

ACNE ROSACEA*

WITH PARTICULAR REFERENCE TO GASTRIC SECRETION

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THE purpose of this paper is to report the result of gastric secretion studies in twenty-four cases of acne rosacea; and to give a brief description of the disease itself.

PATHOLOGY

Acne rosacea is not uncommon among skin conditions, comprising about three per cent of all dermatological cases. It occurs more frequently in women than in men, the ratio being three or four to one. This disease may be defined as a chronic congestion of the central two-thirds of the face, which eventually leads to permanent vascular dilatation of that area. There are three fairly distinct phases in the development of the condition. A simple reddening or flushing of the facial skin—which at first is transient, later becoming more persistent—is the earliest symptom. Secondary to the increased circulation in this portion of the face an overaction of the sebaceous glands occurs, which is followed by the appearance of patulous follicles, acne pustules, and patches of seborrhea. In a few instances, in elderly men only, a fibrous tissue overgrowth appears in the subcutaneous portion of the nose, with a resultant enlargement and lobulation of that organ, namely, rhinophyma.

Because the term "acne rosacea" has been somewhat confused with "acne vulgaris," recent writers have preferred to drop the prefix "acne," and refer to the disease simply as "rosacea." The differentiation between these two conditions is quite clear. Acne vulgaris is due primarily to an overaction of the sebaceous glands of the face, neck, chest, and back; occurs in the second and third decades of life, and is characterized by

comedos and pustules in these areas. On the other hand, rosacea is a disease of the third and fourth decades of life, and is primarily a vascular disturbance of the central two-thirds of the face, with a secondary overaction of the sebaceous glands.

It is generally accepted that rosacea is due to some internal disturbance, although the exact cause has not been definitely determined. The habitual use of alcohol and the presence of dyspepsia are referred to as important etiologic factors.

The association of eye lesions with rosacea is being reported more and more frequently by ophthalmologists, who find a type of vascular keratitis, corneal ulceration and vascular nodules in the cornea. These ocular complications have not as yet received the proper attention by dermatologists.

ACNE ROSACEA AND GASTRIC DISTURBANCES

The flushing of the facial skin in patients with rosacea is markedly increased in many instances by the ingestion of certain foods into the stomach, such as alcohol, hot liquids and solids, tea, coffee, and highly seasoned foods. The relationship of diet to rosacea, and the association with this disease of certain gastro-intestinal complaints such as flatulence, a feeling of fullness after meals, nausea, lack of appetite, constipation and diarrhea, have caused clinicians to regard the condition as either due to or greatly influenced by altered digestive processes.

During the past ten years, investigators have been approaching the problem from this standpoint, and have emphasized the importance of a study of the gastro-intestinal tract by means of the x-ray and of observations on gastric secretion.

Pathologic changes of the digestive organs associated with rosacea are very infrequent; on the other hand, hypochlorhydria in the gastric secretion occurs in a large percentage of the cases. Studies of gastric secretion have heretofore been made by the fractional gastric analysis, gruel being used as the test-meal.

The published reports of investigators in this field are analyzed in Chart 1.

COMMENTS ON CHART I

In a total of 163 cases of rosacea studied, 57.6 per cent were found to be subacid. A complete

CHART 1.—Summaries of Some Gastric Analyses

Reported by	Achlorhydria 0 Free HCl	Hypochlorhydria under 20 Free HCl	Hypochlorhydria 20-30 Free HCl	Normal	Hyperchlorhydria 45+
Eastwood, S. R.	4	11	9	21	5
Rullison, R. H.	7	17	11	10	5
Brown, W. H.	7	8	13	18	4
Ryle and Barber	55	2	...	5	...
Total cases	23	38	33	54	14
Per cent of cases	14%	23.4%	20.2%	33.1%	8.7%

57.6% Subacid

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achlorhydria was shown in 14 per cent, no free hydrochloric acid being present in any of the specimens taken. A marked hypochlorhydria was shown in 23.4 per cent, the free hydrochloric acid not rising above twenty; while 20.2 per cent did not exceed thirty points of free hydrochloric acid.

As important as the finding of hypochlorhydria in rosacea, is the fact that these authors report that marked clinical improvement is obtained by the internal administration of dilute hydrochloric acid—in many instances to an extent out of proportion to the degree of hypochlorhydria found.

