

Nonreaginic Allergy in Theory and Practice

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The syndrome of nonreaginic allergy is commonly seen by the physician and is often of great concern to the patient. Diagnosis by means of the pulse rate and alleviation through avoidance of offending allergens is discussed.

BEFORE PROCEEDING with the main topic of this paper, it seems wise to briefly review our concept of allergy.

This concept has, in our opinion, not changed materially from that described by Lucretius about 2000 years ago, and stated in classical English sixteen centuries later by Beaumont and Fletcher: "What's one man's poison, Signor, is another's meat or drink."

The specificity of allergic sensitivity seemed to be most satisfactorily explained by the assumption of Von Pirquet and Schick, that, in serum sickness at any rate, the tissue injury reflected in the symptoms was due to irritation produced by the interaction of antibody and antigen. Actually, such a specific mechanism has been demonstrated in atopic hayfever and asthma and in serum sickness.

However, in contact dermatitis, bacterial allergy and familial nonreaginic food-allergy, the hypothetical antibodies have not been demonstrated; and in the last-named type of allergy, according to Coca's recently published observations, an antibody mechanism can be reasonably excluded.

It would thus seem premature to make an antigen-antibody mechanism a part of the *definition* of allergic disease.

According to Coca, idioblastosis differs in the following respects from atopic allergy:

1. The hereditary influence present is independent of atopic inheritance and may be coexistent.
2. Allergic antibodies (reagins) are not demonstrable.
3. Many of the symptoms differ from those in the atopic group.
4. The allergic reaction is preceded, or accompanied by, acceleration of the pulse.

While tachycardia in response to environmental contacts was observed many years ago, the recognition of this as a definite, scientifically determinable, allergic reaction was first described in 1935 by Arthur F. Coca of Pearl River, New York.

At that time he observed a pulse rate of 180 together with anginal symptoms in a patient to whom dilaudid had been administered. Recurrence of symptoms, together with acceleration of the pulse was later traced to other medications and to certain foods.

Since then the subject has been extensively investigated by Coca and to a lesser degree by a few others. It has not received publicity commensurate with its importance, due perhaps to radical changes in medical thought necessitated by its recognition; and to formidable difficulties inherent in its practical application.

In spite of this the alert physician must be familiar with these concepts, whether or not he has the time or inclination to apply them. A few of the radical changes in thought demanded by these findings may be listed as follows:

1. Our conception of the "normal" pulse rate and pulse range must be revised.
2. Many disease states heretofore classed as idiopathic (in reality meaning unknown) must now be recognized as allergic.
3. One more step forward has been taken in discovering some of the causes of our so-called degenerative diseases.
4. The widespread incidence of this type of allergy—affecting as it does about 90% of the population—is startling. In contrast, major atopic disease is recognized in only 7% to 10%.

SYMPTOMATOLOGY

The symptoms associated with idioblastic tachycardia may be negligible or they may be prostrating and of serious import. Many of them have, in the past, been ascribed to neurasthenia—an observation which may eventually help to bring psychiatry into a truer perspective with general medicine. Emotional tension aggravates allergic states: allergic states create tension and probably predispose to inefficient handling of daily problems.

The symptoms found associated with pulse allergy are many, but worth enumerating. Others will undoubtedly be added as our knowledge increases. One of the most outstanding is an overwhelming, unexplained fatigue. Patients awaken unrefreshed and more tired than when they went to bed. Or they may be as exhausted a short time after breakfast as though they had played three sets of tennis.

Vague fear sensations, emotional depression, nervousness, mental confusion and lapse of memory often torment people with the thought that they are ready for an institution.

Atypical headaches, neuralgias and myalgias together with palpitation of the heart, *hypertension*, extra-systoles and a rapid pulse often simulate a psychoneurosis.

Respiratory symptoms vary from stuffy nose, chronic sinusitis, frequent colds, chronic laryngitis and chronic bronchitis with its frequent cough, to frank asthma.

So-called canker sores are frequent and often accompanied by a coated tongue, and gingival swelling and irritation. Farther down the gastrointestinal tract allergic reactions may manifest themselves as indigestion, colitis, gall bladder colic and constipation—the latter being very frequent.

In the genitourinary field urinary frequency, hematuria and ureteral colic are encountered.

When the skin is the shock organ, urticaria, giant hives and fixed eruptions may be found.

Diabetes and arthropathies can be produced or aggravated by allergic reactions. Coca has reported that several diabetics have become sugar free after a saccharin sensitivity was uncovered.

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Finally, behaviour problems in children and nervous breakdowns in adults should be combed for an allergic factor before accepting them as the sole result of other influences.

