

DERMATOLOGICAL MANIFESTATIONS IN PSORIATIC ARTHRITIS: A FOLLOW-UP STUDY

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Abstract. Of 227 patients with psoriasis and rheumatic complaints, inflammatory arthritis was present in 168 patients, of whom 95 have been followed up for more than 5 years and 28 had been followed up for more than 10 years. In patients with psoriasis and inflammatory arthritis the majority were women, but in the Distal joint group, males predominated. The skin disease usually began on the arms and was restricted in extent, initially. It usually began before the arthritis. A few cases were apparently precipitated by trauma, but more by psychological factors. The course pursued by the skin lesions was generally favourable. The skin lesions were resistant to treatment in 20% of the patients. Puberty, pregnancy and the menopause had little effect on the skin lesions. Nail lesions were present in 80%, a greater frequency than that seen in uncomplicated psoriasis. These nail lesions began at a later age than the skin lesions, and commonly preceded the development of arthritis. There was a family history of psoriasis in 26% of first-degree relatives. A history of polyarthritis was obtained quite frequently, and of psoriatic arthritis in 3% of patients with Distal arthritis, and 2% of the Indistinguishable group. The arthritis was usually mild in degree. Ankylosing spondylitis occurred in 5% and sacro-iliitis in 19%. The sheep cell agglutination test for rheumatoid factor was negative in the majority of patients. It was positive in 16% and a fluctuating positive result was obtained in 10%.

There is convincing epidemiological, genetic, clinical, radiographic and serological evidence to suggest that psoriatic arthritis is a specific entity and that the presence of psoriasis and inflammatory joint disease in individual patients represents the coincidental occurrence of two common diseases only in a minority of cases (Table I). Psoriatic arthritis may be defined as an inflammatory arthritis associated with psoriasis, and usually having a negative serological test for rheumatoid factor. There is a paucity of information about the progress of such patients and this paper is concerned with observations over a period of more than 10 years of patients with psoriasis and rheumatic diseases. It is concerned principally with the dermatological manifestations, the arthritic aspects having been reported in greater detail elsewhere (14).

MATERIALS AND METHODS

There were 227 patients, most of whom were seen at a special out-patient clinic to study the progress of the disease. Each patient was examined clinically and the findings recorded under three main headings: progress of the skin disease, progress of the joint disease, and radiography. At annual intervals the hands and feet were X-rayed and the sheep cell agglutination test (SCAT) was performed. Inflammatory joint disease was present in 168 patients, osteoarthritis in 21 patients (7 men and 14 women), gout in 5 men, and other non-inflammatory rheumatic complaints in 33 patients.

Of the 168 patients with inflammatory arthropathy, 28 have been followed for more than 10 years, 67 for 5-10 years, 32 for 2-4 years, and 12 for a period of a year. Of the others, 25 have been seen on one occasion only as they have been referred from a distance, have moved out of the area, or have died.

General features

The patients with inflammatory joint disease were divided into three main groups according to criteria previously defined (21). The most common group comprised patients with an arthritis indistinguishable from rheumatoid disease, of whom there were 132. A predominantly distal joint arthritis occurred in 28, and a severely deforming type of arthritis in eight. The groups will be called "indistinguishable", "distal" and "deforming".

The sex ratio in the Indistinguishable group was 46 men: 86 women; it was equal in the Deforming group with 4 of each, and there was a slight male preponderance in the Distal group with 17 men and 11 women. The age distribution of the patients at their last examination is shown in Fig. 1.

Table I. *Reasons for classifying psoriatic arthritis as an entity distinct from rheumatoid arthritis*

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| 1. SCAT is negative in 79% |
| 2. Patients with psoriasis and polyarthritis who have positive SCAT appear usually to be coincidental psoriasis and rheumatoid arthritis |
| 2.1 clinically |
| 2.2 radiographically |
| 2.3 subcutaneous nodules present in 17% |
| 3. "Uncomplicated rheumatoid arthritis" with negative SCAT may develop psoriasis |
| 4. Family studies |