Recent advances in gastric analysis by the introduction of the alcohol test-meal and of the histamin method of stimulating gastric secretion have prompted this study.

The authors treated twenty-four patients, of whom eighteen were females and six males, with a ratio of three to one. Their ages ranged from twenty-seven to seventy-four years; and the duration of the disease varied from one month to fifty years. There was a definite history of alcoholism in two patients, while in three others alcohol had been taken in moderate amounts. In ten patients no alcohol had been taken. Blood pressure findings showed a definite hypertension in five patients, while in only two was the blood pressure below normal.

SUMMARY

A series of twenty-four cases of rosacea is presented. In each patient a gastric analysis was done by the alcohol test-meal method. (In a few instances the histamin method was used also, but these findings are given here in only one case.) The alcohol test-meal offers a standardized method for the study of gastric acidity, and eliminates the various factors leading to the recognized inconsistencies and uncertainties of the Ewald test-meal. The alcohol meal was preferred to histamin injections because of the occasional disagreeable reactions following the latter.

TECHNIQUE

The patient was fasted for twelve hours prior to the beginning of the test. The fasting contents of the stomach were aspirated, and then 100 cubic centimeters of seven per cent alcohol were introduced by means of a large Luer syringe through the Rehffuss tube into the stomach. Ten cubic centimeter samples of the stomach contents were taken at 30 minutes, 60 minutes, and 120 minutes

after the introduction of the alcohol. At the conclusion of the test the entire stomach contents were withdrawn. These samples were then titrated with 0.1 normal sodium hydroxid in the usual manner for free and combined hydrochloric acid.

It was necessary that the samples withdrawn from the stomach be clear and contain no bile. In the presence of bile the sample was discarded. The acidity was determined within two hours after withdrawal of the contents from the stomach.

GASTRIC ANALYSIS RESULTS

The results obtained by gastric analysis in these cases of rosacea may be classified according to the degree of free hydrochloric acid found in the gastric secretion. It is difficult to state exactly what constitutes the normal gastric acidity and the normal variation therefrom according to the alcohol test-meal. Previous writers have usually regarded thirty units of free hydrochloric acid in the gastric juice as the lower limits of normal for the Ewald fractional meal. Workers with the alcohol test-meal regard twenty units of free hydrochloric acid as the lower limits of normal. This estimate, which may be regarded as conservative, is used in the grouping of the present data.

Our first group is that in which an *achlorhydria* was present, no free hydrochloric acid being present in any of the specimens. Seven patients, or 29.1 per cent of the total number studied, fell into this group.

Those patients whose free hydrochloric acid was not over ten were placed in the second group of patients with *marked hypochlorhydria*. There were four of these, or 16.6 per cent of the total.

The third group included patients with a *moderate degree of hypochlorhydria*, with free hydrochloric acid above ten and under twenty. There were seven of these cases, or 29.1 per cent of the total. One patient is included here whose gastric secretion was obtained after histamin (78), the normal acidity range by histamin being 90 to 125.

The fourth group, or the *low normal*, in which the free hydrochloric acid did not go over thirty, included three patients, or 12½ per cent. It should be noted that other reports have regarded this group as showing a slight hypochlorhydria.

Three patients were normal, the free hydrochloric acid being between thirty and fifty, or 12½ per cent.

Chart 2 shows these findings.

CHART 2.—Gastric Secretion Studies

Gastric Secretion	No. Cases	Male	Female	Per Cent of Total
Achlorhydria—No free HCl	7	4	3	29.1%
Marked hypochlorhydria—Free HCl under 10	4	1	3	16.6%
Hypochlorhydria—Free HCl under 20	7	1	6	29.1%
Lower limits of normal—Free HCl under 30	3	0	3	12.5%
Normal free HCl, 30-45	3	0	3	12.5%
Hyperchlorhydria 45+	0	0	0	0.0%

75 per cent Subacid

COMMENTS ON CHART 2

Considering the series as a whole, eighteen cases, or 75 per cent, were very definitely in the hypochlorhydria class, while three others, or 12½ per cent, were in the lower limits of normal. These figures are somewhat higher than reported by other investigators, who found 57.6 per cent of rosacea patients as subacid. Hypochlorhydria is a finding common to a variety of diseases, among which may be mentioned pernicious anemia, subacute combined degeneration of the spinal cord, pellagra, sprue, infectious arthritis, etc.