All of the above symptoms or conditions have been discovered and relieved in one or more patients at various times by the pulse method; and have been reproduced by voluntary contact with the offending allergen once it had been discovered.

The substances capable of evoking the pulse reaction are legion.

All foods may cause trouble, although the staple articles of diet are often chronic offenders.

Drugs and medications of all sorts are suspect.

Inhalants such as house dust, insect sprays, paint fumes, perfumes, exhaust gases, coal and natural gas, food odors and tobacco smoke are potent allergens. Allergy to the latter is particularly common, averaging 80% in my preliminary series of 180 cases.

Curiously enough, pollens seem to act through an atopic rather than an idioblastic mechanism.

Diagnosis, unfortunately, is rather complicated and requires an intelligent, cooperative patient, as well as much time and experience on the part of the physician. However, the presence of this type of allergy can be readily suspected by means of a pulse chart.

A difference of twenty beats or more between the high and low pulse for the day, or a single reading of 90 or more is almost pathognomonic of idioblastic allergy.

In the case of smokers, a twenty-four or forty-eight hour chart followed by a smoking test in the office suffices to identify those hypersensitive to tobacco. While some are sensitive to this alone, smoking often masks food allergens which may be discovered when smoking has been eliminated.

Since reagins are not demonstrable, skin tests are negative unless atopy is also present. The appearance of a specific rise in pulse rate after contact with an offending allergen is depended upon to identify these substances.

In the case of inhalants, the tachycardia appears within a few minutes; whereas after foods or drugs twenty to forty minutes is necessary for digestion and absorption of the allergen before the reaction takes place.

The duration of the tachycardia varies with the allergenic substance, the frequency of contact and the makeup of the individual. In the case of foods, the effect may last for one hour, or as long as four days. This carry over complicates diagnosis.

Omission of an allergenic food from the diet for several weeks often results in temporary loss of sensitivity. Thus the tachycardia and symptomatology may not appear following its first reintroduction, but only after it has been eaten two or three times in succession. This is known as the latent period.

When an allergenic food has been eaten daily for some time and is then omitted for one or two days, the pulse response to its reingestion at this time may be marked, as may any symptoms caused by it.

Caution must therefore be exercised in cases with severe symptoms such as epilepsy.

METHODS OF INVESTIGATION

All patients are requested to fill out 48 hour pulse charts. Instruction in pulse-counting is given and checked for accuracy. Those showing evidence of pulse allergy and complaining of symptoms which might be attributable to this condition are asked to cooperate in a search for food offenders. Smokers are tested and if positive asked to limit smoking to between meals and the evening.

In some cases the preliminary pulse charts may suggest the elimination and subsequent testing of certain foods. Otherwise one may proceed in several ways:

1. If the pulse drops to normal after meals, staple foods may be tested separately between meals and in the evening.
2. Meals may be divided into fruit, protein and carbohydrate and suspicion thus directed to one of these groups.
3. Single foods may be taken six or eight times daily and the pulse charted for each one.
4. In severe cases with continuous tachycardia charting may be done for several days while only two or three foods such as beef, rice and water-packed canned pears are consumed.
5. Rarely a complete fast may be indicated.

If dust and feather sensitivity is suggested by a high waking pulse rate, inhalant tests are cautiously tried with a pillow and the dust bag from the vacuum cleaner. A more complicated but successful method is to "Dust-Seal" the bedroom and observe the effect on pulse rate and symptoms.

COMPLICATING FACTORS

In searching for food allergens the effects of other pulse-accelerating factors must be carefully watched for and recognized if possible.

These include house dust, perfumes, scented soaps, powders and toilet water, tooth paste, nose drops, exhaust fumes, gas fumes, alcohol, drugs such as laxatives, flowers and tobacco smoke. In one of my early cases a pulse rise after meals was found to be due solely to a peppermint-flavored tooth paste. Fortunately, the nasal symptoms were due to peppermint, but the elimination diets used were a bit superfluous.

Virus infections such as the common cold and recurrent sinus infections may cause pulse acceleration.

The presence of asthmatic dyspnea, as is well known, usually increases both pulse and blood pressure.

Emotional crises may cause a tachycardia in labile individuals. It should be noted, however, that this effect is often drastically reduced following the discovery and removal of food allergens.

Exercise of course affects the pulse rate but there is a marked difference between the normal individual and the sufferer from nonreaginic allergy. Upon arising from a sitting position the pulse of the normal individual varies only a few beats, and returns to normal within three minutes after vigorous physical effort. In contrast, the heart rate of allergic individuals may jump fifteen or twenty beats per minute just with the effort of standing up and the tachycardia following severe exercise may last for one-half hour or more.

