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Pseudofolliculitis of the Beard

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Synonyms and related keywords: PFB, pseudofolliculitis barbae, pili incarnati, folliculitis barbae traumatica, chronic scarring pseudofolliculitis of the negro beard, shaving bumps, razor bumps, ingrown hairs, pseudofolliculitis pubis

AUTHOR INFORMATION

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INTRODUCTION

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Background: Pseudofolliculitis barbae (PFB) or shaving bumps is a foreign body inflammatory reaction involving papules and pustules. It primarily affects curly haired males who shave. It can also affect some white men and hirsute black women. Pseudofolliculitis pubis is a similar condition occurring after pubic hair is shaved.

Pathophysiology: Two mechanisms are involved in the pathogenesis of PFB: (1)

extrafollicular penetration occurs when a curly hair reenters the skin, and (2) transfollicular penetration occurs when the sharp tip of a growing hair pierces the follicle wall.

Black men who shave are predisposed to this condition because of their tightly curved hair. The sharp pointed hair from a recent shave briefly surfaces from the skin and reenters a short distance away. Several methods of close shaving result in a hair cut below the surface. These methods include pulling the skin taut while shaving, shaving against the grain, plucking hairs with tweezers, removing hairs with electrolysis, and using double- or triple-bladed razors. The close shave results in a sharp tip below the skin surface, which is then more likely to pierce the follicular wall, causing PRB with transfollicular penetration.

Frequency:

- **In the US:** About 10-80% of adult black men have PFB, particularly those who shave closely on a regular basis. It is a significant problem in black men in the military where regulations require a clean-shaven face.

Mortality/Morbidity: Although usually not regarded as a serious medical problem, PFB can cause cosmetic disfigurement. The papules can lead to scarring, postinflammatory hyperpigmentation, secondary infection, and keloid formation.

Race: PFB is found mostly in black men.

Sex: Men with facial hair comprise most patients, although hirsute women can get PFB as well. Both sexes can get pseudofolliculitis pubis.

Age: PFB affects men with facial hair (postpuberty).

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History:

- Patients complain of a painful acneiform eruption that occurs after shaving.
- The patient's shaving history, including the method and the frequency, may reveal an improper shaving technique.
- The method for preparation of the beard, the use of medications or depilatories, and the use of hair-releasing procedures should be discussed with the patient.

Physical:

- The primary lesion is a flesh-colored or erythematous papule with a hair shaft in its center. If the hair shaft is gently lifted up, the free end of the hair comes

out of the papule.

- These inflammatory papules are seen in shaved areas adjacent to the follicular ostia (see Image 1).
- Pustules and abscess formation can occur from secondary infection.
- Postinflammatory hyperpigmentation, scarring, and keloid formation may occur in chronic or improperly treated cases.

Causes: African Americans are genetically predisposed to PFB because of the curvature of their hair follicles. Improper shaving techniques and the desire for a clean-shaven appearance can result in ingrown hairs via extrafollicular or transfollicular penetration.

DIFFERENTIALS

Acne Vulgaris
Folliculitis
Sarcoidosis
Tinea Barbae

Other Problems to be Considered:

Acne keloidalis nuchae (may coexist with PFB)

WORKUP

Lab Studies:

- A clinical diagnosis can usually be made.

Procedures:

- A case of sarcoid infiltrating lesions of PFB has been documented. Biopsy may be perfor sarcoidosis is suspected.
- See Medical Care and Deterrence/Prevention for a discussion of shaving and hair-releas techniques.

Histologic Findings: The penetrating hair causes invagination of the epidermis with inflamma intraepidermal abscesses. With penetration of the dermis, the epidermis grows down to try to e the hair, and severe inflammation, abscess formation, and a foreign-body giant cell reaction oc tip of the hair.

