

The pathergy test and Behçet's syndrome in Britain

P. G. DAVIES,¹ J. N. FORDHAM,² J. R. KIRWAN,¹ C. G. BARNES,²
AND W. J. DINNING³

From the ¹Bone and Joint Research Unit, The London Hospital Medical College; the ²Department of Rheumatology, The London Hospital, London E1 1BB; and ³Moorfields Eye Hospital, City Road, London EC1

SUMMARY Skin hypersensitivity to needle puncture (pathergy test) together with a positive HLA B5 antigen has been reported as a diagnostic test for Behçet's syndrome (BS) in Turkish patients. We have studied the pathergy test by 2 methods in 7 healthy volunteers who have the HLA B5 (Bw 51 split) antigen and 19 patients with BS. The test was negative in all the normal volunteers, and only one of the 19 patients with BS had a positive test by one of the 2 methods. Cluster analysis of our patients and those reported from Turkey showed no difference in their clinical features. The positivity of the pathergy test, and hence its diagnostic usefulness, seem to differ between Britain and Turkey, and we conclude that this difference is not related to the possession of the HLA B5 (Bw 51 split) antigen.

The cutaneous hypersensitivity reaction to percutaneous trauma by needle prick (positive 'pathergy' test) has been reported as being a common feature of Behçet's syndrome,^{1,2} particularly in Japan and Turkey, both being countries with a high prevalence of this condition. Yazıcı *et al.* have recently proposed that the combination of a positive pathergy test and the presence of the HLA B5 antigen is a diagnostic marker of Behçet's syndrome, their dual negativity virtually excluding the diagnosis.³ In that study 82% of 49 patients had a positive pathergy test and 84% carried HLA B5. Both tests were positive in 65% of the Turkish patients. However, the reliability of the pathergy test as a diagnostic feature has been questioned.⁴⁻⁶ We have therefore studied the pathergy test in a group of patients with Behçet's syndrome seen at Moorfields Eye Hospital and the London Hospital, Whitechapel, and a group of normal subjects who possess the HLA B5 (Bw 51 split) antigen.

Patients and methods

Seven normal subjects who carry the HLA Bw 51 antigen (drawn from laboratory staff who had had histocompatibility typing performed to provide a pool of subjects of known HLA status) and 19 patients with 'definite' Behçet's syndrome according

to the diagnostic criteria of Mason and Barnes⁷ and O'Duffy⁸ were included in the study.

The pathergy test was performed by 2 methods. The skin of the flexor aspect of the left forearm was cleaned with 70% isopropyl alcohol and pricked intradermally with a sterile hypodermic needle (size 25G). After similar skin preparation 0.1 ml of 0.9% saline was injected intradermally on the flexor aspect of the right forearm. The injection sites were read at 48 hours by the patient and classified as negative, positive (red and raised), or strongly positive (red and raised with a pustule) with reference to illustrations provided. These illustrations were similar to those shown in the report of Yazıcı *et al.*³ The patient then returned the result by post.

Cluster analysis⁹ was performed on the data from 19 patients reported on here and those of the 42 patients reported on by Yazıcı *et al.* This analysis combines cases into groups, or clusters, with similar clinical profiles in a stepwise manner until a single large cluster including all the data is established. The chart, or 'dendrogram', it produces displays the interrelationships between the cases, with cases of high similarity being linked near the top of the dendrogram.

The database consisted of the age and sex of each patient and the presence or absence at any time of aphthous ulceration, genital ulceration, uveitis, skin lesions (pyoderma and/or erythema nodosum), arthritis, thrombophlebitis, and a positive pathergy test. HLA B5 status was not included, as this was unknown in our 19 patients.

Results

Details of the age, sex, and ethnic origin of the normal HLA Bw 51 carrying subjects are shown in Table 1, together with their pathergy response. In all 7 subjects the pathergy response was negative by both methods.

The clinical features and country of birth of the 19 patients with Behçet's syndrome are shown in Table 2, which also indicates which features were active at the time of study. Eighteen patients reported a negative pathergy test by both methods, and one patient reported a positive response to the intradermal saline injection only.

Cluster analysis of all 68 patients (19 from this study plus 49 from Yazıcı *et al.*³) showed that the 19 patients reported here are scattered throughout the group and do not form a separate cluster (Fig. 1). This was the case even though the pathergy test

results were included in the data-base, which would tend to separate the London patients from those seen in Turkey. Analysis of the Turkish data alone showed that the pattern of relationships between the Turkish cases was almost identical to that obtained with our patients, indicating that the overall pattern of clustering was not dependent on the inclusion of the London data nor on the result of the pathergy test.

Discussion

These results confirm the general impression that the pathergy test is seldom positive in British patients suffering from Behçet's syndrome. It is interesting to note that our one patient who had a positive pathergy test was a Greek Cypriot. The frequency of other clinical features of Behçet's syndrome, in particular pulmonary and gastrointestinal lesions, varies in different parts of the world, the former having been reported mainly from Turkey and the latter from Japan.¹⁰⁻¹² The marked difference in frequency of positive pathergy tests in the London and the Turkish patients would suggest that they are representative of 2 different syndromes. If this were the case, differences other than in cutaneous hypersensitivity would be found between the groups. Cluster analysis shows, however, that there was no clear separation between these 2 groups of patients in terms of their other clinical features.

The explanation for this observed difference in pathergy testing is not clear. The possibility that cutaneous hypersensitivity may occur in normal people in Turkey or in other medical conditions has

Table 1 Details of normal subjects carrying HLA Bw 51 and their pathergy response

	Country of origin	Age	Sex	Pathergy
1	Turkey	32	M	—
2	Spain	37	M	—
3	Iraq	32	M	—
4	British Caucasian	28	M	—
5	"	35	M	—
6	"	24	F	—
7	"	28	F	—

Table 2 Details of patients and pathergy response

Patient no.	Country of birth	Age	Sex	Aphthous ulceration	Genital ulceration	Uveitis	Skin lesions	Arthritis	Thrombophlebitis	Pathergy
1	Britain	39	M	+	+	-	+	+	-	-
2	Britain	49	F	+	+	-	+	+	-	-
3	Britain	29	M	+	-	+	+	+	-	-
4	Britain	35	M	+	+	-	+	+	+	-
5	Barbados	46	M	+	+	+	+	+	-	-
6	Britain	41	M	+	+	+	+	+	-	-
7	Britain	60	M	+	+	-	+	+	+	-
8	Britain	60	M	+	+	-	+	+	+	-
9	Britain	68	F	+	+	+	+	+	-	-
10	Britain	59	M	+	+	-	+	+	-	-
11	Britain	41	F	+	+	-	+	+	-	-
12	Britain	39	M	+	+	+	+	+	-	-
13	Kenya (Asian)	31	M	+	+	+	-	+	-	-
14	Britain	30	M	+	+	+	+	-	-	-
15	Italy	30	M	+	+	+	+	+	-	-
16	Cyprus	27	M	+	-	+	+	-	-	+
17	Britain	34	M	+	+	+	-	-	+	-
18	Jordan	33	M	+	+	+	+	+	-	-
19	Britain	33	F	+	+	+	+	+	-	-

*Active at time of testing.

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