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PSORIATIC ARTHRITIS WITH REVIEW OF LITERATURE

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Summary

Six cases of psoriatic arthritis are presented with clinical, laboratory and radiological features and review of literature. Four out of six cases are "DISTAL ARTHRITIS" and two cases are "ARTHRITIS MUTILANS" of long duration. All our cases are males and hence no case of rheumatoid variety which is common in females is being reported. The aim of this paper is to represent all the parameters for this study of psoriatic arthritis namely clinical, laboratory and radiological features which are not well documented in Indian literature.

Case No. 1

A Muslim male aged 60 years presented with complaints of deformed fingers and toes of 10 years' duration and whitish scaly patches on the skin of 3 years' duration.

The complaint started as painful swelling of joints of hands and feet associated with fever. Patient was bedridden for six months during which time he developed flexion deformities of fingers and toes. Seven years later, he noticed scattered whitish scaly patches over scalp, legs, forearms, hands, feet and trunk. The skin lesions had never completely regressed. There was no family history of skin or joint problem.

Examination revealed scaly white plaques of variable sizes on the extensor and lateral aspects of extremities and scalp. Papules of 0.5 cm. covered with scales were present on the dorsa of hands. Varying degrees of flexion deformities of interphalangeal joints of fingers and toes were noted. (Fig. 1)

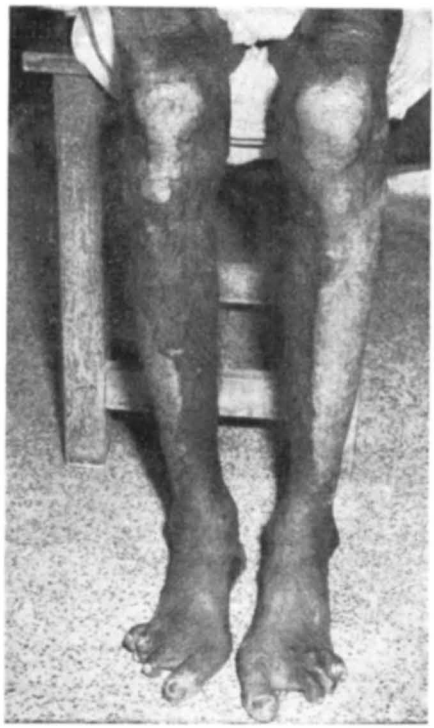

Fig. 1 Showing deformed toes with typical skin lesions in case No. 1

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Nails showed subungual hyperkeratosis, distortion, partial loss and stippling. (Fig. 2) Routine laboratory investigations did not reveal any abnormalities except for erythrocyte sedimentation rate (ESR) which was elevated to 110 mm/1st. hr. serum uric acid was 4 mg%. Serum rheumatoid factor (R.A. Factor) was negative. Serum total proteins were 5.9 gms% and serum electrophoretic pattern showed alpha 2 globulin elevation. X-Ray of both hands PA view showed flexion deformities of interphalangeal joints with typical 'PENCIL AND GLOBLET' sign of metacarpophalangeal joints of fingers. (Fig. 3) X-Ray of feet showed advanced radiological changes of psoriatic arthritis involving interphalangeal and metacarpophalangeal joints with evidence of mushrooming, osteolysis, destruction, disorganisation, deformities and partial ankylosis of joints. (Fig. 4) All the bones were osteoporotic. X-Rays of lumbo-sacral spine and sacro-iliac joints revealed no arthritic changes.

