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Rosacea, sometimes called Acne Rosacea, is a chronic skin disease which affects the central one-third of the face. At one time Rosacea and Acne Vulgaris were thought to be the same disease, but they are now considered as two distinct skin entities. The flush area is very vascular. Rosacea begins with in intermittent temporary vasodilatation of the superficial blood vessels in this area. This results in transient episodes of symmetrical erythema—flushing of the forehead, nose, cheeks and chin—often accompanied by a hot and burning sensation. The erythema varies in intensity from a mild red to a deep bluish red. It develops gradually and recurs at various intervals. Eventually the capillaries in the flush area begin to lose their elasticity. The vasodilatation becomes permanent and a permanent hyperemia develops. This causes hypertrophy of the skin of the nose and subcutaneous tissues and results in the formation of a prominent nose—rhinophyma. When the contractile power of the capillaries is completely exhausted, telangiectasia occurs. Acneiform lesions such as papules and pustules develop later. They vary in size; and in severe cases, the lesions may coalesce. As a result of overactive sebaceous glands, an oily complexion commonly accompanies Rosacea.

Severe cases of Rosacea sometimes occur in conjunction with ocular Rosacea which can result in blindness. According to Wise[1] the most common ocular complications in order of their frequency are Rosacea blepharitis, Rosacea conjunctivitis, Rosacea keratitis and Rosacea iritis. Doggart[2] correlated flare-ups of ocular Rosacea with flare-ups of facial Rosacea. He also found that improvement of Rosacea of the face usually coincided with improvement of ocular Rosacea.

The incidence of Rosacea in women is three times greater than in men. The disease seldom occurs in Negroes. Although there is no age limit, Rosacea is most prevalent in women between the ages of 30 and 60 years. This coincides with middle age when household chores and duties are multiplied and sexual disturbances magnified.

Contributory Causes The etiology of Rosacea is unknown. In 1946 Anderson[3] suggested that a deficiency of Vitamin B_2 might be causative. A year later Tulipan[4] substantiated this theory when he reported that decreased Vitamin B complex intake resulted in peripheral vasodilatation. In 1949 Ayers[5] implicated *Demodex folliculorum* although this parasitic mite has also been found in people who do not have Rosacea. Despite its questionable etiology, the frequent association of Rosacea with certain other conditions tends to incriminate these conditions as contributory factors.

The psychosomatic complex is perhaps the most significant factor in Rosa-

cea. With few exceptions, Rosacea patients have strikingly similar personalities. Outwardly they appear reserved, quiet and shy, self-conscious and passive. Inwardly they feel inferior and often harbor feelings of guilt and shame. They fear social contact, attention and shun responsibility. Because they do not express themselves, tensions slowly accumulate and finally seek outlet in a flare-up of Rosacea. The trigger mechanism varies. Illness or death of a relative or friend, accident or injury, lack of sexual harmony, other sexual disturbances, infidelity, morality issues, financial difficulties, household conflicts, and quarrels may all be precipitating situations. Invariably as the patient relaxes and his emotional problems are resolved, marked improvement in the skin lesions occurs.

Many Rosacea patients have concomitant focal infections. Infections in the gallbladder, appendix, teeth, tonsils and sinuses can produce pustules. Therefore they might be considered additional predisposing causes of Rosacea. Conrad[6] found associated gastrointestinal disturbances such as constipation and colitis. In some instances there is atrophy of the gastric mucosa and achlorhydria.

Rosacea exacerbations are precipitated by anxiety and lack of sleep or proper rest. They may be cyclic, either coinciding with the menses or occurring a few days prior. Rosacea also occurs during the menopause; and its frequency among the anemic and obese is worth mentioning. Seborrhea should be noted among the possible contributory causes of Rosacea although it is questionable whether it actually is a cause or an effect.

Anything, food, drink, contacts, environment, etc. which cause vasodilatation of the capillaries in the flush area of the face invariably aggravate Rosacea. These include alcoholic stimulants, hot food or hot drink, hot showers and hot baths as well as exposure to such elements as cold, wind and sun. Flareups of Rosacea are repeatedly produced by the ingestion of ginger ale and cola beverages as well as spicy foods and condiments.

In their discussion of causative factors Stokes and Beerman[7] found Rosacea to be associated with the seborrheic habitus in eighty percent of their patients, nervous factors in seventy-six percent, gastrointestinal disturbances in sixty-six percent, intake of caffeine and hot beverages in sixty percent, and focal infections in fifty-two percent. Although these percentages varied somewhat in this study, the frequency of these factors appeared to be more than coincidental.

Diagnostic Features of Rosacea

1. Usually females between 30 and 60 years of age.
2. Persistent, symmetrical erythema, limited to the flush area of the face.
3. Presence of telangiectasia and acneiform lesions.
4. Absence of scales, scars and atrophy.
5. Feeling of heat and burning sensation to the face.

Differential Diagnosis

1. Acne vulgaris—Seen at early age (in youth). Comedones, papules,

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NOTE: Since this report was written, I have increased the injection of Kutapressin to 2 cc. and have found it to be even more effective. Injections are given twice weekly during the first three or four weeks and weekly thereafter. Response to treatment is generally evident after the fourth injection. Since writing this report I have added another 95 patients to the series.

pustules, cysts and scars are present.

