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ALLERGIC POLYARTHRITIS

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In recent years there has been an ever increasing inclination to consider some of the rheumatic joint diseases as allergic manifestations.

Allergic arthritis has been induced experimentally in sensitized rabbits after injections of horse serum (*Klinge, Bruun*), and *Bruun* was successful in showing arthritis in several cases of non-injected joints, i.e. an allergic polyarthritis excited by horse serum.

An infection, probably a focal infection, is the general cause of the allergic joint reactions, but they may also be caused by some food-allergy (*Lewin and Taub, Rowe*).

Gudzent is of the opinion that foodstuffs frequently are the cause of the chronic polyarthritis, and he observes also how inhaled antigens may excite a polyarthritis.

The rheumatic allergic diseases, in which the etiology is a specific and not an infections antigen, were divided (by *Kahlmeter*) into three groups according to their clinical picture:

- (1) The allergic polyarthritis and polytendinitis.
- (2) The intermittent neuralgiform pains.
- (3) Hydrops intermittens.

The intermittent complaints are a characteristic of the anamnestic information available, and almost all patients report of periods free of symptoms. Most of the patients have

suffered from concurrent allergic reactions, e.g. Quincke's edema, urticaria, and vasomotor rhinitis.

Generally blood samples are normal, but in some cases a relative lymphocytosis and a slight anemia are encountered coupled with a probable eosinophilia. In acute exacerbations the sedimentation rate may show a transient rise.

Clinically allergic polyarthritis in like the first stages of an acute polyarthritis. Large as well as small joints are affected, and generally symmetrically affected. The individual joints develop swellings caused by serous exudates, swellings of the joint capsules, and periarticular edema. The affected joints become warm and reddened.

Recently two cases of allergic polyarthritis were encountered at the medical department of the Finsen Institute.

The first case was a 38-year-old butcher from a provincial town who for three years had suffered complaints in all finger joints.

Until seven years ago the patient had been healthy; at that time he developed a bilateral pleuropneumonia and pericarditis. He was successfully treated with penicillin. Three months later he was restored to health and went back to work; there have been no recurrent cardiac-pulmonary complaints.

When the joint complaints set in the patient was employed as a sausage maker; he thought that his disease was due to the frequent immersion of his hands in cold water. The joint pains started in the finger joints of either hand, sometimes expanding to elbows and shoulders. All finger joints were swollen and reddened, and the patient suffered much pain when he used his fingers; but their mobility was unimpaired.

The patient was hospitalized at his home town and treated with mud-packings without effect. Two months later when the complaints continued he was re-hospitalized and treated with "*Sympatizan*", but this treatment was also without effect. Since the pains continued he was subjected to an ACTH-treatment which was successful but had to be discontinued because of cardiac complaints (functional dyspnoea and palpitations).

The findings at the examination of the patient were as follows: height 183 cm; weight 113 kg; B.P. 170/90; normal fauces; pulmonary stethoscopy normal; cardiac auscultation normal and equalling the pulse; slightly expanded cardiac margin; the heart beat palpable 1 cm lateral to the medio clavicular line; the sounds were normal with no accentuation: abdomen soft, natural, and neither enlargement nor oedema were manifest; the liver and spleen edges were not palpable. There was no swelling or reddening of the external finger joints, only a faint tenderness when they were moved, and the same applied to the

left wrist; but the mobility was not impaired; all other joints were normal, and there was no muscular atrophy (the ACTH-treatment had been discontinued a few days before hospitalization). Blood samples revealed a questionable eosinophilia (400 cells per ml^3); other findings were normal, particularly the serum uric acid value was normal. Roentgenography of hands and feet negative; Roentgenography of the lungs showed slightly accentuated pulmonary pattern without infiltrations. Roentgenography of the heart showed a moderately enlarged cardiac silhouette. Electrocardiography showed nothing abnormal.

A cutaneous hypersensitivity to mixed meat-extracts (pork, veal, and beef) was found at the allergic examination of the patient, but otherwise the standard tests were negative.

A revision of the anamnesis with a view to meat allergy disclosed a brief symptom-free period when the patient because of slight dyspeptic pains had fed on a meat-free diet. Moreover the patient had observed some aggravation of his pains 8–12 hours after substantial meals which had been rich in meat, and likewise after long working hours with his hands immersed in meat.

The patient was treated with a meat-free diet and was recommended to work with rubber gloves which he later changed for "*Kerodex*" gloves.

The symptoms disappeared within a few days after the treatment had been instituted, and he has only suffered recurrences if he disregarded his diet and had meat for his meals. The joint symptoms would then recur after 8–12 hours and remain for a couple of days.

He has been controlled for 12–14 months and is still free of symptoms.

The second case was a 34-year-old housewife who for two years had suffered from a polyarticular disease.

No allergic dispositions were on record in the family.