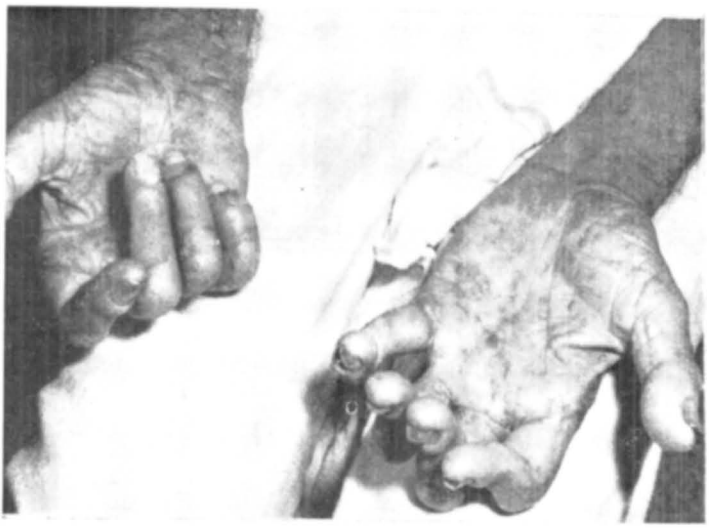

Fig. 2 Showing deformed hands with nail changes in case No. 1

Case No. 2

Hindu male aged 60 years presented with complaints of whitish scaly patches of 30 years' duration followed 10 years later with joint pains. He gave history of remissions and relapses, the former lasting about 1-2 years. After about 10 years, patient noticed swelling of wrist, ankle and knee joints with periodical attacks of hydroarthrosis and attacks of erythrodermia. Exacerbation of skin lesions was associated with increased severity of joint symptoms.

Examination revealed variable number of whitish plaques on the extensor aspects of extremities, back, front of the trunk and scalp Swelling of wrist and ankle joints was present. The

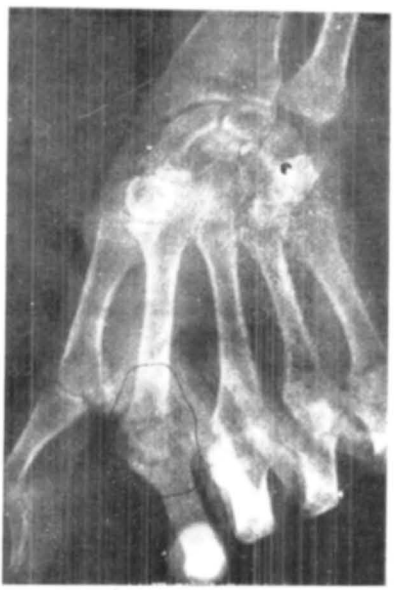

Fig. 3 Showing X-ray of Rt. hand with typical 'pencil and globlet' sign of M.P. Joints in case No. 1

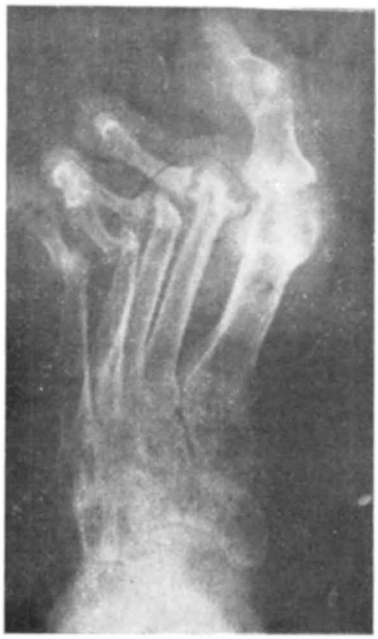

Fig. 4 Showing X-ray Rt. foot with advanced psoriatic arthritic changes like mushrooming, osteolysis, destruction, disorganisation, deformities and ankylosis of I.P. and M.P. joints in case No. 1

interphalangeal joints of hands and feet were deformed and distorted.

Routine laboratory investigations were normal except for the ESR which was 120 mm/1st. hr. Serum uric acid was 5 mg%, and the R.A. factor negative. X-rays of hands showed typical psoriatic arthritic changes of interphalangeal joints and metacarpophalangeal joints of right hand with deformities. There was soft tissue swelling around the joints and ankylosis of proximal I.P. joints of index and ring fingers. (Fig. 5) X-ray of feet was suggestive of mutilating arthropathy of small joints involving predominantly IPP and MP joints of great toes. There was disorganisation, deformity and destruction of joints with osteolysis of phalanges of right foot. Bony ankylosis of left great toe was present. (Fig. 6)

Case No. 3

A Hindu male aged 55 years complained of scaly patches on the scalp and body for 10 years and joint pains for 2 years. Initially the lesions appeared on the scalp and later extended to rest of the body. Erythrodermia used to occur about once an year. There was no complete regression of skin lesions at any time. Family history was negative.

