

IS MIGRAINE AN ALLERGIC DISEASE?

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MIGRAINE has been the happy hunting ground of the theorist, and the problem has been attacked by representatives of all branches of medicine. Each in turn has discovered in migraine phenomena pertaining to his own specialty'' wrote Critchley and Ferguson³ in 1933. Not the least the allergists have participated in these attacks, and from many textbooks on allergy, one derives the impression that they captured the prey.

Many years before the concept of allergy was formed, some authors thought that migraine had some connection with the diseases which today we call allergic. In his brilliant article on asthma, now almost one hundred years old, Trousseau⁹ remarked that he frequently found migraine in persons suffering from asthma. It remained however for the French Lesné and Richet,⁷ and especially for the American Vaughan¹¹ in 1927, to set forth the ideas, that migraine was, or could be, an allergic disease. During the following 25 years much work has been done, but the problem is still unsettled. In several centers migraine still holds its place in the allergy clinic, in others the disease is treated in other departments.

Various circumstances have contributed to the concept of migraine as an allergic manifestation:

1) The most important is that patients with asthma, hay fever or other allergic diseases often have migraine as well, and migraine is found in their families.

2) Several authors have reported a very high percentage of positive skin reactions in migraine patients. Thus, Balyeat and Rinkel¹ were able to find positive skin reactions in every one of their 202 patients and the figures of other investigators are often likewise impressive.

3) By using elimination diets and provocation experiments, Rowe,¹² as well as Balyeat and Rinkel¹ and Randolph¹³ claim that they are able to find the offending allergens, and through the exclusion of these, to cure their patients.

4) Clinically, migraine has some resemblance to allergic disorders in its sudden and unexplained appearance and in its typical recurrent attacks.

5) Gansslen⁵ found eosinophilia in several of his migraine patients, and considered this as evidence of the allergic origin.

During recent years considerable doubt has been thrown upon the concept of migraine as an allergic disease. Feinberg⁴ for instance, does not believe that too many cases of migraine are allergic. Vallery-Radot¹⁰ is of the same opinion. In two recent works from Sweden, neither Hacksell et al.⁶ nor Bergquist² could find any evidence that migraine was an expression of allergy.

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OWN INVESTIGATIONS

In connection with a current study of the heredity of asthma,⁸ the incidence of migraine in the relatives of 191 asthmatics, 200 normal, nonallergic persons, and 50 patients with baker's asthma, was investigated. A total of 3815 relatives for 4 generations were seen. The diagnosis of migraine was based on the following criteria: Attacks of headache, especially if unilateral (hemicrania) accompanied by nausea, and often vomiting, and followed by prostration. Visual disturbances (scotomata or blind spots) occurred in about a quarter of the cases, and when found were typical. Auditory disturbances were much less common. Paraesthesias, especially of the fingers, were seen occasionally.

Incidentally, this investigation showed that secondhand information about heredity may be extremely misleading. The data here were obtained in each case by personal contact with the relatives. The relatives of the asthmatics and of the normal persons were found to be of the same ages and of quite comparable physical characteristics and social character. The relatives of the patients with baker's asthma were of somewhat older age groups and they cannot be compared directly with the two other groups. Table I shows the figures.

TABLE I. FREQUENCY OF MIGRAINE IN THE GROUPS OF RELATIVES OF ASTHMATICS, NORMAL PERSONS AND PATIENTS WITH BAKER'S ASTHMA

	NUMBER	NUMBER OF RELATIVES EXAMINED		NUMBER OF RELATIVES WITH MIGRAINE		NUMBER OF RELATIVES WITH MIGRAINE IN PER CENT	
		MEN	WOMEN	MEN	WOMEN	MEN	WOMEN
Asthmatics	191	777	857	20	65	2.57	7.59
Normal persons	200	855	935	13	61	1.52	6.54
Baker's asthma	50	188	203	3	9	1.60	4.43

Table I shows that migraine is common—especially among women—but one will note, that there is only a very slight difference between the incidence of migraine in the three groups of relatives. The result shows that there is no hereditary relationship between migraine and asthma. Further it shows that migraine is so frequent, that one may expect to find this disease in practically any family, if one contacts a reasonable number of relatives. Quite another question is the heredity of migraine by itself; although it cannot be discussed here, it should be mentioned that the evidence is in favor of simple dominant heredity.

A total of 171 patients with migraine was found among the 3815 persons interviewed. All of these were questioned about the cause of their migraine attacks. Most ascribed their headaches to "nervousness," worries or strenuous mental work, but not one of the 171 patients in this series gave a history of exogenous factors of probable allergic nature. Special attention was paid to the possible relation between the headaches and food but in spite of careful questioning no definite relation could be found in any patient. It must be admitted that this questioning does not by itself exclude the possibility of allergy to food as being involved in the mechanism of migraine, but it is surprising that not even a suggestion of such a mechanism was found. Studies of

food by the elimination of one item or the other were not made, as most of the patients were seen only once or twice. Skin tests and counts of the circulating eosinophils with the Dunger technique were made in a number of patients, selected because they had migraine by itself and without other allergic diseases. The results are shown in Table II. Although the total number of patients

TABLE II. SKIN TESTS AND CIRCULATING EOSINOPHILS IN MIGRAINE PATIENTS AND IN NORMAL, NONALLERGIC PERSONS

SKIN TESTS (INTRACUTANEOUS)				
	TOTAL NUMBER INVESTIGATED	ALL SKIN TESTS NEGATIVE	ONE OR MORE SKIN TESTS POSITIVE	PER CENT WITH POSI- TIVE SKIN TESTS
Normal, nonaller- gic persons	208	168	40	19.2
Migraine patients	40	30	10	25.0
CIRCULATING EOSINOPHILS				
		0-399 CIRCULATING EOSINOPHILS CU./ML.	≥ 400 CIRCULATING EOSINOPHILS CU./ML.	PER CENT WITH EOSINOPHILIA (≥ 400 EOSINOPHILS/ML.)
Normal, nonaller- gic persons	710	661	49	6.9
Migraine patients	55	52	3	5.8

examined is not great, it is clear that migraine patients and normal nonallergic persons do not differ regarding the frequency of positive skin reactions or eosinophilia. The small differences are not statistically significant.

SUMMARY AND CONCLUSIONS

- 1) The incidence of migraine among the 3815 relatives of 241 asthmatic patients and of 200 normal, nonallergic persons, was found to be identical.
- 2) This shows that migraine has no hereditary relationship with asthma.
- 3) Of 171 migraine patients, none gave a history of probable allergic factors eliciting their headaches. Skin tests and circulating eosinophils did not differ from values obtained on normal, nonallergic persons.
- 4) It is concluded that migraine is probably only rarely of allergic nature.

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