



Insight Dermatologic Problems

Acne and Acneiform Eruptions

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Acne affects almost all teenagers at some time during their adolescence. Severity, type of involvement, and duration vary greatly. So does the individual's reaction to these zits, pimples, and cysts. Many budding personalities are permanently marred by the psychologic trauma of having disfiguring acne lesions on the face, back, or chest.

Etiology

The basic cause of acne is unknown, but hormones and heredity play major roles (Fig 1). The basic problem appears to be a cohesiveness of the cells lining the hair follicles. This cohesiveness causes a blockage that prevents sebum from exiting out to the surface of the skin. The subsequent buildup of sebum produces the comedo (Fig 2). These noninflammatory lesions are called whiteheads when close to the surface, and blackheads when open. The darker color of the blackhead is not due to dirt, but to oxidation of melanocytes in the basal cell layer of the skin.

Within the swollen hair follicle, *Corynebacterium acnes* breaks down the sebum into free fatty acids (FFA) and glycerol. It digests the latter, but the FFAs remain. When the follicle wall ruptures, it releases these FFAs which are irritants within the dermis. This causes white



Figure 1. Acne neonatorum, caused by transplacental maternal hormones, clears spontaneously within a few months.

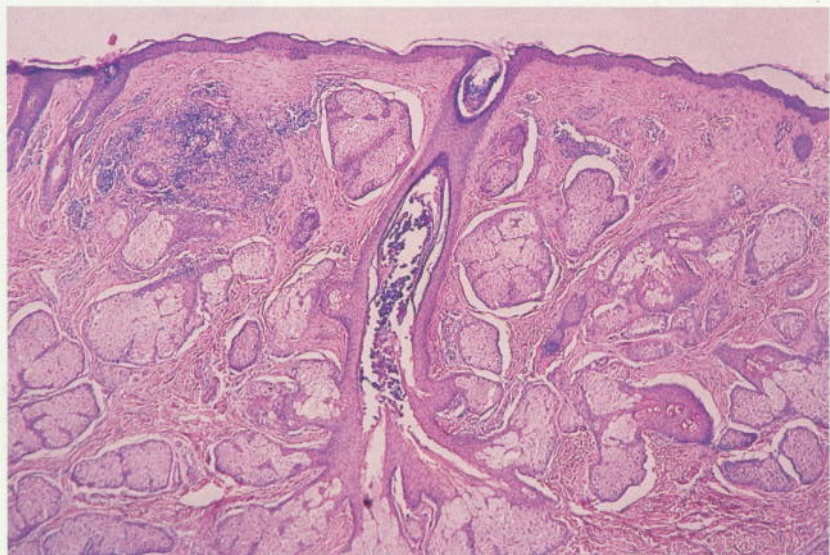


Figure 2. Microscopic overview of typical comedo, with blocked orifice. Note profusion of sebaceous glands.



Figure 3. Typical "mixed acne," containing whiteheads and blackheads as well as inflammatory red papules and pustules.

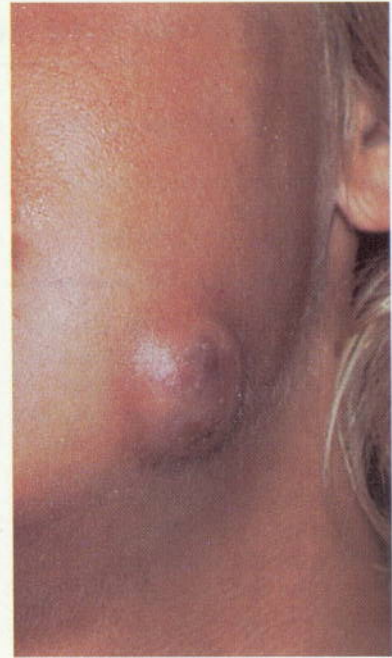


Figure 4. Ruptured pilar cyst, requiring immediate administration of oral antibiotics.

blood cells to migrate to the area; along with dilatation of small blood vessels, and results in the inflammatory types of acne lesions, the red papules, and pustules. When this blockage occurs even deeper within the hair follicle, cysts may develop. Their rupture causes permanent scarring.

