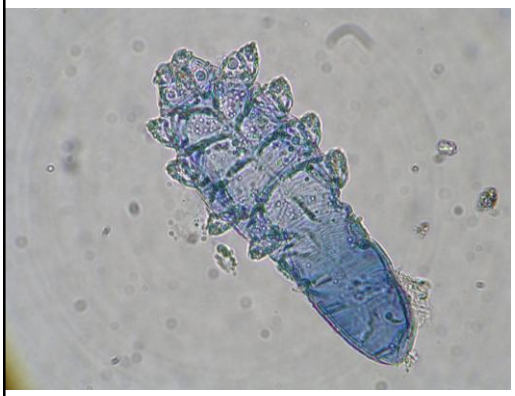
Demodex and Rosacea



- Overgrowth of *Demodex* mite is a possible cause of rosacea
  - one RCT* showed permethrin bid to be equally effective to metronidazole gel over 60 day treatment period - **Kocak M, et al. : Dermatology 2002;205:265-70.*
  - Most recently we have high quality evidence for topical ivermectin**
  - **Interventions for rosacea. Cochrane Database Syst Rev. 2015 Apr 28;(4):CD003262

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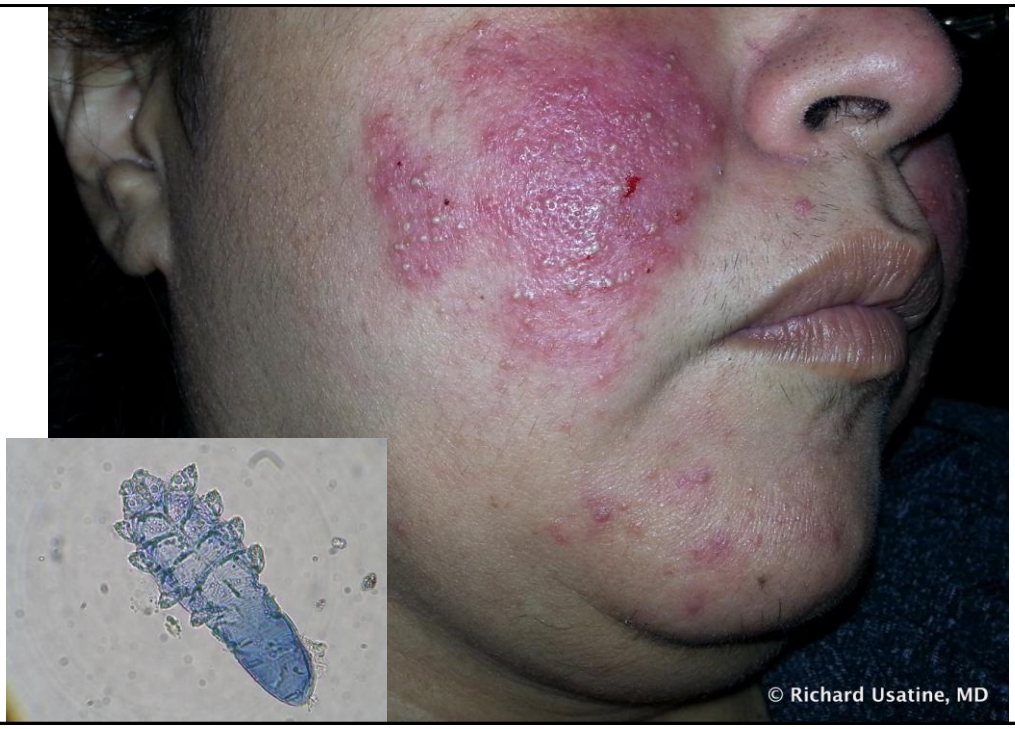

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Ivermectin Topical

- Topical 1% ivermectin cream
  - >$600 for 45 gm
  - $142 with GoodRx discount
- 2020 meta-analysis, ivermectin showed higher efficacy than metronidazole and azelaic acid
  - Dermatol Ther. 2020 Jan;33(1):e13203. doi: 10.1111/dth.13203. Epub 2020 Jan 2. PMID: 31863543.