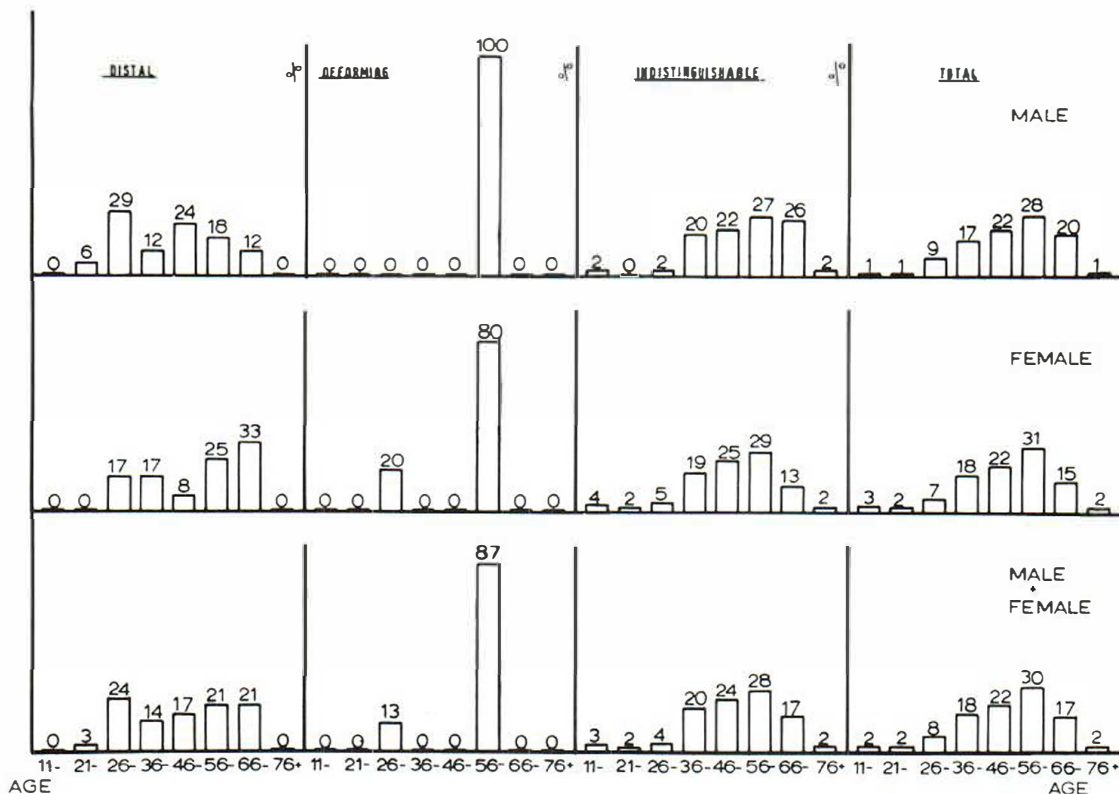


Fig. 1. Age distribution of patients with psoriasis and inflammatory arthritis.

Psoriasis

Onset. The peak age at onset fell in the 16–20 year old group, with a secondary peak around 45–55. There was no difference in the age at onset between the three groups, women tending to develop psoriasis earlier in all three groups.

The skin lesions commonly began on the arms (usually the elbows), followed by the legs and then by the scalp and back. The only difference between the groups was that the scalp was most commonly first affected in the Distal group (34%). The nails were rarely involved initially—in fact in only 2 women of the Indistinguishable group.

When the psoriasis began it was usually restricted in extent in both sexes. Regarding the Distal joint type of arthritis, only in women was it moderately severe at the onset. Extensive psoriasis at this stage was rare, being present in only 5% of the women with Indistinguishable arthritis.

Skin lesions usually preceded the arthritis. However, in 16% the arthritis preceded the skin lesions.

An endeavour was made to assess any factors which might have precipitated the psoriasis, particularly trauma and psychological factors. No such factor could be determined in 75% of the men or 55% of the women. Trauma was rarely a factor, occurring in only 6% of the men with distal joint arthritis, and 4% of the men and 2% of the women with Indistinguishable arthritis. Psychological fac-

tors were more common, being present in 6% of the men and 25% of the women with Distal joint arthritis, in 13% of the men and 12% of the women with Indistinguishable arthritis, but in none of those with Deforming arthritis.