Examination revealed thick scaly plaques on the back of the scalp, retroauricular area, trunk and extremities. Generalised erythrodermia was present. Though only minimal swelling of I.P.

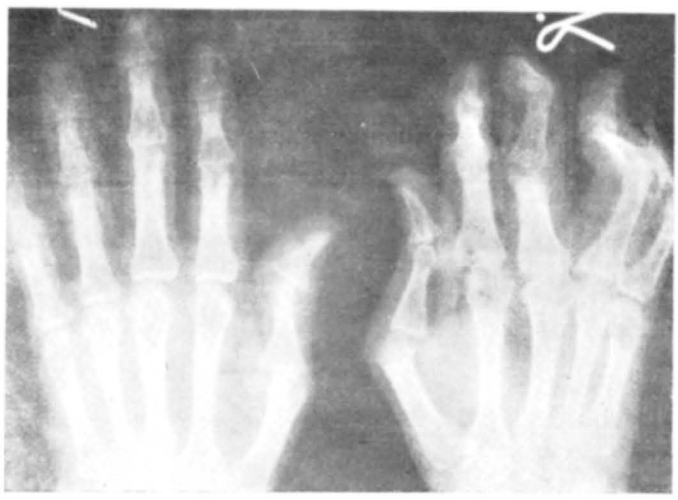

Fig. 5

Showing X-ray of hands with psoriatic arthritic changes of I.P. joints of Rt. hand, deformities, soft tissue swellings around joints and ankylosis of middle I.P. joints of Rt. ring finger in case No. 2

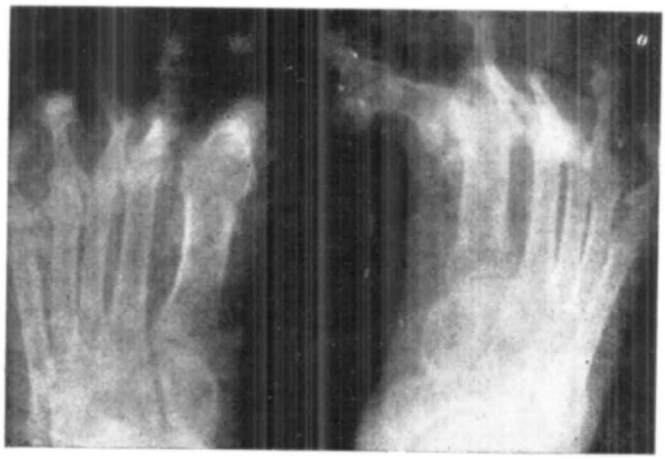

Fig 6 Showing X-ray of feet with mutilating arthropathy of small joints involving predominantly I P. and M.P. joints of great toes, disorganisation, deformity and destruction of joints, osteolysis (Rt. side) bony ankylosis of great toes in case No. 2

joints of hands and feet was present, there was severe tenderness. Fingers and toe nails showed distortion, pigmentation, subungual hyperkeratosis and partial loss.

Routine laboratory investigations were within normal limits except for ESR which was 120 mm/1st hr. Serum uric acid was 4 mg%. Serum R. A. factor was negative. Serum total proteins were 5.2 gms%. Serum electrophoretic pattern showed elevation of alpha 2 globulin. X-ray of feet showed narrowing of joint space of I.P. joints of great toes with soft tissue swellings. There was also evidence of para-articular erosion in the left great toe. (Fig. 7).

Case No. 4

A Hindu male aged 50 years presented with white scaly patches all over the body of 12 years' duration and joint pains of hands and feet for 7 years. Skin lesions had progressively worsened for about 6 years. Family history was negative for skin and joint problem. Examination revealed large scaly white plaques on the extensor aspect of extremities, trunk and scalp. Swelling and tenderness of I.P. joints of thumbs and great toes was present. Nails showed pigmentation, distortion and subungual hyperkeratosis (Fig. 8). Routine laboratory investigations were non-contributory except for ESR of 100 mm/1st hr. Serum uric acid was 5 mg%. R.A. factor was negative. Serum total proteins were 5.29 gms%. Serum electrophoretic pattern showed alpha 1 globulin elevation.