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Topical Ivermectin Paste $20 Online

Only 6 grams so about the same price per gram as the cream with the discount

But it is apple flavored and almost 2%

Reference: Dermatologist 2018

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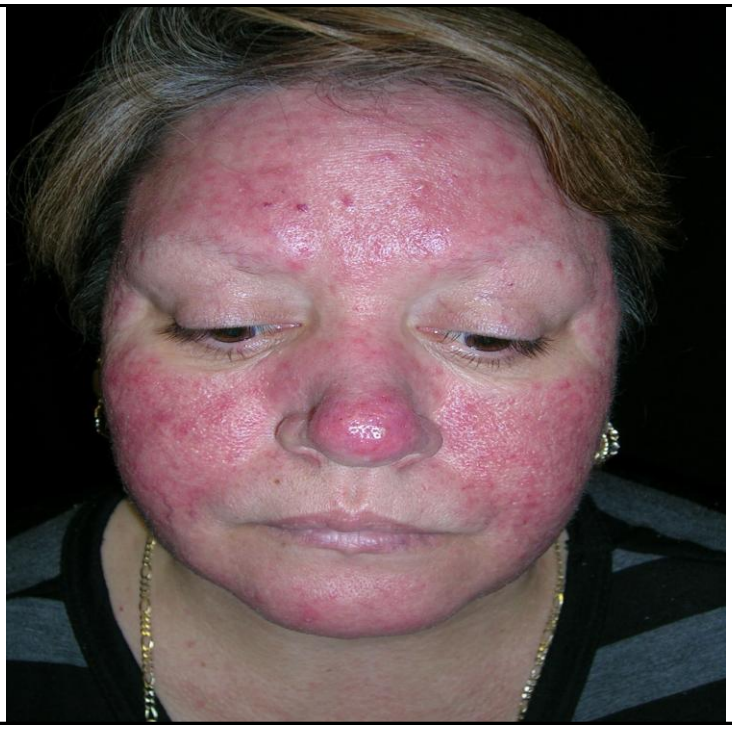
Erythema and Telangiectasias

Brimonidine

- Alpha-2 adrenergic agonist
- Indicated for persistent facial erythema of rosacea
- Apply topically to face once daily
- High quality of evidence to support this
  - Interventions for rosacea. Cochrane Database Syst Rev. 2015 Apr 28;(4):CD003262
- OTC alternative is oxymetazoline (for nasal congestion) applied topically

104



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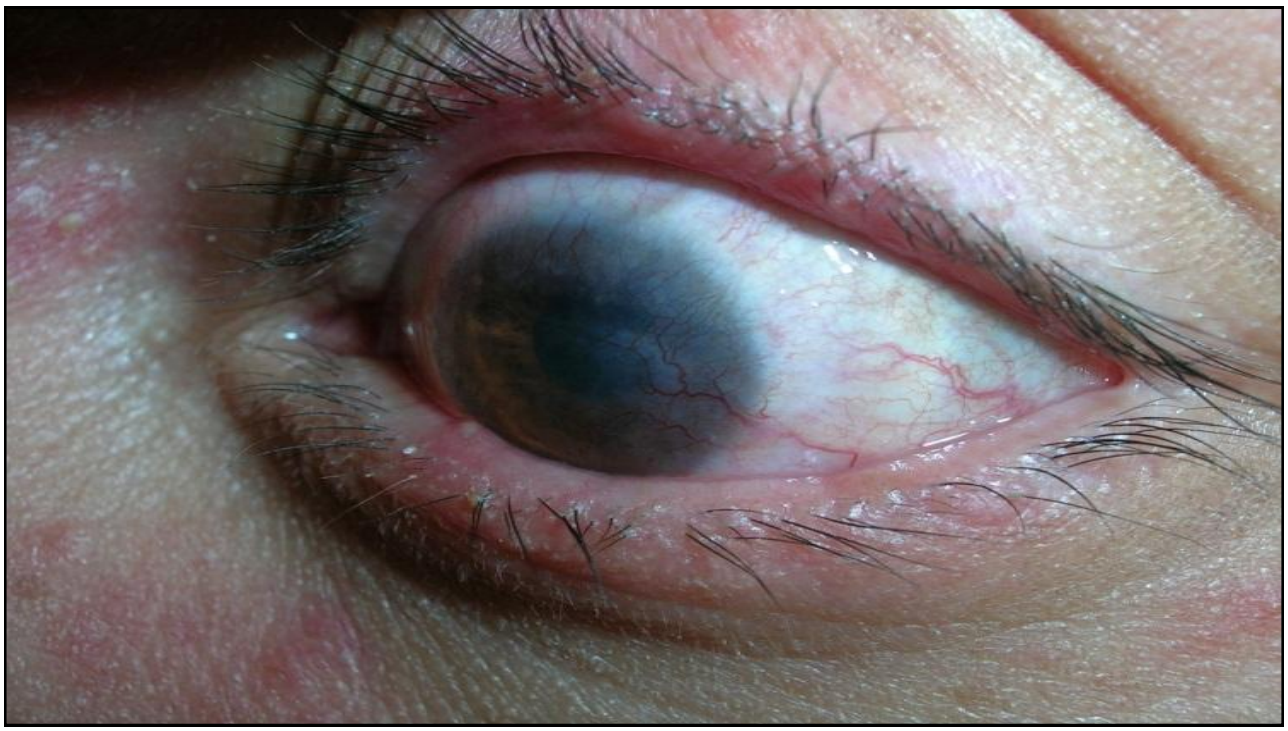