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Medical Care:

- Chemical depilatories work by breaking the disulfide bonds in hair, which results in the ha broken off bluntly at the follicular opening.
    - Barium sulfide powder depilatories of about 2% strength can be made into a paste and applied to the beard area. This paste is removed after 3-5 minutes.
    - Calcium thioglycolate preparations come as powder, lotions, creams, and pastes. T mercaptan odor is often masked with fragrance. In rare cases, this fragrance can c allergic reaction. Calcium thioglycolate preparations take longer to work and are lef minutes; chemical burns result if left on too long.
    - Chemical depilatories should not be used every day because they cause skin irritat second or third day is an acceptable regimen. Irritation can be countered by using hydrocortisone cream. A lower pH or concentration, or a different brand, may also p irritating. Several products are available; therefore, trying a different product is enco one depilatory proves to be unacceptable.
- Topically applied tretinoin (Retin-A) has shown promise for some patients. When used ni alleviates hyperkeratosis. It may remove the thin covering of epidermis that the hair becc embedded in upon emerging from the follicle.
- Mild topical corticosteroid creams reduce inflammation of papular lesions.
- For severe cases of PFB with pustules and abscess formation, topical and oral antibiotic indicated.
    - Topical antibiotics may successfully reduce skin bacteria and treat secondary infec topicals include erythromycin, clindamycin, and Benzamycin. Applying one of these once or twice per day is effective. Benzoyl peroxide applied topically once a day is effective in reducing bacterial populations. It should be used sparingly and may be sensitive skin. It is a good first-line topical agent for persons with oily skin. Benzam combination of erythromycin and benzoyl peroxide. A once daily application has the of both agents.
    - If pustules or abscess formation is evident, an oral antibiotic is indicated. Tetracycli common choice for a systemic antibiotic. Similar to a standard acne regimen, a dos mg twice a day used initially for 1-3 months is often effective.

Surgical Care: Newer hair removal lasers may have a role in the treatment of PFB. The proble most laser and high-intensity light source hair removal modalities is that the natural skin pigme damaged by the laser because melanin in the hair shaft is the target chromophore. Devices be studied at this time may avoid this depigmenting complication.

Diet: No dietary therapies for PFB have proven effective, and no dietary triggers of the conditi been identified.

MEDICATION

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Hydrocortisone cream is effective in reducing inflammation. Topical and oral antibiotics are us secondary infection is evident. Tretinoin has shown promise in early PFB. Chemical depilatori preferential to shaving for some patients.

Drug Category: *Chemical depilatories* -- These agents are effective alternatives to shavin patients. They work by breaking disulfide bonds in hair follicles.

Drug Name	Barium sulfide -- A fast-acting depilatory powder that is mixed with water to form a paste.
Adult Dose	Apply thin paste and leave on for 3-5 min
Pediatric Dose	Apply as in adults
Contraindications	Documented hypersensitivity
Interactions	None reported
Pregnancy	C - Safety for use during pregnancy has not been established.
Precautions	Pregnancy class is not listed; product is fast acting and can cause a chemical burn if left on too long; has foul odor and is poisonous if ingested

Drug Name	Calcium thioglycolate -- Effective depilatory that is left on for 10-15 min.
Adult Dose	Apply sparingly to lesions
Pediatric Dose	Apply as in adults
Contraindications	Documented hypersensitivity
Interactions	None reported
Pregnancy	C - Safety for use during pregnancy has not been established.
Precautions	Pregnancy class is not listed; chemical burn can result if preparation is left on too long

Drug Category: *Antibiotics* -- Empiric antimicrobial therapy must be comprehensive and sh all likely pathogens in the context of the clinical setting. Topical preparations reduce bacterial and secondary infection.

Drug Name	Tetracycline (Achromycin V, Sumycin) -- Used orally to treat secondary infection. Treats gram-positive and gram-negative organisms as well as mycoplasmal, chlamydial, and rickettsial infections. Inhibits bacterial protein synthesis by binding with 30S and possibly 50S ribosomal subunits.
Adult Dose	500 mg PO bid