X-ray of hands showed characteristic whittling of left thumb due to arthritic changes of distal I.P. joints

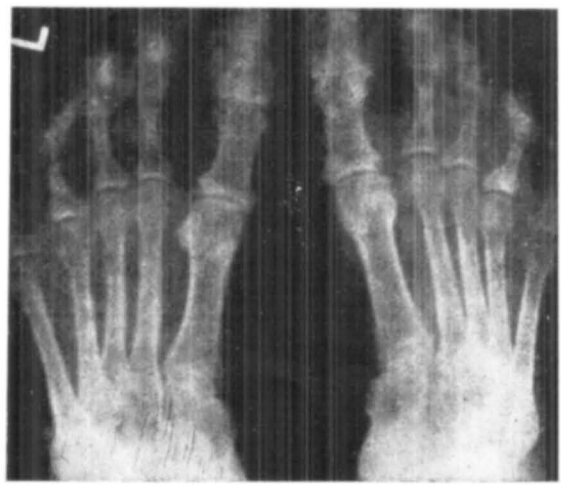

Fig. 7 X-ray of feet showing narrowing of joint space of I P. joints of great toes and also evidence of para articular erosion in the left great toe in case No. 3

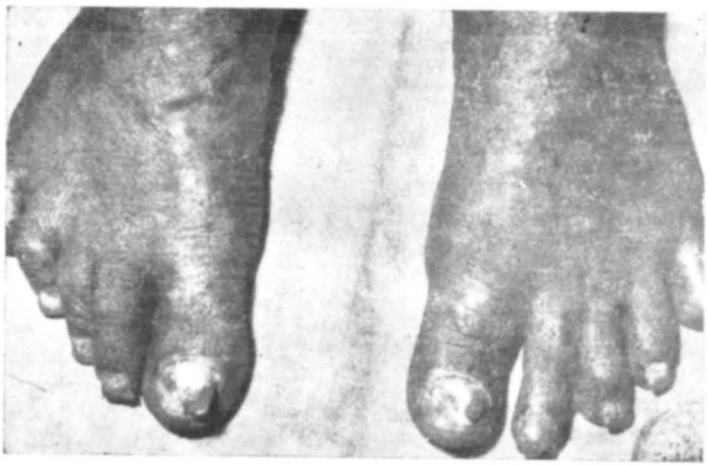

Fig. 8
Showing sausage digits with subungual hyperkeratosis and partial nail loss in case No. 4

with narrowing of joint space. Bones were osteoporotic (Fig. 9).

Case No. 5

A Hindu male aged 70 years, presented with scaly whitish patches of 15 years' and joint pains in hands and feet of 5 years' duration. Initially the skin lesions were present on the palms. Later lesions appeared on the trunk, scalp and extremities. There were attacks of erythrodermia. Joint pains were of moderate severity in nature.

Examination on first admission revealed scaly hyperkeratotic palms with redness and swelling of fingers (Fig.10). Tenderness of I.P. joint was present. Nails showed minimal pitting only. At subsequent admission 3 years later, patient revealed erythrodermia with scaly white lesions on the palms and soles and lesions on the scalp, trunk and extremities. Joint pains were severe with tenderness though there were no flexion deformities.

Routine laboratory investigations were non-contributory. Serum uric acid was 4 mg%. Serum R.A. factor was negative. Serum total proteins were 5.7 mgs%. Serum electrophoretic pattern showed alpha 2 elevation. X-ray feet showed narrowing of joint space of I.P. joints of great toe with whittling. (Fig. 11)

Case No. 6

A Hindu male aged 32 years, a mechanic by profession presented with complaints of one or two scaly patches on the extensor aspect of upper extremities