2. Lupus vulgaris—Apple jelly nodules, scars, scales, tuberculous lesions. No seborrhea and usually no pustules.
3. Lupus erythematosus — Enlarged follicular openings, keratotic plugs, scales, atrophy, destruction of tissue, other sites such as scalp and ears.
4. Seborrheic dermatitis—Wide distribution of greasy scales, no telangiectasia, no acneiform lesions.

Treatment The therapy outlined below has been used during the past 13 years in a series of 280 patients. Therapy may be divided into the following approaches: psychosomatic, local, oral and parenteral.

Psychosomatic The correction of emotional difficulties by re-education is begun immediately. The patient is encouraged to be more aggressive, less reticent and to overcome his fear of responsibility. He is advised to slow down and avoid quarreling. Excitement of all kinds including exciting entertainment is to be avoided. A combination of d-amphetamine and one of the short acting barbiturates taken four times daily is often helpful.

Of prime importance is assurance to the patient that the complexion will improve if instructions are followed to the letter.

Local The face is washed carefully (but not massaged) with one of the newer soapless detergents. During the day a mild astringent is applied. At night a lotio alba is used to help dry the complexion. No creams are allowed.

Where numerous acneiform lesions are present and there is severe oiliness of the face, superficial roentgen therapy has been beneficial. If satisfactory results are not obtained after the administration of 400 r, therapy is discontinued. Where superficial scars have developed, ultra violet therapy is useful in producing exfoliation. Dilated capillaries are destroyed by electrolysis with a very fine needle. Rhinophyma is treated surgically for cosmetic results. Either plastic surgery or surgical diathermy is advocated.

In the presence of seborrhea, the hair should be frequently shampooed with one of the newer cleansing agents containing selenium sulfide.

The patient is cautioned to avoid hot showers, hot baths and undue exposure to the sun or heat.

Oral To aid in relieving emotional disturbances and promote relaxation, sedatives are administered—small doses of a barbiturate or a barbiturate with belladonna extract and ergotamine tartrate.

When achlorhydria is present, dilute hydrochloric acid (10%) 1 to 8 cc. three times daily in milk or fruit juice is prescribed. Since hydrochloric acid affects the enamel of the teeth, it must be sipped through a glass tube. Glutamic acid hydrochloride may be substituted. If hyperacidity is present alkalies such as aluminum hydroxide are given.

Since Rosacea is often associated with focal infections, these are treated and, whenever possible, eradicated.

Regularity in bowel movements is essential. If necessary, a mild laxative such as milk of magnesia or citrate of magnesia is recommended.

Vitamin B complex capsules and brewer's yeast, two tablets three times per day, with 15 grains of ferrous and ammonium citrate have proved helpful.

Patients are instructed to avoid the following vasodilators and gastric irritants: alcohol, coffee, tea and other hot drinks; colas, ginger ale, and iced beverages; hot foods, spicy foods and condiments such as chili, chow-chow, horseradish, mustard, catsup, hot steak sauce. Iodides, bromides and iodized salt are contraindicated. When large pustules are present, carbohydrates are restricted. Patients are urged to relax at mealtime, eat slowly and avoid over-eating.

Parenteral For the pustular form of Rosacea, 1 cc. injections of Vitamin A (100,000 units/cc.) are given once or twice weekly.

In some cases injections of non-specific protein and crude liver extract are of value.

During the last three years in a series of 118 patients, my established therapeutic regimen for the treatment of Rosacea has been augmented by injections of Kutapressin (Kremers-Urban*, Kutapressin is a selective vasoconstrictor isolated from liver extract). It acts selectively on abnormally dilated peripheral blood vessels, mainly on the small arterioles and capillaries, without influencing the systemic blood pressure. In Rosacea, Kutapressin seems to constrict the abnormally dilated capillaries in the flush area of the face thus effectively reducing the hyperemia and erythema.

Burks & Knox[8] reported their success using Kutapressin in the treatment of a series of 226 patients with acne vulgaris. Nierman[9] satisfactorily treated 22 cases of cystic acne vulgaris which had been refractory to conventional methods. Barksdale[10] also used Kutapressin in the treatment of cystic acne and found it to be a valuable adjunct to acne therapy. Pensky and Goldberg[11] treated 52 private acne patients whose response to other modalities had ceased. They felt that Kutapressin extended their therapeutic potential.

Treatment is usually initiated with 1 cc. Kutapressin two times weekly. There have been no systemic reactions from these injections and the preparation is well tolerated locally. Since there are no known contraindications it is used in conjunction with other therapeutic procedures including roentgen therapy. After 4 or 5 weeks, during which the patient has received 400 r to the face, injections are reduced to once weekly. With continued improvement the interval between injections is lengthened to two weeks. At the end of about 3 months of treatment it is usually possible to discharge the patient. The addition of Kutapressin to a previously satisfactory regimen for the treatment of Rosacea has resulted in more rapid improvement of the complexion and shortened the duration of treatment.

* Kutapressin was supplied by the Kremers-Urban Co., Milwaukee, Wisconsin.

Summary

Rosacea is a disease of the flush area of the face. Vasodilatation in this vascular area and the consequent hyperemia result in the characteristic erythema and rhinophyma usually accompanied by telangiectasia, acneiform lesions and seborrhea.

Its etiology is unknown; but contributory causes are manifold, perhaps the most significant of which is the psychosomatic complex.

Treatment is divided into psychosomatic, local, oral and parenteral categories.