As shown in Part II, stress factors influence both clinical groups. When an organic obstruction such as a polyp blocks the nose little change can be expected in the airway under the influence of emotion. On the other hand, one would expect to find a clearer relationship between emotion and the state of the nose when the rhinitis has an episodic character as in paroxysmal sneezing and rhinorrhoea.

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RESULTS OF TREATMENT OF CHRONIC VASOMOTOR RHINITIS

PART II. RESPONSE TO PSYCHOLOGICAL TREATMENT

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Results of Psychiatric Assessment and Psychotherapy

Thirty-one patients under treatment in the throat and ear department were examined. There are two separate series. The patients in series I (13) were the subjects of a pilot study carried out to discover whether there appeared to be any significant correlation, in general terms, between the emotional life of the patient and variations in nasal symptoms. Those in series II (18) were kept under continuous observation for periods of time varying from 1 to 20 months.

The long-term and short-term behaviour of the illness was reviewed against the background of the patient's day-to-day existence and its vicissitudes. Some attempt was made to deal with emotional tension by psychotherapy in all the patients in series II.

Series I

This series comprised eight women and five men. The age range was 16-66 and the mean age 37.9 years. The patients were interviewed on a few occasions only, and the investigation was on a superficial level. Eight had no other complaints but the rhinitis itself. Case 7 had occasional headaches after an especially laborious task; Case 1 felt sometimes irritable and depressed; and Case 10 was tense and moody. Cases 5 and 8 had multiple symptoms—malaise, "run-down," headache, "indigestion," poor sleep, bad dreams.

When the history of rhinitis was explored by a method which took account of the patient's attitudes, feelings, and reactions to stress, the series could be subdivided into three groups.

Group A.—In four patients no significant association of the symptoms of vasomotor rhinitis with emotional tension could be found. Three of these were placid, stable people who had no mental or physical symptoms of anxiety; nasal function seemed to be influenced by physical agencies, such as change of temperature, but not by emotional state. The fourth was a tense, hostile, paranoid man who showed considerable resistance to a psychiatric approach to his illness. If his resistance and the hostility to which it gave rise had been better handled it might have been possible to demonstrate to him some association of nasal symptoms with feelings, since it was manifest that his feelings were very much disturbed; on the evidence, this association seemed probable but could not be proved.

Group B.—Some relationship between mental state and nasal symptoms was present in eight patients. The emotional states correlated with symptoms in these patients were in the main unpleasant and threatening—anxiety, guilt, resentment, despair. The following case is typical.

Case 10.—A woman of 30 was evacuated from London to the country in 1941. She objected to this move and found her new life dull and tedious; in this setting of frustration and discontent she began to have attacks of sneezing (up to 12 attacks daily, average 12 sneezes each), running of the nose (usually 10 large handkerchiefs daily), and obstruction. Clinically, she had pale swollen inferior turbinates; skin tests were negative. Attacks sometimes followed an argument at work. She was not troubled at all by nasal dysfunction when she was walking out with her boy friend; after he left her she felt disappointed and dejected, and symptoms began again.

Group C.—In one patient rhinitis began at a time of crisis in her life, and its symptoms were plainly related to anxiety. The association between nasal symptoms and emotional tension in this case was thus very close.

The preliminary investigation showed, then, that in only one-third of the series did the nasal disorder bear no relation to stress. Furthermore, it seemed likely that, if some of the patients in group B had been examined more often and a better rapport had been established, other links between the rhinitis and the patient's adjustment might have come to light. It was therefore decided to examine a second series of patients and to keep them under observation long enough to allow variations in the nasal symptoms to be correlated directly with life circumstances and the process of psychotherapy. Information of this kind is more reliable than that taken from the patient's anamnesis.

Series II

This series comprised 11 women and 7 men. The age range was 20-58 and the mean age 35 years. The mean duration of attendance at the out-patient clinic was eight months. During psychotherapy the behaviour of the rhinitis and the patient's attitudes, feelings, and reactions were observed, and the correlation, or lack of correlation, between these was recorded.

Group A

The patient's emotional reaction in three cases was thought to have no influence or an insignificant influence on nasal symptoms. The onset of rhinitis in these patients could not be clearly related to disturbing experiences, and, although there was some association between stress and variations in symptoms, this association did not appear to govern the behaviour of the disorder.