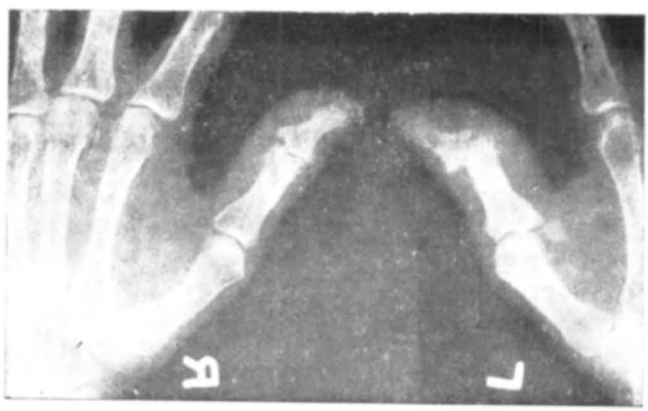

Fig. 9
Showing X-ray of left thumb with characteristic whittling and narrowing of joint space in case No. 4

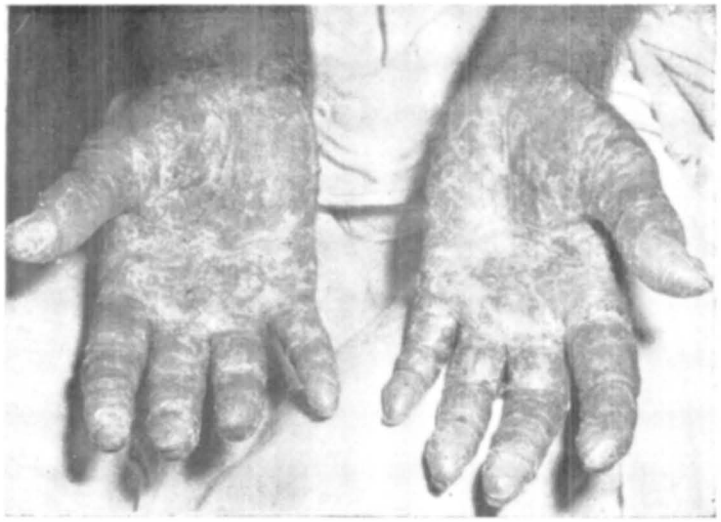

Fig. 10

Showing scaly hyperkeratotic palms with redness and swelling of fingures in case No. 5

and swelling of distal I.P. Joints of left thumb and middle finger of 2 years' duration.

On examination, scaly white lesions were seen on the extensor aspect of upper extremities. There was swelling of I.P. joints of left thumb and middle fingers with limitation of movements but no definite tenderness. Nail changes were absent. Routine laboratory investigations were within normal limits. R.A. factor was negative.

X-rays of left hand showed para articular erosions of distal I.P. joints of middle finger and I.P. joint of thumb with soft tissue swellings.

Literature review

The association of psoriasis and arthropathies was reported for the first time in 1888 by Besnier and Bourdillon[1]. Baker, Golding and Thompson[2] and latter Wright[3] have highlighted various aspects of this association and established psoriatic arthritis as a distinct entity. Baker et al proposed that the term "psoriatic arthritis" should be used for all cases of psoriasis and inflammatory asymmetrical polyarthrosis occurring together in the absence of subcutaneous nodules and serum rheumatoid factor". The internationally accepted criteria for the diagnosis of psoriatic arthritis[4], the discovery of serum rheumatoid factor[5] and Wright's classical studies[3,6,7,8,9,10] greatly advanced our understanding of this puzzling association. It was suggested that the following criteria are to be met with

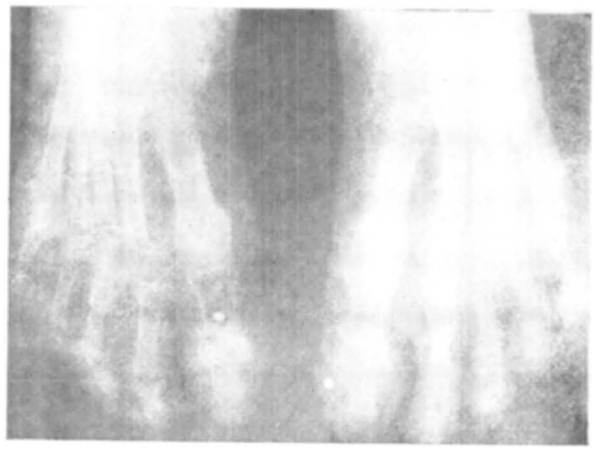

Fig. 11 Showing X-ray of feet with narrowing of joint spaces of I.P. joints of great toes with whittling in cases No. 5

for making a diagnosis of psoriatic arthritis[2] : (A) All other causes of polyarthritis should be excluded. (B) R.A. factor should be consistently absent from the serum. (C) There should be clinical and radiological features suggestive of psoriatic arthritis, namely asymmetrical involvement of I.P. joints, severe osteolysis with arthritis mutilans, resorption of tufts of terminal phalanges, 'mushrooming' and associated frequent bony ankylosis. (D) One or more close relatives should have psoriasis.

