EXFOLIATIVE DERMATITIS : STUDY OF SYSTEMIC MANIFESTATIONS

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Summary

This report is a study of 40 cases of exfoliative dermatitis with special reference to systemic manifestations. The condition was frequently observed in 3rd to 5th (75%) decades of life with male to female ratio of 3 : 1. The duration of the disease was usually short. In majority of cases, drugs were the precipitating factors.

Lymphadenopathy was observed in 70% cases with hepatomegaly in 25% and splenomegaly in 7.5% cases. 37.5% of cases had pyrexia during their illness without any evidence of infection, pointing towards a poor temperature control mechanism. Cardio-vascular system revealed hyperdynamic circulation in 20% of cases. All patients had hypoalbuminaemia and 27.5% of cases had oedema of feet.

Exfoliative dermatitis is a symptom complex of an inflammatory disorder with generalised erythema varying amount of exfoliation and constitutional symptoms. It may occur as a primary or idiopathic entity without preceding dermatologic or systemic disease[1]. The etiological factors responsible for this condition have changed considerably in the past couple of decades[2]. The aetiologic agents precipitating or triggering the process, are likely to vary in different countries and in the different regions of the same country.

Besides the epidermis and dermis, the disease also involves other organic systems of the body. The present communication is a retrospective as well as prospective study for evaluating various clinical features of this condition as it is observed in Bundelkh-and division of Uttar Pradesh.

Material and Methods

Records of 25 patients with exfoliative dermatitis, who attended the Dermato-Venereology Clinic and/or got admitted to the hospital from January 1972 to January 1974 were analysed. The prospective study was made on 15 patients admitted in M. L. B. Medical College Hospital, Jhansi from February 1974 to January 1976. The details of the history and clinical examination were noted. Laboratory investigations comprising of complete haemogram, urine and stool

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Received for publication on 9—4—1976

Paper read at the International Symposium on Pigmentary Disorder and Communicable Dermatosis and IVth Annual Conference of Indian Association of Dermatologists, Venereologists and Leprologists, New Delhi, February, 1976.

examination, fluoroscopy of chest, blood sugar levels, liver and kidney function tests were performed. Biopsy was taken whenever possible.

Observations and Results

The prevalence rate of exfoliative dermatitis in our study has been 0.21%. The condition was frequently observed in third (20%), fourth (32.5%) and fifth (22.5%) decade of life (Table 1). Seventy five percent of the patients were males. The youngest patient was 9 years and oldest 68 years of age.

TABLE 1

Age and sex distribution

Age groups in years	Males	Females	Total	Incidence in percentage
upto 20	3	—	3	7.5
21 — 30	6	2	8	20 0
31 — 40	9	4	13	32.5
41 — 50	7	2	9	22.5
51 — 60	4	1	5	12.5
above 60	1	1	2	5.0
Total	30	10	40	—

Sex ratio = male : female = 3 : 1

Duration of the disease

In the majority of patients (62.5%) the duration of the disease was less than 3 months whereas in 20% of cases it was 3–6 months. One patient suffered from this disease for a period of 6 years and another for 10 years (Table 2).

TABLE 2

Duration of the disease

Duration	No. of cases	Incidence in percentage
Upto 3 months	25	62.5
3—6 months	8	20.0
7—12 months	3	7.5
1—5 years	2	5.0
more than 5 years	2	5.0

Predisposing Factors

The various aetiological factors responsible for exfoliative dermatitis in the present series of cases are enumerated in table 3. In 14 subjects with psoriasis who subsequently developed exfoliation, topical medication was thought to be responsible in 8 of them and sudden withdrawal of cortisone in two. In the remaining 4 cases the

TABLE 3

Showing aetiological factors

Original cause	Probable Causes		No. of cases
	Local	Systemic	
1. Psoriasis (14 cases)	Ung. Salicylic acid	—	2
	Oil (Mustard)	—	1
	Herbs	—	3
	Nature not known	—	2
	—	Withdrawal of cortisone	2
	No responsible agent		4
2. Pulmonary Tuberculosis (6 cases)	—	Isonex+Thiacetazone	3
	—	Streptomycin+INH+PAS	2
	—	Streptomycin+INH +Pyrazinamide	1
3. Leprosy	—	Dapsone	2
4. Pyoderma	—	Penicillin	1
5. Tinea cruris	Multifungin	—	2
6. Atopic dermatitis	—	—	2
7. Miscellaneous	—	—	13

psoriasis seemed to have progressed to exfoliation without any precipitating factor. Local application of multifungin ointment (Bromo-salicylchloanilide with Soventol Salicylate) had led to exfoliation in two patients with Tinea cruris. Systemic drugs were accountable for exfoliative dermatitis in 9 patients. Amongst these 6 were cases of Pulmonary Tuberculosis taking various combinations of antituberculous drugs. No predisposing cause could be found in 13 patients.