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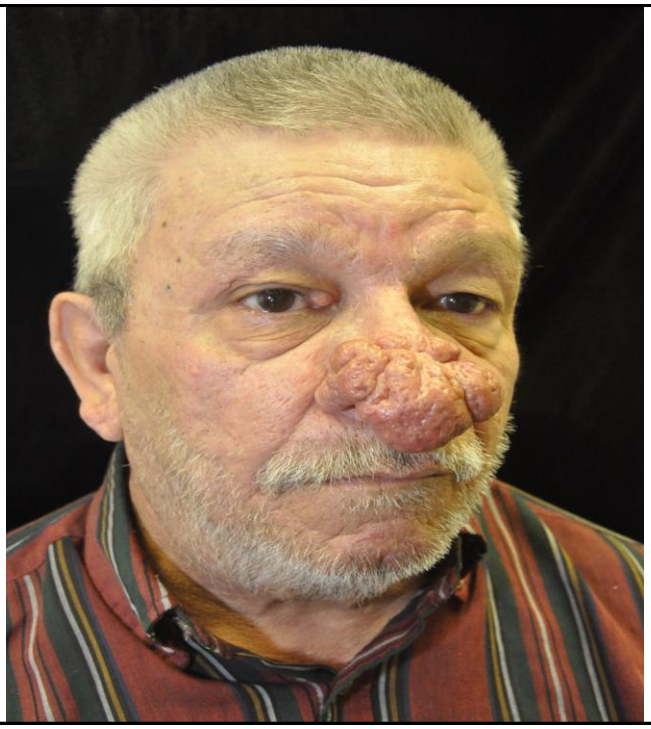
Ocular Rosacea

- Oral doxycycline is first line
- Lid hygiene and warm compresses
- Topical ophthalmic cyclosporine 0.05% (Restasis) is more effective than artificial tears for the treatment of rosacea-associated lid and corneal changes.*

*Efficacy of topical cyclosporine for the treatment of ocular rosacea. *Adv Ther* 2009;26:651-659.

Interventions for rosacea. Cochrane Database Syst Rev. 2015 Apr 28;(4):CD003262 rates evidence for topical cyclosporine as low quality.

