

STUDY OF NEURODERMATITIS CIRCUMSCRIPTA PATIENTS WITH PSYCHOLOGICAL TESTS

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Summary

2.54 percent of patients attending the dermatology clinic were found to have neurodermatitis circumscripta. Twenty adult male patients with the disease who were educated at least upto high school were subjected to detailed psychological testing. They were administered 10 cards of TAT, Sinha's anxiety scale, self-rating depression scale of Zung and Wechsler adult intelligence scale tests. All the patients were found to have high IQ levels. Anxiety of a very high degree was observed in 55.8 per cent of the patients. Anxiety levels were high in patients who were eldest in the family. Sixty five per cent of patients showed high degree of depression, which was more apparent in the younger age group. Patients with first and second ordinal position were more depressed. No relationship was found between the disease and the financial and educational status, duration and extent of disease and I. Q., anxiety or depression levels. Need (n) affiliation and (n) achievement were the two most dominant needs expressed.

KEY WORDS: Neurodermatitis, lichenification, anxiety, depression, intelligence, needs.

Introduction

The concept that emotional factors affect the skin is very old in the history of medicine and in fact is legendary. The relationship of skin with psychocutaneous illnesses has gradually gained recognition. Some dermatoses have been recognised purely as of psychological origin; for example, acarophobia, neurotic excoriations and tricho-tillomania. In some other dermatoses psychological factors play a

prominent etiological role. With increasing recognition of psychological factors in the genesis of somatic diseases, dermatologists have emphasised the role of the psyche in various skin diseases, such as pruritus, neurodermatitis, hyperhidrosis, etc.

One might hypothesize that skin is strongly related to the psyche firstly because the skin and nervous system have the same embryologic origin from the ectoderm and secondly because the skin holds a uniquely important position, as a shelter which protects us and a facade which displays us. From infancy skin is the source of much erotic gratification. Further, since the skin communicates some of our emotional states to others it may sometimes be a source of embarrassment when an individual would rather hide such emotions,

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Merely to observe that psychological factors play an important role in the genesis or course of these illnesses is not good enough. We must attempt to discover what special factors are involved in this genesis.

A brief review

Aggression is said to be an important cause in the production of the symptom-complex of psychosomatic disease¹. Repression of anger, resentment, joy and humiliation in the form of a defence is said to lead to attacks of itching². Itching occurs when an aggressive impulse is warded off and the energy is discharged into a pathway of organic formations.

In neurodermatitis pruritus plays an important role in producing and maintaining the lesions and excoriation of the skin is fundamental. Emotions of anger with depression and feelings of guilt generally precipitate an exacerbation of cutaneous eruption. The family background is often one of hostile dependent maternal relationship in which itching and scratching symbolise anger at the mother figure handled masochistically due to guilt³. Patients with atopic dermatitis which has been considered to be related to neurodermatitis are timid and shy and tend to handle their feelings by suppressions⁴ and find difficulty in expressing anger and hostility^{4,6}. Rogerson⁷ and Juurmaa and Sipponen⁸ found higher intelligence levels in atopics than in nonatopic subjects with the same educational background. Associated compulsive behaviour is another feature. Recharadt⁹ in one study observed that among atopics, eldest children were over-represented and youngest children under-represented. In another study on atopics Recharadt¹⁰ confirmed that higher social and educated groups were over-represented. A positive correlation of this factor with the severity of eruption was also noted. Graham & Wolf¹¹

stated that itching in the dermatitic patients correlated with vasodilatation caused by emotional factors.

Present study was conducted to evaluate psychological correlates in patients with neurodermatitis circumscripta to see if they could fit into any one personality pattern.

Materials and Methods

The study was conducted in the Skin and STD outpatients department of Sir Sunder Lal Hospital, Institute of Medical Sciences, BHU, Varanasi.

A total of 11,734 patients were seen in the clinic during one year of whom 9999 were adults and 1735 children. Among these 298 patients were diagnosed to have neurodermatitis circumscripta constituting 2.54% of the clinic attendance.