Anxiety neurosis may confuse the picture and cause a

marked tachycardia and hypertension which subside with the solution of an emotional problem.

Neurotic individuals may refuse to cooperate for fear they will develop a neurosis. A desire for rapid cure without any effort on the part of the patient, together with understandable unwillingness to change personal habits, makes prolonged investigation or treatment impractical, unless complaints are disabling or very unpleasant. The average individual just won't take the time or make the effort necessary for diagnosis and treatment.

The presence of a toxic, substernal goitre must always be considered. Pulmonary fibrosis and emphysema may produce tachycardia. Other indefinite factors influencing the pulse rate may be fatigue, the menopause, vitamin B complex deficiency and perhaps endocrine exhaustion.

Lastly, the latent period, summation effects, suppression of minor allergens by major ones and the carry-over period all make diagnosis more difficult. The carry-over effect of alcohol is often marked and should be remembered. In several cases sun baths have produced a prolonged rapid pulse. One patient had a twenty-four hour carry-over from just sitting in the shade beside a *chlorinated* swimming pool.

TREATMENT

Reliance is placed primarily on avoidance of foods, drugs, and inhalants found to produce both *symptoms* and *tachycardia*. Care must be taken to supply an adequate diet with supplementary vitamins and minerals as indicated.

After allergenic foods have been omitted from the diet for several months, they may often be consumed once or twice weekly without reproducing symptoms. Dilute hydrochloric acid or digestive enzymes are occasionally useful.

Dust sensitive cases benefit greatly from the use of "Dust-Seal" or similar products applied to the bedroom and house furnishings and from the usual dust precautions. This procedure has enabled several patients to obtain complete relief from injections of very dilute dust solutions, whereas formerly, attempts at hyposensitization were always followed by an exacerbation of asthma.

Histamine has been of some help. "Piromen" has proven to be useful in some cases, but seldom controls severe reactors.

Attention to general health is of great importance. Patients should be encouraged and given the opportunity to unburden themselves of anxiety, frustration and situations leading to tension.

Intractable cases of food-allergy may be benefited by a unilateral lumbar sympathectomy. Coca advocates a stellate ganglion novocain block first. He has found that when food-allergy is responsible for a tachycardia, such a diagnostic block is followed by a drop in pulse rate for twenty-four to forty-eight hours. During this time only major allergens will cause a pulse rise and identification should be possible. He believes this procedure indicates what may be expected from a sympathectomy. Unfortunately—and curiously enough—the operation has little effect on inhalant sensitivities. It should be

followed by more pulse studies to identify remaining food allergens. As a rule, these are comparatively few in number and may be avoided.

While knowledge of the physiological basis for this type of allergy is meagre, the following statements have some basis in fact:

1. There is a strong familial tendency.
2. Histamine is involved in the reaction to some extent as shown by the fact that injections of this substance may relieve symptoms due to minor allergens, but not to major ones.
3. The allergic reaction seems to be primary in the sympathetic ganglia and secondary in the shock organs. This is suggested by the fact that the response to inhalant allergens usually occurs within one minute, as shown by the response to tobacco smoke; and that lumbar sympathectomy may markedly reduce the number of food allergens to which a patient responds.

In connection with sympathectomy it might be pointed out that some of the failures following this procedure, when used in hypertensive cases, are probably attributable to lack of recognition of the remaining food or inhalant allergens which are still operable in maintaining the high blood pressure.

CONCLUSIONS

1. As shown by specific tachycardia, idioblastic allergy to foods, inhalants and other substances is widespread.
2. Many symptoms, some of them serious and others potentially serious, accompany this tachycardia. Most of these are reversible if the allergenic contacts are discovered and minimized before organic changes have taken place.
3. The widespread use of tobacco exposes most of the population of this country to tobacco smoke. Inasmuch as about 80% of smokers show specific tachycardia to the use of this substance, its potential harmfulness is obvious.
4. By means of pulse studies, many symptoms not heretofore thought of as allergic are being brought into that category.
5. The presence of nonreaginic allergy may be one of the important explanations for the lack of correlation known to exist between dermal food tests and clinical sensitivity.
6. It is to be regretted that so far the main therapeutic weapon to combat idioblastic allergy is discovery and avoidance of incriminated allergens.

For those with serious symptoms and many sensitivities, conservative, unilateral, lumbar sympathectomy followed by a pulse-diet study offers much promise and may permit diagnosis and relief in otherwise hopeless cases.

7. It is, of course, realized that other factors are operative in each individual, and that successful treatment depends upon recognition of as many as possible. Nevertheless, the discovery and treatment of nonreaginic or idioblastic allergy may result in the satisfactory solution of many obscure problems.

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