107



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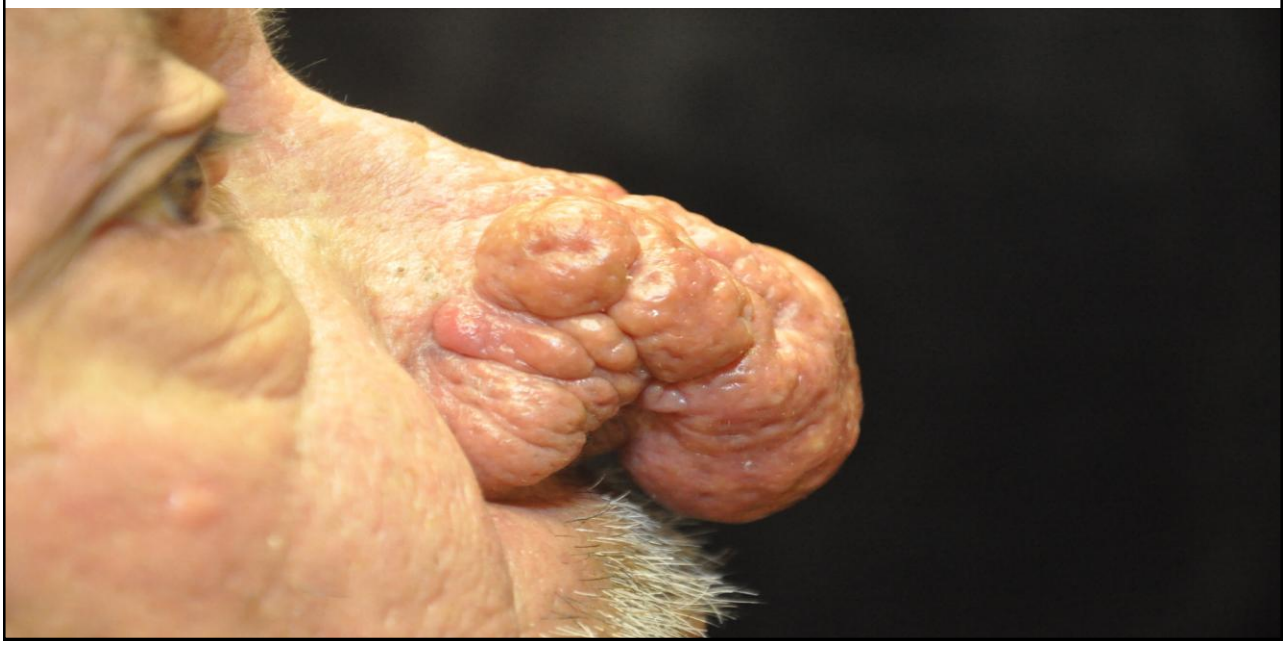
Electrosurgery with Radiofrequency Device



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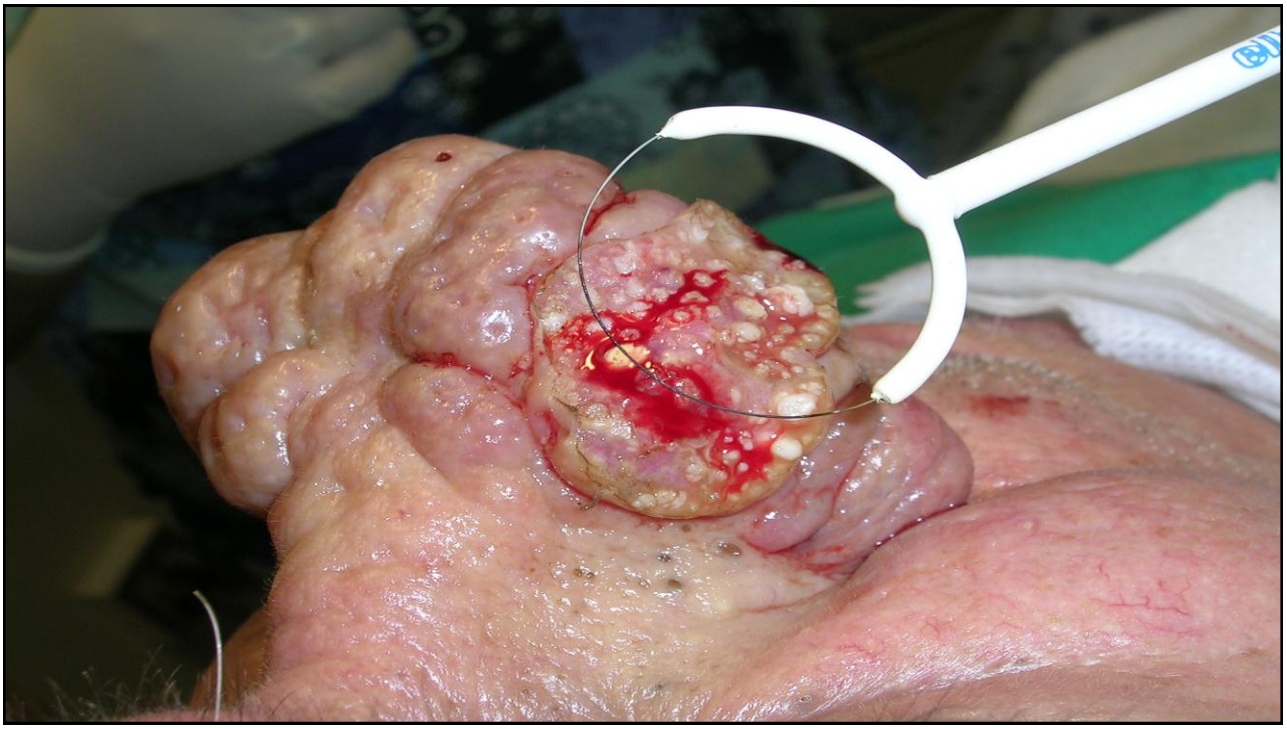