Clinical diagnosis of neurodermatitis circumscripta was made when the pruritic lesions were circumscribed, lichenified and/or papular and/or excoriated, slightly scaly or moist and located at sites which are easily accessible to rubbing and scratching. Site of first involvement and extent of lesions were recorded. Only male patients educated at least upto high school were included in the study. 20 patients could be thus studied. Their ages varied from 19-45 years (mean age 27.25 years) and duration from one month to 5 years. Most patients belonged to low middle class strata. Ordinal position of the patients among their siblings was also recorded.

Administration of the tests

The patients, after being explained a little about the psychological basis of their malady in the OPD, were called to a different place for a short interview and detailed psychological testing was conducted in a quiet room where they could feel free and relaxed.

The interview was about their education, vocation, interests, family status, financial status, present and past problems. Relationship of any psychological or other problems with the onset and course of disease, was recorded. Each patient was then given a brief introduction about the various tests. The patients were assured that none of the information given by them will be divulged, but kept strictly confidential.

The tests were administered in two sessions. In the first was included the 5 cards of TAT, two questionnaires; the Sinha's Anxiety scale¹² and the self rating depression scale of Zung^{13,14}. There was no time restriction for the tests. Next day the patient was given the other 5 TAT cards and Wechsler adult intelligence scale, with 4 sub-tests each, in the verbal and performance scale. Time was noted for all the 8 sub-tests of the Wechsler adult intelligence scale.

Interpretation of the TAT stories was made by a trained interpreter (a clinical psychologist). The series of pictures selected on pragmatic grounds is the third revision by Henry A. Murray¹⁵. Twelve of the twentyeight needs were analysed.

Manifestations of anxiety being multitudinal, Sinha's self analysis form of the "Yes" and "No" type taps the various areas and dimensions of anxiety.

Self rating depression scale of Zung comprises of a list of 20 items. The items comprehensively delineate widely recognised symptoms of depressive disorders. The scale is so constructed that a low index indicates little or no depression and high index indicates depression of clinical significance.

The Wechsler adult intelligence scale (WAIS) sub-tests, used to tap the intelligence in the present study,

are verbal and non-verbal. In this study only eight sub-tests were taken. The use of short scales has been recommended¹⁶.

Results

Out of 9999 adult skin patients seen in one year 298 (2.54%) suffered from neurodermatitis circumscripta. The male to female ratio among these patients was 4 : 1 as compared to 4.6 : 1 of the general patients indicating no predilection for either sex in this disease.

The average total IQ on WAIS was found to be 100 and above in all the twenty tested cases. Out of 10 patients in first ordinal position, seven had the highest IQ. Educational and financial status, duration and extent of the disease and depression and anxiety had no relationship to IQ. Ten out of the twenty (50%) were first born and five out of twenty (25%) had the second ordinal position.

Anxiety of high to very high degree was observed in more than half (60%) of the total number of patients ($\chi^2 = 5.20$, $df. = 2$, $p =$ approaching 0.05 level) (Table 1). 40% of the patients did not have anxiety of any severity. Anxiety levels were high in the old patients ($\chi^2 = 7.5$, $df. = 2$, $p < 0.05$) and low in the younger group ($\chi^2 = 1.65$, $df. = 1$, $p = n.s.$). Level of anxiety had no relationship with the educational and financial status of the patients. Anxiety was more in patients with longer duration of disease but no correlation was found with the extent of the disease.

Sixty five per cent of patients showed high degree of depression ($\chi^2 = 0.90$; $df. = 1$, $p < 0.1$). Depression was more evident in the younger age group. ($\chi^2 = 3.82$, $df. = 1$, $p =$ approaching 0.05) (Table 1). Patients with first and second ordinal position were found to be more depressed ($\chi^2 = 1.83$,

TABLE 1

Showing the distribution of patients with depression and anxiety in relation to their age.