Pediatric Dose	<8 years: Not recommended >8 years: 25-50 mg/kg/d (10-20 mg/lb) PO qid
Contraindications	Documented hypersensitivity; severe hepatic dysfunction; pregnancy; breastfeeding
Interactions	Bioavailability decreases with antacids containing aluminum, calcium, magnesium, iron, or bismuth subsalicylate; can decrease effects of oral contraceptives, causing breakthrough bleeding and increased risk of pregnancy; tetracyclines can increase hypoprothrombinemic effects of anticoagulants
Pregnancy	D - Unsafe in pregnancy
Precautions	Photosensitivity may occur with prolonged exposure to sunlight or tanning equipment; reduce dose in renal and/or liver impairment; consider drug serum level determinations in prolonged therapy; tetracycline use during tooth development (last one half of pregnancy through age 8 y) can cause permanent discoloration of teeth; Fanconilike syndrome may occur with outdated tetracyclines

Drug Name	Erythromycin (T-Stat) -- 2% topical solution. Inhibits bacterial growth, possibly by blocking dissociation of peptidyl tRNA from ribosomes, causing RNA-dependent protein synthesis to arrest. For treatment of staphylococcal and streptococcal infections.
Adult Dose	Apply topically qd/bid
Pediatric Dose	Apply as in adults
Contraindications	Documented hypersensitivity
Interactions	Additive irritation with other topical agents (eg, tretinoin)
Pregnancy	B - Usually safe but benefits must outweigh the risks.
Precautions	For external use only; keep away from eyes and mucous membranes

Drug Category: *Retinoids* -- These agents decrease the cohesiveness of abnormal hyperpr keratinocytes, and they may reduce the potential for malignant degeneration. They modulate k differentiation. They have been shown to reduce the risk of skin cancer formation in patients w undergone renal transplantation.

Drug Name	Tretinoin (Retin-A) -- Inhibits microcomedo formation and eliminates existing lesions. Makes keratinocytes in sebaceous follicles less adherent and easier to remove. Applied topically, reduces outbreaks of mild PFB. Available as 0.025%, 0.05%, and 0.1% creams. Also available as 0.01% and 0.025% gels.
Adult Dose	Apply topically 2 times/wk to qhs; titrate to effect

Pediatric Dose	<12 years: Not established >12 years: Apply as in adults
Contraindications	Documented hypersensitivity; eczema; sunburn
Interactions	Toxicity increases with coadministration of benzoyl peroxide, salicylic acid, and resorcinol; avoid topical sulfur, resorcinol, salicylic acid, other keratolytics, abrasives, astringents, spices, and lime
Pregnancy	C - Safety for use during pregnancy has not been established.
Precautions	May take several wk for skin to adapt to irritative effect; by starting application every wk and slowly increasing to qhs noncompliance from warmth and redness is decreased; avoid eyes and mucous membranes; minimize exposure to sun and UV light; do not apply to mucous membranes, mouth, and angles of nose

Drug Category: *Corticosteroids* -- These agents are used to reduce inflammation and irrita agents have anti-inflammatory properties and cause profound and varied metabolic effects. Th the body's immune response to diverse stimuli.

Drug Name	Hydrocortisone (Cortaid) -- 1% cream. Adrenocorticosteroid derivative suitable for application to skin or external mucous membranes. Has mineralocorticoid and glucocorticoid effects, resulting in anti-inflammatory activity. Effective when used topically on a short-term basis.
Adult Dose	Apply sparingly to affected areas bid
Pediatric Dose	Apply as in adults
Contraindications	Documented hypersensitivity; viral, fungal, and bacterial skin infections
Interactions	None reported
Pregnancy	C - Safety for use during pregnancy has not been established.
Precautions	Prolonged use, applying over large surface areas, applying potent steroids, and using occlusive dressings may increase systemic absorption of corticosteroids and may cause Cushing syndrome, reversible HPA-axis suppression, hyperglycemia, and glycosuria

FOLLOW-UP

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Further Outpatient Care:

- Outpatient evaluation and patient education is effective. With proper techniques, transfol

extrafollicular penetration can be minimized.