The significance of this finding in rosacea can be estimated by the clinical results obtained by the internal administration of dilute hydrochloric acid, which was given in teaspoonful doses in a large glass of water with meals. In the majority of the cases there is an immediate response; the intense flush subsides, acne lesions tend to disappear, and the patient feels better generally. The mild types of the disease do not seem to improve as rapidly as the severe ones. While the patients with complete achlorhydria derive most benefit as a rule, often the extent of improvement is out of proportion to the degree of hypochlorhydria. Patients with normal findings are also benefited by dilute hydrochloric acid. In the present series, we have had the opportunity of following the course of the condition for several months in fifteen cases while they were taking the hydrochloric acid. Of these, thirteen made a 50 to 75 per cent improvement. Two did not improve at all. None of the patients were, however, completely relieved of their symptoms.

Complete cure of rosacea is reported in many instances by certain investigators by the use of dilute hydrochloric acid internally in combination with other therapeutic agencies, namely, the regulation of the diet with the omission of alcohol, highly seasoned foods, tea, coffee, and hot liquids; relief of constipation; local applications to the skin; x-rays and ultra-violet rays; and destruction of enlarged superficial vessels in the skin.

While we have not seen complete relief of the rosacea in our cases which have, perhaps, been under observation for too short a time, a flare-up of the condition has been noted when patients neglect their intake of hydrochloric acid for a few days. From a clinical standpoint, there seems to be no relation between the degree or hypochlorhydria and the severity of the rosacea.

COMMENT

The standardized technique of the alcohol test-meal affords an accurate means of determining gastric acidity. If employed by other investigators, valuable data will be obtained for clinical analyses.

Gastric secretion findings in this series of rosacea cases emphasize the frequency with which hypochlorhydria is associated with this disease. Clinical improvement following the internal ad-

ministration of dilute hydrochloric acid links this finding closely to the pathogenesis of the disease.

Hypochlorhydria is a finding present in too many conditions to regard it as the causative factor in any one disease.

CONCLUSIONS

1. A marked hypochlorhydria was demonstrated in 75 per cent of this series of cases of rosacea.

2. Definite clinical improvement followed the internal administration of dilute hydrochloric acid.

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DISCUSSION

GARNETT CHENEY, M. D. (210 Post Street, San Francisco).—The association of lesions of the skin and mucous membranes with low or absent free acidity of the stomach is well recognized, but very little understood. The relationship is difficult to explain because the great majority of people with true achlorhydria do not have skin lesions. I have several times noted marked improvement in aphthous stomatitis and chronic eczemas following the administration of dilute hydrochloric acid, occasionally only after far larger doses than Doctor Epstein has used. Four or eight cubic centimeters three times a day might have produced a great improvement in some of his patients. It is a pleasure to note that his investigation is based on a correlation between dermatology and internal medicine.

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SAMUEL AYRES, JR., M. D. (2007 Wilshire Boulevard, Los Angeles).—The authors have confirmed the observations of many other investigators regarding the causative relationship between gastric hypochlorhydria and many cases of acne rosacea. I have had no personal experience with the alcohol test-meal. Unless it can be shown that this method has very decided advantages over the Ewald test-meal, the latter would seem preferable inasmuch as it approaches more nearly the normal daily stimulus. Also the microscopic evidence of the degree of chymification obtainable with the Ewald meal is confirmatory of the degree of titrated acidity. I am glad to hear the authors recommend the use of dilute hydrochloric acid rather than large quantities of citrus fruit juice in the treatment of their patients with hypochlorhydria.

Some of the cases of rosacea with normal gastric secretion, will be found to be caused by an excessive infestation with the *Demodex folliculorum*, a worm-like insect which inhabits the sebaceous ducts. During the past two years we have encountered at least twenty cases of rosacea in which large numbers of Demodex were found microscopically in pus and follicular scales, and which were cured by the application of a strong parasiticide such as is used in scabies. Simultaneous with the clinical improvement there was a disappearance of the Demodex on microscopic examination. Most of these patients were women, and many had forsaken the daily use of soap and water for cleansing creams which may have favored the abnormal development of the Demodex. A detailed report of these cases will be published in the near future.