As far as the pattern of skin lesions was concerned, psoriasis vulgaris appeared initially in three-quarters of the patients. The only other matter for comment was that pustular psoriasis occurred in 25% of the Deforming group compared with only 3% of the Distal group and 6% of the Indistinguishable group. However, it should be noted that this 25% represents only two patients.

As far as the state of the joints at the onset of the skin disease was concerned, in the majority of patients arthritis was not yet evident. This was true in about three-quarters. However, in 5 of the 8 patients with Deforming arthritis the arthritis ante-dated the skin lesions and did not change when the psoriasis began. In only 2 men with Distal arthritis and 3 patients with Indistinguishable arthritis did the arthritis worsen at the onset of the skin disease. Where arthritis was present it usually remained unchanged in extent and severity.

Course. A third of the patients had experienced complete remissions of their skin disease and a third, incomplete remissions. There were no significant differences between the three groups. Over the period of review there was little tendency for the skin to get worse, although it had cleared completely in only 8%.

Table II. Site of skin lesions at review (%)

Group	Arms	Legs	Scalp	Abdomen	Back
Distal	62	69	62	59	52
Deforming	75	87	75	75	37
Indistinguishable	81	86	67	58	49

Table III. Pattern of skin involvement on examination

	Vulgaris (%)	Guttate (%)	Seborrhoeic (%)	Pustular (%)	Erythrodermic (%)
Distal	56	4	33	—	7
Deforming	33	11	33	22	—
Indistinguishable	63	11	18	4	4

At the time of the latest review, skin lesions were commonly present on the arms, legs and scalp. They were less frequent, but still fairly common, on the abdomen and back. There were no differences between the groups, nor between the sexes, except that the distal group tended to have less extensive skin disease (Table II).

The pattern of psoriasis at the time of latest review is shown in Table III. As at the onset of the disease, psoriasis vulgaris was the commonest. It was noted that seborrhoeic psoriasis was commoner among women (58%) than men (13%) in the Distal joint group. In 18% of the men and in 21% of the women the pattern of their psoriasis changed.

Psoriasis is said not to itch and specific enquiry was made regarding pruritus. It was absent only in 26%. Pruritus was mild in 27% and moderate or severe in the remainder. There was no difference between the groups; neither was there any difference between the sexes, apart from the fact that more men were without itching than women in those in the Distal group (29% compared with 8%).

There was little difference in the number of times the patient had to be admitted to hospital for treatment of the psoriasis. Frequent admissions of over ten times occurred in one man with Distal arthritis, one man with Deforming arthritis and one man and two women with Indistinguishable arthritis. About one in five cases were resistant to treatment, but there was no difference between the groups.

Puberty. The effect of puberty was noted. Psoriasis began at this time in 8%. It was already present in 10%, and in most cases neither worsened nor improved. In only one girl with Indistinguishable arthritis did it become worse at puberty and in one boy with Distal joint arthritis it improved.

Menopause. Psoriasis began in 7% at the time of the menopause. In the Deforming joint group the psoriasis did not change at that time in three of the four women, and in the Indistinguishable group it remained static in 30% of the women, worsened in 12% and improved in 8%. It did not appear, therefore, that the menopause has a profound effect on the course of the psoriasis in any of the groups.

In 22% skin lesions had not begun to appear at the time of the menopause.

Pregnancy. The effect of pregnancy was recorded in 70 patients. It was noted that 3% of the women had psoriasis beginning during pregnancy and in 5% it started shortly after. Fourteen per cent found that the psoriasis improved during pregnancy, while in 9% skin lesions were unchanged. Following pregnancy, 5% found the psoriasis improved, 10% found it deteriorated.