Deterrence/Prevention:

- Hair-releasing procedures and shaving should be performed after a shower to hydrate ar both the skin and the hair. Subsequent shaving results in a more dull, rounded tip to the is less likely to reenter the skin.
- Wash the beard with a face cloth, a wet sponge, or a soft-bristled toothbrush with a mild several minutes using a circular motion. This technique helps to dislodge stubborn tips.
- Using needles or toothpicks to dislodge stubborn tips is controversial. It usually is not recommended because overly aggressive digging with sharp objects can cause further c the skin.
- Patients with PFB may use razors if single-edged, foil-guarded, safety razors are used. D triple-bladed razors shave too closely and should not be used. Commercially available fo razors have about 30% of the blade covered by foil, which prevents the blade from shavi too closely.
- Electric razors have acceptable results if used properly. The recommended technique wi headed rotary electric razor is to keep the heads slightly off the surface of the skin and to a slow, circular motion. Do not press the electric razor close to the skin or pull the skin ta this results in too close of a shave. Some electric razors have "dial in" settings for the clo the shave. These may be effective if kept off of the closest settings.
- Electric clippers are effective for resistant cases of PFB. With clippers, 1- to 2-mm stubbl left on the face. The tendency to shave too closely is reduced with this method, making i effective. The appearance of stubble may be cosmetically unacceptable for some patient

Complications:

- Although usually not regarded as a serious medical problem, PFB may cause cosmetic disfigurement. The papules may lead to scarring, postinflammatory hyperpigmentation, s infection, and keloid formation.

Prognosis:

- No cure exists, but effective treatment is available. If the patient is able to grow a beard, problem usually disappears (except for any residual scarring).

Patient Education:

- Instruct the patient to stop shaving for 3-4 weeks. This gives adequate time for the hair fo grow to a length where ingrown hairs will spring free.

MISCELLANEOUS

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Special Concerns:

- PFB is of particular concern in persons in the military. Enforcement of a clean-shaven fa with this condition can cause scarring, hyperpigmentation, secondary infection, and keloi formation. The lack of understanding of this disease has created tension and hostility bet soldiers and their chain of command. Proper education on shaving methods and treatme including judicious breaks from shaving (no shaving profiles), is essential.

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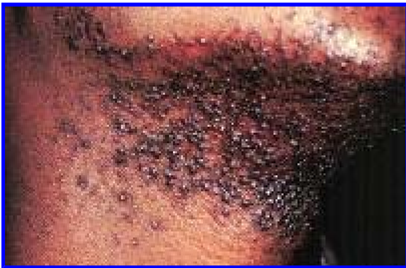
Caption: Picture 1. Pseudofolliculitis barbae on the neck of a black man.



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- Alexander AM: Evaluation of a foil-guarded shaver in the management of pseudofolliculit Cutis 1981 May; 27(5): 534-7, 540-2[Medline].
- Alexander AM, Delph WI: Pseudofolliculitis barbae in the military. A medical, administrati social problem. J Natl Med Assoc 1974 Nov; 66(6): 459-64, 479[Medline].
- Brauner GJ, Flandermeyer KL: Pseudofolliculitis barbae. Medical consequences of interr friction in the US Army. Cutis 1979 Jan; 23(1): 61-6[Medline].
- Brown LA Jr: Pathogenesis and treatment of pseudofolliculitis barbae. Cutis 1983 Oct; 3 [Medline].
- Childs ND: Tretinoin, hydrocortisone cream controls PFB. Skin and Allergy News 1999; 3
- Coquilla BH, Lewis CW: Management of pseudofolliculitis barbae. Mil Med 1995 May; 16 9[Medline].
- Crutchfield CE 3rd: The causes and treatment of pseudofolliculitis barbae. Cutis 1998 Ju 351-6[Medline].
- Galaznik JG: A Pseudofolliculitis Barbae clinic for the black male who has to shave. J An Health 1984 Dec; 33(3): 126-7[Medline].
- Halder RM: Pseudofolliculitis barbae and related disorders. Dermatol Clin 1988 Jul; 6(3): [Medline].
- Kligman AM, Mills OH Jr: Pseudofolliculitis of the beard and topically applied tretinoin. Ar Dermatol 1973 Apr; 107(4): 551-2[Medline].
- Nidecke A: Saving face: help black men avoid pseudofollicultis barbae. Skin and Allergy 1998; 29 (10): 46.
- Olsen EA: Methods of hair removal. J Am Acad Dermatol 1999 Feb; 40(2 Pt 1): 143-55; [Medline].

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