Clinical Picture

Acne vulgaris occurs most commonly on the face, back, and chest. (Fig 3, 4). There is a wide array of lesions generally categorized by the presence or absence of inflammation. Non-inflammatory lesions, the comedones—be they whiteheads or blackheads—do not scar unless manipulated and caused to rup-

ture. The inflammatory lesions, as red papules, pustules, and cysts, all tend to scar because they involve rupture into the lower part of the skin, the dermis, whereas comedones stay within the epidermis (Fig 5).

Differential Diagnosis

The diagnosis of acne in most adolescents is simple. Yet certain diseases can mimic acne vulgaris. Acne rosacea contains pustules, yet lacks cysts and has a particular facial distribution. Bacterial folliculitis, especially of the upper arms and buttocks, may mimic inflammatory acne. Topical and systemic medications can cause acneiform eruptions appearing like acne vul-

garis. Such eruptions include steroid acne; traumatic or occupational acne, as on the back of weight lifters, around the chin strap on football players and motor cycle enthusiasts, and those who work in gasoline and service stations (Fig 6); halogen acne (from iodide and bromide-containing compounds); and tropical acne.

Treatment

Major advances have been made in the treatment of acne vulgaris over the past decade. Most of the myriad of over-the-counter products are worthless. Some are actually comedogenic! Essentially all patients with acne can be successfully treated with some combination of the



Figure 5. Acne keloidalis, most common on the chest and back. Dilute intralesional corticosteroids usually are helpful in reducing such lesions.



Figure 6. Occupational acne, from contact with grease and oils in repair of air conditioners.

topical medications of benzoyl peroxide and vitamin A acid and oral antibiotics, usually tetracycline hydrochloride, although minocycline and erythromycin are also effective. When acne surgery is added to this regimen, the results are remarkable.

Patients with noninflammatory acne need only topical

medications. Cleansing with mild soaps removes surface lipids but does not get at the cause of the acne lesions. Too many frustrated teenagers wash their face ten or more times a day. This does not improve their acne, but often worsens it by chapping and irritating the skin. A daily single application of a

vitamin A acid product (Retin-A), cream or gel, in the evening, combined with a topical benzoyl peroxide in the morning (Persa-gel, Benzac, Benzagel, Desquam-X, Xerac) allows for both a loosening of the comedones and a reduction in the *C acnes* bacterial count on the skin surface. Topical treatment should be accompanied by skilled acne surgery, which involves removing the blackheads and whiteheads with sterile instruments including a fine needle and a comedo extractor. Neither bleeding nor scarring is produced by such procedures.

Patients with inflammatory acne require a systemic antibiotic. Tetracycline hydrochloride is the preferred drug. It is inexpensive and usually effective. It must be taken at least one hour before or two hours after meals for maximal gastrointestinal absorption. Minocycline (Minocin) is also very effective and easier to take, thus increasing patient compliance. However, it is much more expensive. These tetracyclines are contraindicated during pregnancy since they can cause irreversible staining of deciduous teeth in the developing fetus when given after the first trimester of pregnancy. Oral erythromycin in a dosage of 250 mg four times a day (or erythromycin ethyl succinate, EES400, 400 mg four times a day) is the proper initial dosage for patients in whom tetracyclines are contraindicated. Oral clindamycin generally is not given for acne because of its gastrointestinal toxicity risk. The penicillins and cephalosporins have no place in the treatment of acne.

The acne sufferer must be advised on the proper choice and use of cosmetics. As a general



Figure 7. Mixed acne cleared within months by combination regimen of topical agents, oral tetracycline, and acne surgery.

tal rabbit ear model used for determining the comedogenicity of products applied to the skin.

Mild peels with dilute trichloroacetic acid and then liquid nitrogen often allow for a more even color and texture of the skin after inflammatory lesions are under control. Acne keloidalis may be treated with dilute intralesional corticosteroids.

Diet has never been shown to play a causative role in acne. Chocolate was shown to have no worsening effect on a large group of acne patients.

Prognosis and Prevention

The prognosis of acne vulgaris is favorable, especially when the patient seeks expert advice at an early stage of the disease (Fig 7). Parents who have had severe acne are advised to have their children given early treatment to minimize the more serious sequela of scarring to both skin and psyche.

The teenager who seeks help for skin problems should be heard and understood. He/she must not be told that "you will outgrow it" or that "the disease isn't really so bad after all."

The physician's effective treatment of acne will make the patient eternally grateful.

rule, water-base makeups are preferred. Mild soaps are better than cleansing creams. Dry skin creams are to be avoided. Sulfur products have been shown to be comedogenic in the experimen-