Age (yrs)	Depression		Anxiety		
	Normal	High	Very High	High	Normal
41 to 45	2	—	—	—	2
36 to 40	—	2	2	—	—
31 to 35	1	1	1	—	—
26 to 30	2	1	1	—	3
21 to 25	1	4	3	1	1
16 to 20	1	5	3	1	2

TABLE 2

Showing the distribution of patients with depression and anxiety in relation to ordinal position

Ordinal position	Depression			Anxiety	
	Normal	High	Very High	High	Normal
First	3	7	8	1	1
Second	1	4	3	—	2
Third	2	2	—	—	4
Fourth	1	—	—	—	1

df. = 1, p = n.s.) (Table 2). No relationship was however found between the financial and educational status, duration and extent of disease and intelligence of the patient with degree of depression ($\chi^2 = 0.58$, df = 1, p = n.s.). There was however definite direct relationship between the degree of depression and anxiety ($\rho = 0.7023$, $p < 0.01$) (Table 1).

An analysis of rating for needs showed 'n' affiliation and 'n' achievement to be the two most dominant needs expressed by all, n superiority and n dominance coming next (Table 3). n aggression was active in one patient in whom n achievement was comparatively low.

Discussion

The idea that emotional factors affect the skin is very old and the description of a case of angioneurotic oedema by Sydenham in 1681 as

"hysteric diseases" is the oldest record of skin disease attributed to emotion. Brocq and Jacket as far back as 1891 coined the term "neurodermite" for a certain chronic eczema.

Lynch et al¹⁷, Bethune¹⁸ and Musaph¹ observed that neurodermatoses appeared to be associated with psychological imbalance, neuropathic disposition and psychological maladjustment. The classification of various types of neurodermatitis is however incomplete, arbitrary, varied and disputed¹⁹.

Even though many dermatologists²⁰ believe that atopic dermatitis and neurodermatitis circumscripta are different entities there is reason to believe that patients with these two diseases have similar predisposing constitution and heredity. Similarity in morphology of lesion in the two diseases is well recognised. To avoid any controversy we selected patients

TABLE 3

Showing the needs score and needs scatter of patients of neurodermatitis circumscripta.

Pt. No.	Needs											
	Ach. (1)	Acq. (2)	Affl. (3)	Agg. (4)	Cogz. (5)	Count (6)	Domi. (7)	Exhb. (8)	Pass. (9)	Rej. (10)	Ret. (11)	Sup. (12)
1.	9	7	15	7	3	2	.0	—	2	4	6	8
2.	14	1	16	4	2	2	2	3	4	2	1	7
3.	10	1	13	5	2	1	7	6	—	—	—	3
4.	19	2	22	7	1	5	1	—	2	—	1	16
5.	19	2	23	7	3	—	6	—	1	—	1	13
6.	5	—	19	21	2	2	11	2	2	3	—	9
7.	18	7	20	5	—	6	1	—	6	2	5	9
8.	19	3	27	1	—	—	7	2	3	—	2	10
9.	19	3	29	—	4	4	2	—	6	4	3	4
10.	8	3	21	4	1	1	8	3	3	—	—	4
11.	21	4	20	6	3	13	14	4	—	—	—	9
12.	21	1	28	6	2	—	7	8	—	3	—	11
13.	19	—	26	7	3	3	11	—	—	10	—	9
14.	20	4	26	4	3	5	4	—	3	—	5	6
15.	21	7	28	3	5	5	5	—	5	7	—	7
16.	26	—	22	2	—	9	10	5	—	3	3	6
17.	22	5	29	—	—	10	12	—	3	—	3	9
18.	28	4	33	7	—	11	14	2	—	—	2	14
19.	27	7	30	8	—	6	11	—	—	—	19	6
20.	27	—	32	7	—	9	6	3	2	4	8	13
Total	372	61	479	71	34	94	149	38	42	42	59	179
Average	18.6	3	23.9	3.5	1.7	4.7	7.4	1.9	2.1	2.1	2.9	8.6

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|------------------|--------------------|-----------------|-------------------|
| 1. n achievement | 4. n aggression | 7. n dominance | 10. n rejection |
| 2. n acquisition | 5. n cognizance | 8. n exhibition | 11. n retention |
| 3. n affiliation | 6. n counteraction | 9. n passivity | 12. n superiority |

with classical lesions of neurodermatitis circumscripta confined to one or two patches only and with unilateral involvement.