Until six years ago the patient had been healthy; at that time she developed a left-sided pleuropneumonia which was successfully treated with penicillin, and there had been no recurrences.

Her menses had been regular since her 14th year; she had had two child-births, 6 and 2 years ago, respectively. The present disease set in after the last child was born, when the pains in her finger joints began. Later the pains expanded to the wrists, elbows, and shoulders. There had been reddening and

swelling of the affected joints, and she suffered much pain when she moved them. Periodical aggravation has occurred, particularly during the summer time.

Recently the patient has been complaining of a pronounced muscular fatigue, and she has to rest for a couple of hours daily in order to carry out her housework, which is not very strenuous as she has good assistance. No cardiac-pulmonary complaints were manifest, there were no dyspeptic symptoms, and no symptoms from the urinary tract.

The patient has been treated repeatedly with salicylates with brief periods of satisfactory results. In periods when the pains were particularly pronounced she was successfully treated with ACTH. But either treatment was followed by recurrences.

Allergic anamnesis: the symptoms aggravated, as mentioned during the summer time when the patient stayed with her children in their country house. This house had more dust in it than her town house, and in the country she did the housework without a help; moreover the children kept a cat as a pet. The patient stated that last summer, when she had been playing with the cat, she developed a swelling in her head and neck (she has a pronounced cutaneous allergy to cats). The patient sleeps with a feather counterpane, and there is a carpet with a felt-underlayer in her bedroom (she has a pronounced cutaneous allergy to duck feathers and cow hair). She has suffered frequent aggravations of her joint complaints when she has been doing much housework, particularly very dusty work.

On admission to the medical department of the Finsen Institute the patient had pronounced symptoms in the finger joints and wrists. She had just completed an unsuccessful treatment with salicylates.

The findings at the examination of the patient were as follows: height 158 cm; weight 57 kg; B.P. 120/70; normal fauces; pulmonary stetoscopy normal; cardiac auscultation normal and equalling the pulse; the sounds were normal with no accentuation; abdomen was normal, neither enlargement nor oedema were manifest; the liver and spleen edges were not palpable.

Extremities: Both wrists were slightly swollen but the mobility was not impaired. All finger joints were reddened and swollen, they were very tender when she used her fingers, but the mobility was not impaired; her fingers could be flexed to touch the hollows of her hands; slight muscular atrophy. The backs of both hands were moderately oedematous expanding up to the slightly swollen wrists. All other joints were normal.

All blood samples were normal (300 eosinophilic cells). The electrocardiogram showed nothing abnormal; X-rays of lungs, heart, wrists, and fingers showed nothing abnormal.

The allergic examination disclosed a cutaneous hypersensitivity to animal hair, feather, and dust.

The patient was desensitized with extracts of duck feather and dust. Now she sleeps with a counterpane without feather-

filling, and carpets and curtains have been removed from her bedroom, the floor of which is washed twice daily to keep the dust away.

After the institution of the treatment and the changes in her bedroom-furniture, the joint complaints have receded and, unless she has to perform very dusty work, or she goes to houses where cats are kept as pets, she suffers no complaints. The desensitization is being continued and it is hoped that she will be able to carry out even dusty housework without restraints.

The joint affections produced in these two patients are considered to be of allergic origin.

In the first case the patient must be considered restored to health; in the second the patient has recovered considerably during the initial treatment.

When the differential-diagnostic problems be considered against the chronic polyarthritis, it must be emphasized how periods, absolutely free of symptoms, may occur in the allergic polyarthritis, and that concurrent allergic manifestations generally are included in the anamnesis. The blood samples are generally normal, but a slight lymphocytosis may, as already mentioned, be encountered in the allergic polyarthritis, and in some cases also some eosinophilia. The sedimentation rate may be somewhat increased in the acute exacerbations, but the very high values met with in the chronic polyarthritis are not observed.

In the treatment of purely allergic polyarthritis one out of three possibilities may be chosen:

- (1) The complete removal of all objects which may cause a reaction in the patient.
- (2) The best possible removal of all objects which may cause a reaction in the patient and subsequent desensitization of the patient.
- (3) If (1) and (2) are impracticable it is recommended to give ACTH or cortisone during the most severe attacks.

The result of the treatment depends on a careful recording of the anamnesis and a thorough allergic diagnosis.

On the background of the cases dealt with here it will be seen that if the two first mentioned treatments are applied and the patient is capable of enduring the restrictions in his/her way of living, the prognosis in allergic polyarthritis is good.

SUMMARY

Two cases of allergic polyarthritis are discussed. One was a case of food-allergy (meat) and the patient was relieved of his symptoms on a diet without meat. The second case was an inhalation allergy (dust, feather, and animal hair). The patient was desensitized with extracts of dust and feather with a satisfactory effect on the polyarthritis.

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