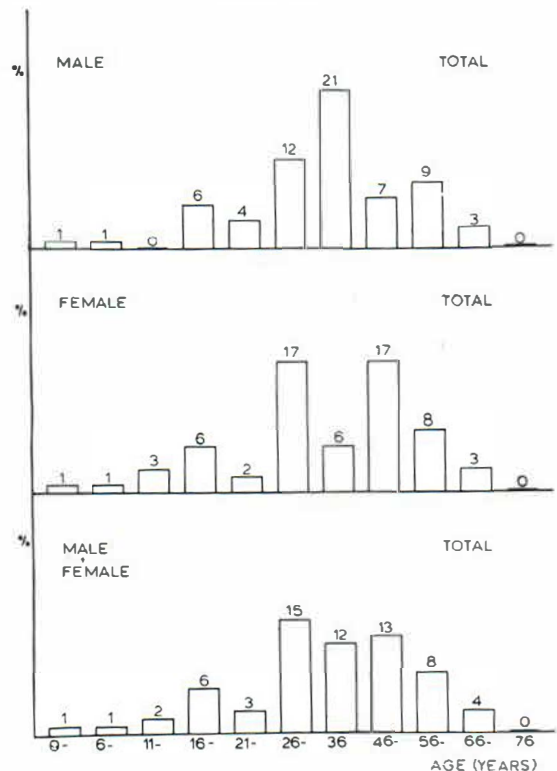


Fig. 2. Age of onset of skin lesions by sex in groups of patients with psoriatic arthritis.

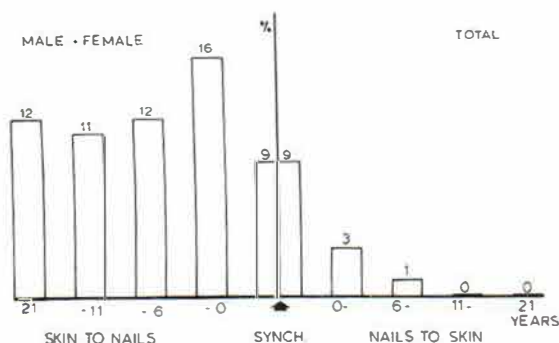


Fig. 3. Relationship of the onset of nail changes to the onset of arthritis.

Nail changes

Nail changes occurred in 88% of the patients with Deforming arthritis, 67% of the patients with Indistinguishable arthritis and in all the patients with Distal arthritis. Occasionally these developed when the skin lesions first appeared—in 18% of the patients of the Distal group and 8% of those in the Indistinguishable group. More frequently they occurred at the onset of the arthritis (36% of the Distal group, 25% of the Deforming group and 9% of the Indistinguishable group). The patients were not always able to say whether the toes or the fingers were first affected, but there seemed little difference in the initial pattern of involvement of these digits.

The nail changes usually occurred after the skin lesions and, therefore, the age of their onset was later than that of the skin lesions (Fig. 2).

The relationship of the onset of skin vs. nail changes is shown in Fig. 3, and that of nail changes vs. arthritis is shown in Fig. 4. There were no differences between the groups. Over the period of review the nails showed little change.

Family history

From the history as given by the patient, psoriasis was present in first-degree relatives of 26% of probands, and in second-degree relatives of 13% of probands. A history of polyarthritis of rheumatoid type was reported in 3% of patients with Distal joint arthritis, 25% of those with Deforming arthritis and 14% with Indistinguishable arthritis. A history of psoriatic arthritis was recorded in 3% of the group with Distal arthritis, none of the Deforming group and 2% of the Indistinguishable group.

Arthritis

Apart from the Deforming group, the arthritis was not notably progressive. In half of the patients no admissions had been necessary for the treatment of the joint disease. No time off work was lost by 38% of the patients with Distal arthritis, by 12% of those with Deforming arthritis and by 34% of patients with Indistinguishable arthritis. Over a year off work had been lost by only 3% of both the Distal and the Indistinguishable groups. Clinical and radiographic deterioration occurred in about 15%. Some 5% developed features of ankylosing spondylitis and radiographic sacro-iliitis was present in 19%.

