Lichen simplex chronicus, neurotic excoriation and nodular prurigo and their correlation with atopy: A case-control study

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Background: Lichen simplex chronicus (LSC), nodular prurigo (NP), and neurotic excoriation (NE) are considered as psychogenic pruritus disorders. Atopic dermatitis (AD) is also classified by some as a psychocutaneous disorder to point out the influence of psychologic factors in its recurrence, persistence and precipitation. AD and psychogenic pruritus share many common features including immunohistology, clinical course and their psychiatry. The aim of this assay was to study the correlation between psychogenic pruritic disorders and atopy.

Methods: Ninty-two patients with psychogenic pruritus, including 57 cases of LSC, 27 cases of NE and 8 cases of NP, were referred to us within a period of 18 months. The patients were studied in our private Dermatology-Psychiatry liaison Clinic in order to find out the correlation of those disorders with atopy. Ninty-two healthy individuals with no apparent dermatologic disoder were selected from the general population as controls. Patients were considered atopic if they had the history of dermatitis, asthma or hay fever with the typical age of onset, distribution, seasonal variation, and history of remission and recurrence. Atopy was investigated by physical examination and thorough history by completing a questionnaire containing all reported major and minor criteria in the literature.

Results: Forty five out of 92 patients with psychogenic pruritic disorders (48.9%) were atopic which was significant in comparison with the control group (20.6%) ($p<0.0001$, odd ratio = 3.68 (3.29 – 4.24), and CI = 99%).

Conclusion: This study showed that atopic state seemed to be more common in patients with psychogenic pruritic disorders.

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INTRODUCTION

Lichen simplex chronicus (LSC), nodular prurigo (NP), and neurotic excoriation (NE) are known as psychogenic pruritic disorders (PPDs) to determine the psychologic influence on their initiation, intensity or perpetuation [1-4]. They are also known as endogenous eczemas to point out the intrinsic nature of these pruritic disorders. It means that for psychogenic pruritic disorders to be expressed, an intrinsic factor is required without which the psychologic factors alone may not be able to express them. The psychogenic pruritic disorders share many common histoimmunologic features with chronic atopic dermatitis. Acanthosis, hyperkeratosis, and hypergranulosis are common

features among these eczemas [5]. Parts of these changes may be due to the repeated traumatic effect of rubbing and harsh scratching. The presence of specific histopathologic changes, inflammatory cell infiltrates, local cytokines, neuropeptide changes and neurovascular alteration [6-9] indicate that PPDs are not simple psychologic or self-inflicted diseases but they are physical illnesses which may be intensified or perpetuated by emotional factors and or emotional upset may be part of their character. As in atopic dermatitis, immunosuppressive agents can be used in some psychogenic pruritic disorders. Topical, intralesional and even systemic steroids are effective in PPDs, although not permanently, with variable success. Other immunosuppressive agents such as cyclosporine have been used for the treatment of both AD and PPDs [10-11]. In this study, we attempted to determine the correlation of PPDs and atopy or AD.

PATIENTS AND METHODS

Within a period of 18 months, ninety-two patients who were clinically diagnosed with psychogenic pruritic disorders were studied in our private Dermatology-Psychiatry Liaison Clinic, to point out their association with atopy or AD. The diagnosis of psychogenic pruritic disorders was mainly clinical. In order to rule out other conditions, biopsy and paraclinical work-ups were done for some patients. The inclusion criteria for psychogenic pruritic disorders were as follows:

- All patients had a long history of periodic, impulsive and severe itching with variable itch-free periods in between. The patients responded only partially and temporarily to conventional therapies.
- The itching was relieved, and the patients felt satisfied by harsh scratching, picking, rubbing and laceration.
- History of exacerbation by emotional stresses was present.
- There was normal skin between the pruritic lesions in the cases of NE and NP.
- All lesions were within hand-reaching areas.

Ninety-two healthy individuals, who were matched for sex, age and socio-economic conditions, were selected from the general population to form the control group. Only those people with apparently no dermatologic and or pruritic complains were included.