The incidence of neurodermatitis in the present study was 2.54% of total skin OPD attendance. Eller and Silver²¹ and Rook and Wilkinson²² report that the disease is more common in women. Involvement of the neck was seen in 40 percent of our patients which included both males and females. This is in contrast to the observations of Eller and Silver²¹ and Rook and Wilkinson²² who stated that neurodermatitis of the neck is almost confined to women.

Our findings of a high IQ in the patients is in conformity with the observation of several earlier workers^{7,8} but in contrast to the findings of other workers who found lower than average intelligence in their patient group. However, no conclusion can be drawn from our study in which only educated patients were chosen. Further our sample is small. It is possible that patients with high IQ recognise the need for treatment and report early for the same. Anxiety is both an indicator of response to stress and a precursor to further stress responses. There is scarcely a conflict experienced by man that has not been implicated in the psychodynamics of neuroderma-

titis. Intense anxiety was seen in 60% of our patients. This could be primarily the cause for the development of neurodermatitis circumscripta or it could have been secondary to the development of the lesion itself. The more frequent involvement of the eldest child in the present study is similar to the observation in infantile eczema where the first male child is more often said to be affected. If the anxiety is secondary to the persistent lesion it would be expected more in those who have either more lesions or when the disease is more chronic. We were not able to find any relationship between the chronicity of illness and the level of anxiety. This indicates that the high level of anxiety in a large percentage of our patients is not secondary to skin disease. Chronic anxiety is well known to be manifested in many strange manners, the ritualistic behaviour of repeated and continuous rubbing of the skin with the production of neurodermatitis circumscripta being possibly one of these. In the study of Hall-Smith and Norton²³ on 150 skin patients 59 percent had symptoms to warrant psychiatric help. Similarly Bhatt et al²⁴ found that skin patients in general had high neuroticism levels.

Depression was seen in two thirds of the patients in the study. 82 percent of patients were below 25 years of age (Table 1). It appears that there is less responsiveness, more indecision and free flowing anxiety in the age group below 25 years and they are emotionally more easily upset than the older age groups with neurodermatitis circumscripta. A high degree of depression was observed in 73 percent of the patients in first ordinal position. Patients upto intermediate level of education were more depressed as compared to those with graduate and postgraduate qualification, which perhaps indicate that higher education and maturity may reduce depression.

There was a strong positive correlation between anxiety and depression in our patients, as have been noted in several earlier studies. However, 3 patients with high depression score had normal anxiety levels.

An analysis of profile of manifest needs showed n affiliation (100%), n achievement (95%), n superiority (55%) and n dominance (40%), n aggression was seen in only one patient. It is possible that need deprivation may have incurred diffusion in the estimation and decision-making related to their manifest needs. Aspiration and interpersonal relationship may have undergone unusual experiences leading to emotional reaction, conflicts and cumulative frustrations. This is evident from the significantly high n affiliation and n achievement observed in one series.

Need aggression has been observed by many workers in patients with atopic dermatitis^{25,26}. In contrast in our study only one patient had shown the presence of n aggression.

Overall significance of emotional problems

Out of 20 patients with neurodermatitis circumscripta 70% had either anxiety or depression or both of varying severity. Practically all patients with neurodermatitis circumscripta had n affiliation and n achievement. These support the concept that emotional factors play an important role in favouring the development of lichenification and perpetuation of the same in predisposed subjects. Psychoses and skin manifestations are alternate ways of dealing with stress; the manifestations depending upon many variables.

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