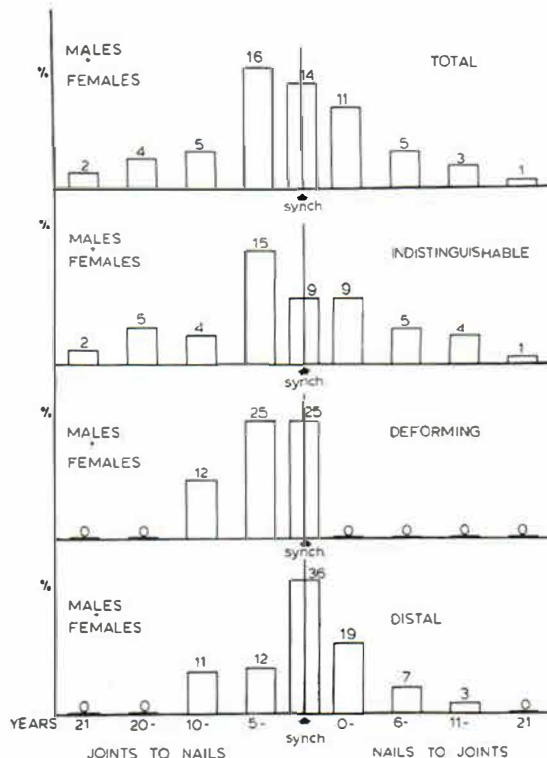


Fig. 4. Relationship of the onset of nail changes to skin changes.

DISCUSSION

Of 168 patients with psoriasis and inflammatory joint disease there was a predominance of females. This is in keeping with previous series, in which the overall male:female ratio was 1:1.04 (Table IV). This ratio is virtually the same as that seen in uncomplicated psoriasis (Table V). It contrasts with the larger female preponderance of 3:1 found in rheumatoid arthritis (7). It is of interest that males predominated in the distal joint group.

There is little evidence to suggest that a distinctive pattern of skin lesions occurs in psoriatic arthritis compared with uncomplicated psoriasis. The skin lesions usually began before the arthritis, and when they began later the arthritis did not change at their onset. However, the fact that the arthritis may antedate the skin lesions does emphasize the need for careful follow-up of patients with seronegative "rheumatoid arthritis" and the taking of a careful family history to find any clues to the real diagnosis. The excellent studies of Baker et al. (1, 2, 3) also emphasize this. Certainly some of these patients go on to develop psoriasis (6). Trauma rarely appeared

Table IV. Sex ratio in psoriatic arthritis (various authors)

Author	No. of subjects	Male	Female
Bourdillon (1888, cited by Weissenbach, 1938)	36	27	9
Nobl (1928, cited by Weissenbach, 1938)	69	16	53
Langlois (1934, cited by Weissenbach, 1938)	14	9	5
Weissenbach (1938)	50	20	30
Coste & Forestier (1935)	29	15	14
Vilanova & Pinol (1951)	150	82	68
Sherman (1952)	15	9	6
Wright (1959)	118	41	77
Reed & Becker (1960)	30	19	11
Baker et al. (1963 <i>a, b</i>)	53	8	45
Total	564	246	318
Ratio	1:1.04		

to be a factor in precipitating the disease, although psychological factors were more common. It is doubtful whether much weight can be put on this, since data bearing on these factors were retrospective and uncontrolled.

As far as the course of the skin lesions is concerned, this was favourable and compared satisfactorily in terms of remission rates with those quoted by Ingram (8) and Romanus (15). These authors noted periods of freedom from recurrence in 10–25% of patients. One in five patients, nevertheless, had psoriasis that was resistant to treatment. Looking at the disease from the point of view of remissions, resistance to treatment, the number of times hospitalized and the extent of the involvement, there is little ground for the definition of the disease which holds that the arthritis must follow long-standing, uncontrolled psoriasis. However, Molin (10) in his extensive study, found arthritis to be more common in subjects with more severe forms of psoriasis. Puberty, the menopause, and pregnancy have little effect on the skin lesions or on the arthritis, although individual patients occasionally developed exacerbations at that time.

Table V. Sex ratio in uncomplicated psoriasis (various authors)

Author	No. of subjects	Male	Female
Church (1958)	918	403	515
Lane & Crawford (1937)	231	108	123
Ingram (1954)	1 346	551	795
Total	2 495	1 062	1 433
Ratio (male : female)	1:1.4		

Nail lesions occur more commonly than in patients with uncomplicated psoriasis (2, 20). They were often more closely related to the joint status than were the skin lesions. The family history was in keeping with the more extensive studies by Moll & Wright (11) and Theiss et al. (17). Arthritis was found to be aggregated in first-degree relatives of psoriatic arthritis probands almost 50 times more often than has been reported in the general population.

Apart from a small group with a severely deforming type of arthritis, the joint disease remains relatively mild. Certain patients develop sacro-iliitis and clinical ankylosing spondylitis, a fact which has been observed by others (10, 12).

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