Data was collected by direct questioning, physical examination and completing a questionnaire. The questionnaire included questions regarding the history of AD, asthma, hay fever with typical distribution, age of onset, history of remission and recurrence, all clinically suggestive of being atopic. Atopy was considered if patients had one or a combination of the following criteria:

1. Dermatitis with typical distribution and onset suggestive of AD
2. Allergic rhinitis, conjunctivitis, pharyngitis with typical seasonal recurrence
3. Allergic asthma and bronchitis with episodes of remission and recurrence and typical age of onset
4. Positive first-degree family history of typical above-mentioned mucocutaneous symptoms plus 3 or more minor criteria indicated in Hanifin_Rajka and UKWP diagnostic criteria for AD [12,13].

All the collected data were tabulated and analyzed with SPSS software version 12 using statistical test such as t-test and Chi- square.

RESULTS

Fifty-seven patients (62%) were female and 35 ones (38%) were male. Mean age of the patients was 31 years. Of these 92 patients, 57 (62%) suffered from lichen simplex chronicus, 27 (29.3%) had neurotic excoriation and 8 cases (8.7%) had nodular prurigo.

Of the 92 psychopruritic patients, 45 (48.9%) including 26 (45.6%) cases of LSC, 14 (51.8%) cases of NE and 5 (6.2%) cases of NP were found to have atopia. Diagnosis was based on previous positive history of mucosal and respiratory involvement, clinically suggestive of atopic mucosal and respiratory involvement, as well as the Hanifin-Rajka and UKWP criteria for AD [12,13]. About 45.6%, 51.8% and 62.5% of the clinically proved atopic cases had LSC, NE and NP, respectively. Among controls, 19 cases (20.6%) were atopic. The rate of atopic state was more common in PPD patients than in the control group. P-value was <0.001, odd ratio was 3.68, and the 99% CI was 3.29-4.27.

DISCUSSION

Although some authors have found some

association between AD and psychogenic pruritic disorders such as LSC and NP [14], AD and psychogenic pruritic disorders are usually considered as separate entities in the literature.

The associations of LSC, NE, and NP with depression, anxiety, obsessive-compulsive and personality disorders are well established in the literature [1-4]. AD is also known as neurodermatitis from the past. Although it was recently found that neuronal and neuropeptide changes occur in chronic atopic lesions [15-17], the term neurodermatitis used for AD may represents its association with psychiatric rather than the neurologic changes.

Atopic patients are reported to be vulnerable to different psychological problems including depression, anxiety, obsessive-compulsive (OCD) and personality disorders [18-25]. The psychobiological pathways of stress-related modulation of AD symptoms are also discussed before [20]. Some authors recommend the treatment of psychological problem as part of AD management [19-21].

PPDs and AD share many other clinical and histoimmunologic features. Severe itching is a common feature of all PPDs and chronic atopic dermatitis. They are almost similar in the aspects of histoimmunologic findings [7-8]. All are intensified, initiated and perpetuated by emotional and psychological factors, and all respond, although with different rates of improvement, to immunosuppressive agents such as topical, intralesional and systemic steroids and cyclosporine. There are some neural and neuropeptide change in the lesions of NP, LSC and AD [9-11]

There are many patients with emotional problems but only a minority of them may develop psychogenic pruritic disorders. Therefore, PPDs, like AD, are physical illnesses which may develop in the patients with a specific psychiatric background. Psychologic disorders may not be the simple consequence of these chronic diseases but may be part of their spectrum or their character. Based on all available evidence, AD and PPDs are related in all aspects of clinical, psychiatric, and neurohistoimmunologic aspects.

This study showed an association between PPDs and atopic state (odds ratio = 3.68, $p<0.001$). Based on available evidence, it could be suggested that PPDs might be the localized variants of atopic dermatitis in patients with a specific psychiatric background. However, further study with larger sample size and more structured method should be performed to elucidate the association of atopic state and psychogenic pruritic disorders more clearly.

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