Case 15.—A woman of 48 was left alone when her husband died in 1948. She had few friends and felt isolated from her family. In January, 1951, she caught "flu" and had to stay in bed; she was hurt and disappointed that none of her family came to visit her. Symptoms of rhinitis began after this illness. There did not seem to be any close relation between sneezing and nasal blockage and discharge, and spells of anxiety, tension, and resentment against her family.

Here, although the rhinitis did appear for the first time when the patient was depressed and discontented, it later pursued its own course, apparently uninfluenced by her state of feeling.

Group B

In seven patients emotional tension was one of the main determinants of the illness.

Case 10.—A man of 35 suffered from blocking and running of the nose, "indigestion," and occasional attacks of asthma. The indigestion was very plainly related to anxiety, and some of the asthmatic attacks occurred in a setting of emotional tension. The rhinitis first appeared when he left school and went to work. There were attacks coincident with illness in a relative and in his wife. He experienced a kind of internal agitation when he went to visit his parents: "I feel excited in the stomach." This state was in part pleasurable, but it contained a considerable tension component as well. Three times an attack of rhinitis began at the time of the visit. On the other hand, he had attacks which did

not seem to be related to stress. When the course of the illness was reviewed the attacks associated with emotional tension outweighed the remainder.

Here the stress factor accounted for most of the attacks, but there were others which accompanied a change in climate and some which appeared "out of the blue" for no reason which we could discover. An important association of nasal symptoms in this patient was with relaxation; it was plain from his story that the pathogenic agent was not the relaxation itself but the effort and emotional strain which preceded it. This kind of association is familiar in other stress disorders; it is very often seen in migraine (O'Neill, 1952).

Six of the seven patients had other symptoms besides the rhinitis—*anxiety, depression, fatigue, asthma, "indigestion," irregularity of menstruation, and menorrhagia*. These may be regarded as mental and physical manifestations of a stress reaction of which the nasal disorder was one component.

The onset of symptoms in five patients occurred at a time of especial difficulty and frustration.

Case 4.—A man of 31 came back to his firm after six years' war service to find that some of his junior colleagues who had not joined up had risen to positions of importance and were now senior to him. "I tried not to be resentful"; but he could not help feeling bitter and indignant. Attacks of sneezing and running of the nose began, and have continued. He observed that annoyance affected the nose: "If my little boy pesters me I sneeze." Nasal symptoms were least in evidence while he was active. "If I mope the nose runs."

Variations in symptoms in these patients could for the most part, though not entirely, be accounted for by their emotional state at the time. This relationship is further discussed below.

Group C

A careful review of the story of the illness in the eight remaining patients led to the conclusion that stress was the dominant factor in the pathogenesis.

Case 6.—Sneezing began in a man of 32 when he was working in a power-station. The work was monotonous and boring, and he felt frustrated: "I want a change. At a loss now. Feel very anxious." In the Army he had risen from the ranks to W.O.1 by diligent application to duty; he was ambitious, and believed that he could better himself at work if he had the opportunity. At the same time he was reluctant to resign from the power-station, since the job was secure and carried a pension. While he was under observation every attack of nasal symptoms could be related to anxiety. After several discussions of his attitude to work, and the pros and cons of making a move, he decided to stay where he was, and to accommodate himself to the conditions; he became less restless and more content. When last seen, ten months later, the rhinitis had almost disappeared. There were occasional mild attacks after fits of worry and depression.

A change of attitude and emotional state, brought about by reflection and discussion, was accompanied in this patient by improvement in the rhinitis.

Five of the eight patients had other tension symptoms—*fatigue, depression, menorrhagia, "indigestion," bodily pains, and migraine*.

In all eight, symptoms of nasal dysfunction began when they were passing through an experience that aroused emotional tension. These experiences, it should be noted, were not in themselves very dramatic or extraordinary. They were disturbing to the patient because of the strong feeling which was mobilized, and their importance depended on the patient's own internal conflicts and not upon disaster in the outside world.

Case 18.—Symptoms (irritation, sneezing up to 30 times, and watery rhinorrhoea for several hours) began in a woman of 29 after she started music lessons with a male teacher. To her, marriage was a symbol of independence, and she ardently desired to form the kind of friendship which might lead to it. Strivings in this direction, however, stirred up anxiety because of a strong bond of dependence on her mother. Beneath this was deeper anxiety; she had once entered into a homosexual relationship of which she was very ashamed, and she was most apprehensive lest her feelings for her own sex should prove stronger than her feelings for men.