Clinical Manifestations

The common symptoms included marked itching, scaling and redness. Fever, chills and burning sensation were infrequently encountered (Table 4). The onset of the disease was insiduous in 26 and acute in 14 patients. Latter had large exfoliative lamellae as compared to those where the onset was slow and gradual. Scalp, palms and soles were also involved in exfoliation in 10 cases. In many of them the disease extended to hair follicles and caused varying degree of hair loss.

TABLE 4

Clinical symptomatology

Symptoms	No. of cases
Itching	40
Scaling	40
Redness	38
Chills and fever	6
Burning sensation	4
Vesicles and / or oozing	7

Systemic Response in exfoliative Dermatitis

The involvement of organs other than epidermis and dermis is shown in Table 5. Lymphadenopathy in 6 cases (15%) and hepatomegaly in 9 subjects (22.5%) were recorded and one of the latter had concommitant splenomegaly. Sixteen patients showed clinical evidences of hypervolaemia and hyperdynamic circulation.

TABLE 5

Clinical findings

Signs	No. of cases
Exfoliation	40
Papules	6
Lichenification	13
Oedema	11
Hepatomegaly	8
Pyrexia	6
Lymphadenopathy	6
Gynaecomastia	4
Hepato-splenomegaly	1
Hypervolaemia and hyperdynamic circulation	16

Metabolic Response

The basal metabolic rate was raised in 6 out of 10 patients studied (Table VI), the value ranging between +60 to +110. This parameter fell towards normal with spontaneous or induced remission of the disease. Gynaecomastia was noted in 4 patients.

Biochemical Changes

Hypoalbuminaemia was a constant feature in all the cases (Table 6). This resulted in pedal oedema in 11 cases. Proteinuria was found in 6 cases. Three patients had altered glucose tolerance test and 2 had raised blood urea.

TABLE 6

Laboratory findings

Investigations	No. of cases
Raised B.M R. (performed in 10 cases)	6
Hypoalbuminaemia (less than 3 gms%)	21
Hyperglobinaemia (more than 2 gms%)	22
Protienuria	6
Abnormal glucose tolerance test	3
Raised blood urea (more than 80 mg%)	2

Histological Changes

Histological changes were non-specific in nature. Twenty cases revealed moderate hyperkeratosis and/or para-keratosis with varying degree of acanthosis. Atleast in 4 patients of psoriasis the histological picture was suggestive of the primary disease. It consisted of

elongated and rounded rete ridges associated with elongated dermal papillae having dilated blood vessels. Few of the papillae were hugging the stratum corneum. The dermis was infiltrated by chronic inflammatory cells.

Discussion

The prevalence rate of 0.21% of exfoliative dermatitis in the present series of cases is comparable with 0.18% reported by Sehagal and Rege[3]. Abraham et al[4] reviewed the records of 101 cases and found the predominancy of males in this disease with mean age of about 50 years. Similar observations have also been reported by Adams[5] and Sehagal and Rege[3]. Mean and median duration of illness was reported to be 5 years and 10 months respectively by Abraham et al[4].

The injudicious use of topical medication for skin disorder is thought to be the most important precipitating factor. Rook and Rowell[6] listed various common drugs which cause the disease. Among these the important ones were antituberculous drugs and penicillin. The heavy metals have also been reported to cause exfoliation when treatment with them was in vogue[1].

The clinical manifestations observed by us is in conformity with those of other workers[4-6]. Patients with exfoliative dermatitis manifest abnormalities referable to their temperature control mechanism. About 40% of patients of Abraham et al[4] had temperature more than 38°C at some time during the course of their illness. These patients had chilly sensations and needed more clothing or higher ambient temperature for their comfort. This is related to increased cutaneous blood flow, higher skin temperature and consequently increased radiation and convection losses. Lymphadenopathy was rarely encountered in the series of Sehagal and Rege[3]. Abraham et al[4] recorded hepatomegaly in 20% and splenomegaly in 3% of their cases and all of them had lymphoma. Otherwise there are poorly documented reports of splenomegaly in association with exfoliative dermatitis. Fox et al[7] found elevated cardiac output and hypervolaemia in few cases, whereas Voigt et al[8] observed such changes in 4 of their 6 patients. Shuster and Brown[9] have reported gynaecomastia in 4 cases who had raised levels of urinary oesterol and oestradial in addition to raised oestrone levels.

Hypoalbuminaemia in this disease is attributed to albumin loss in the exfoliated material as well as hypervolaemia[10]. Another contributory factor is likely to be associated protienuria. Impairment of glucose tolerance is probably due to stress and raised blood urea due to hypercatabolism.

The biopsy reveals non-specific changes on histological examination. Similar findings have been reported by other clinicians[3, 11].

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