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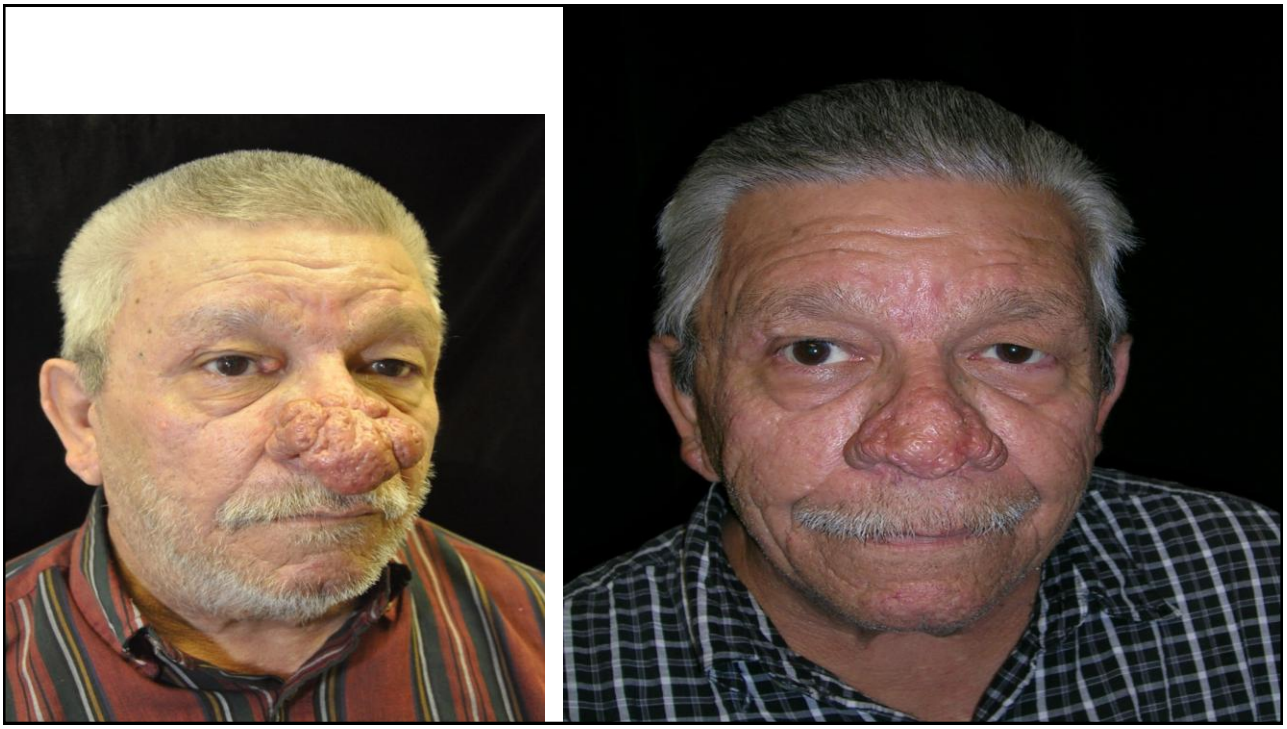

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Acne vs Rosacea??

- Acne
  - Comedones
  - T zone, Jaw line
  - Teens, young women
  - No ocular involvement
  - Triggers : mechanical, hormonal
- Rosacea
  - NO comedones
  - Central face
  - Older adults
  - Ocular involvement
  - Triggers: sun, alcohol, caffeine, hot weather

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Conclusion

- There is a wide differential diagnosis for red eruptions on the face
- Make a specific diagnosis and then treat accordingly

113

References

- Comparative efficacy and safety of oral azithromycin versus doxycycline in moderate-to-severe Acne vulgaris: a systematic review and meta-analysis. J Dermatolog Treat. 2026 Dec;37(1):2648406
- Efficacy and safety of oral doxycycline for acne vulgaris treatment: A systematic review and meta-analysis. Saudi Pharm J. 2026 Mar 17;34(2):13. doi:
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