Variations in the intensity of nasal symptoms were associated with variations in emotional state in every patient in this group.

Correlation of Nasal Dysfunction with Emotional State

The data for this correlation are taken from observations on all 18 patients in series II. Two types of correlation can be considered: (1) long-term—the association of attacks with painful experiences over the whole course of the illness; and (2) short-term—momentary variation of symptoms with state of feeling, such as the appearance of nasal blockage in a fit of anger. Furthermore, the emotional determination of physical symptoms is often, if not always, a complex process; the immediate apparent precipitant may be found to rest upon other and deeper levels of conflict. Examples of this kind of psycho-physical relationship are given below.

Precipitating Symptoms

The immediate precipitants of symptoms may be classed as follows.

Anxiety from various sources (10 cases) was much the most common. In two of these the chief focus of anxiety was hypochondriacal concern.

Case 8.—Nasal obstruction due to polypi, and watery rhinorrhoea, began in a man of 42 after he had gone to consult a doctor about pain in his side. The doctor told him that he was doing too much and had tachycardia. The patient thought that this meant serious heart disease, and became extremely anxious about himself. He was sent to a cardiologist for an opinion and given strong reassurance. He ceased to worry about his heart, and the rhinitis diminished.

A blend of anxiety and resentment was predominant in three patients, and an association of symptoms with feelings of depression and deprivation was observed in three others. In three patients symptoms would often appear in the phase of relaxation after effort.

In some patients nasal dysfunction tended to be more pronounced in states of fatigue, probably because the power to keep in check painful emotions is lessened at such times.

Sex feeling, in the sense of unsatisfied desire, manifestly contributed to the causation of symptoms in two patients; and in a third (Case 18) conflicts over the sexual role, which gave rise to acute anxiety, came to light over some months through dream analysis. In several patients who were investigated at length, attitudes and feelings which had at first been entirely hidden rose to the surface, and it was then clear that the tension caused by these underlay and reinforced the emotional states which acted as the immediate precipitants of physical symptoms.

Case 1.—A man of 34 took over the editorship of a trade journal in 1946. The journal was a "one-man show," and he was alone responsible for its production and management. He took his work seriously and worried about it. Soon after he started the task he began to notice "repeated colds." He kept a chart of the variation in symptoms, and saw that the nose gave least trouble when he was working efficiently and at high pressure; nasal block and discharge at once appeared when he "flopped" after a period of intense effort. The analysis of dreams led almost at once to the themes of guilt and fear of punishment; then to the association of sex feeling and violence; and then the patient recalled that his first marriage had early come to grief because his wife was frigid. One night, in a kind of fugue state, he had made a furious attack on her. The memory of this experience had been wholly suppressed, and its recall caused him intense distress, and brought into consciousness the fear that he might make a similar attack on his present wife. When the guilt and fear linked with these impulses had been ventilated he was relieved, but said that he thought the primary problem had yet to be reached. The dream thoughts then took up the theme of his relationship to his mother, and the hostility and rebellion which as an only child he felt towards her. In speaking on this theme, strong feeling was expressed, and nasal symptoms gradually diminished until, nine months after his first attendance, the rhinitis ceased to give much trouble.

In this patient the intensity of nasal dysfunction was related to work strain. When the tensions which lay beneath

this had been to some extent alleviated, nasal block and discharge were reduced, though the actual situation at work had not altered.

Effect of Psychotherapy upon Nasal Symptoms

All the patients in series II were treated in the out-patient department by repeated interviews for periods ranging from 1 to 20 months. The sources of tension were explored and the patients were given help to deal with these. Dream analysis was utilized in six cases. The results of treatment were:

	Paroxysmal Rhinorrhoea	Chronic Nasal Oedema
Much improved or recovered	5	3
Improved	3	3
No change	2	1
Improvement in rhinitis, development of asthma	1	—

It will be seen that in response to treatment there was no significant difference between paroxysmal rhinorrhoea and chronic nasal oedema.

The best results were obtained in cases in which the relationship of the illness to stress was strongest, and six of the eight patients in group C were much improved.

These results suggest that sustained improvement in vasomotor rhinitis can be brought about by the diminution in emotional tension which follows psychotherapy—an improvement that does not depend on the use of antihistamine drugs.

Comment

A comparison of the grouping in series I and II shows that the principal difference is in group C (series I, 1; series II, 6). This suggests that the more that is known about the patient, and the better his reactions are understood, the more does the stress factor stand out. This conclusion is confirmed by the clinical findings in those patients who were investigated at greater length. The patient mentioned above (Case 1 of series II) could not, at his first interview, have told of his attack on his wife, since he was not at that time aware of it. The judgment that a particular disorder is not related to stress is a difficult one to make without a really thorough inquiry.

One of the patients in series II (Case 16), who was most anxious and hypochondriacal and suffered from abdominal discomfort, bodily pains, migraine, tension, and depression, had to consult a doctor about his other symptoms; another (Case 3) looked pale and ill, and was depressed and anxious. Both of these patients were manifestly anxious on examination, and their anxiety and its symptoms were severe enough to warrant their seeking medical advice. The other 16 patients did not seem to be very anxious or very depressed, and would not have asked for a psychiatric appraisal if it had not been offered to them. Few of the patients in either series were able, at their first attendance, to relate the symptoms of their rhinitis to stress, yet they were able to grasp this relationship readily enough when it was made clear to them by the anamnesis, and the more intelligent among them strove to make such modifications in their lives as were necessary to keep symptoms to a minimum.

No specific personality pattern emerged from the psychiatric examination of the patients in series II. Reactions of evasion and retreat (Cases 3 and 5) were represented among the patterns of illness, as well as reactions of combativeness and defiance (Cases 10 and 17). Symptoms of nasal dysfunction could appear in anticipation of stress (Case 13), during the stress itself (Case 7), and after it was over (Case 1).

Once the physical symptoms had appeared, utilization of them in order to gain some advantage was not a feature of the illness in any of these patients. In this respect the disorder resembles duodenal ulcer.

Summary

The results of treatment of chronic vasomotor rhinitis by physical and psychiatric methods are reviewed.

A few patients may be relieved of their symptoms by desensitization, and a few more are benefited by

zinc ionization. Obstruction of vascular origin, and that due to polypi, can be lessened by cautery and polypectomy. Antihistamine drugs are capable of suppressing the symptoms of paroxysmal rhinorrhoea, but only when they are being given continuously. They do not benefit the patient with chronic nasal oedema.

Some relationship between stress and the onset and course of vasomotor rhinitis has been demonstrated from a superficial psychiatric investigation. When the investigation is more prolonged and is carried to deeper levels a close relationship between nasal symptoms and stress can be shown in most patients. Such a relationship was found in 24 of this series of 31 patients. Recovery or sustained improvement followed psychotherapy in 14 of 18 patients treated at some length.

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COMPLICATIONS OF MECKEL'S DIVERTICULUM

WITH AN ANALYSIS OF 18 CASES

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Meckel's diverticulum has been the subject of many authoritative and stimulating papers in the past. It is not a rare congenital abnormality; the complications of this lesion are, however, of such gravity that the subject is always of importance in any consideration of acute abdominal emergencies. The cases reported here illustrate well some of its more serious complications, and it is by keeping such facts constantly in mind that we may hope to reduce the mortality of such lesions.

The first adequate description was published by J. F. Meckel in a series of three papers which appeared between 1808 and 1815. He was apparently the first to associate the diverticulum with the omphalomesenteric duct which connects the yolk sac with the intestine during the first few weeks of foetal life. Failure of obliteration of part or whole of the duct results in various anatomical types, ranging from complete patency to the outpouching of intestine, usually of the terminal ileum.

Meckel's diverticulum usually arises from the antemesenteric border of the ileum, about 20 in. (50 cm.) proximal to the ileo-caecal valve, the distance being less as the age approaches infancy. The diverticulum is usually composed of the same three layers which make up the ileum, but at times contains heterotopic tissues; the incidence varies between 15 and 25% of cases. It takes the form of gastric, duodenal, jejunal, and colonic mucosa, as well as pancreatic tissue. The most common type of heterotopic tissue is gastric mucosa, occurring in 16.6% of all cases of Meckel's diverticulum. When present, the heterotopic tissue usually lines the greater portion of the diverticulum, often involving the neck of the sac.