Epidemiological and clinical data do not indicate any single common cause for psoriasis and arthritis for (1) the skin manifestations precede the arthritis often by many years (2) the skin and joint changes frequently do not wax and wane together (3) the arthritis may precede the psoriasis by many years (4) trivial psoriasis can sometimes be accompanied by crippling arthritis (5) the great majority of psoriatics never develop arthritis[11]. It is equally evident, probable but not proven, that genetic factors are involved in the etiology of psoriatic arthritis[11]. Recently it has been observed that HLA B-27 antigen is associated with seronegative psoriatic arthropathy as well as in conditions like ankylosising spondylitis, Reiter's syndrome, juvenile rheumatoid arthritis and colic arthropathy[12]. Pathogenesis of psoriasis and arthritis is still unknown. Henocq among certain authors, considers that bacterial hypersensitivity namely, that due to streptococcal or Koch's bacillus plays a role in this condition[1]. Though there is variance in the age, sex, racial and familial incidence of psoriatic arthritis in reports by different authors[13], the following points are to be noted. (1) The disease is not limited to any particular racial group and seems to occur in persons of widely varying economic and occupational backgrounds[13]. (2) The peak occurrence is between 30-50 years of age[11]. (3) Sex ratio varies depending on the arbitrary criteria in selection of patients namely in the classical 'distal' and mutilating patterns the ratio is approximately equal and in the rheumatoid like group females predominate in the ratio of 2 : 1 or 3 : 1[6,11]. Wright studied a large series of patients with psoriasis and inflammatory seronegative polyarthritis and showed that these patients fell into three clinical groups[14].

1. Those with predominantly 'distal' arthritis involving initially the terminal I. P. joints of the hands and the I. P. joints of the toes. The disease is often asymmetrical, slightly more common in males and almost always with grossly dystrophic nails. 2. Psoriatic 'arthritis mutilans' is a severe deforming arthritis equally prevalent in males and females involving multiple small joints in the hands, feet, spine and elsewhere. The associated psoriasis is often severe and extensive, and resistant to topical therapy. The arthritis is characterised by steady but often rapid progression with radiological para-articular erosions going on to gross osterlysis with or without subsequent bony ankylosis. Constitutional disturbances are common in the active stages and repeated remissions and relapses may occur. Loss of function may be serious, especially in the hands, which may be ankylosed in extension without ulnar deviation. After years of increasing disability, the patient becomes bed-ridden and can die of the disease, its complications or the side effects of treatment. 3. An indistinguishable or rheumatoid like type, very similar to the rheumatoid arthritis, but often milder and much more common in females. Asymmetry of joint involvement is commoner than in rheumatoid arthritis and spinal involvement more frequent.

Discussion

Six cases of psoriatic arthritis are presented with clinical laboratory and

radiological features. Two cases showed classical arthritis mutilans. The first case manifested arthritic changes which preceded the skin lesions by many years. The radiological changes were typical of psoriatic arthritis mutilans. Though involvement of the hip, cervical and sacroiliac joints similar to those of ankylosising spondylitis are common[15,16,17] none of our cases showed these. Four of six cases reported had distal arthritic type of involvement with varying clinical features. Association of psoriatic arthritis more often with unusual types of psoriasis has been reported by Baker and Ryon[18]. In three out of six cases (cases 3, 4 & 5) the psoriasis was erythrodermic in type. Moll and Wright[19] reported that nail changes occur in more than 60% of patients with psoriatic arthritis. This proved true in our series where five out of six cases (cases 1,2,3,4,5) had varying degrees of nail changes.

The object of laboratory tests should be to exclude other causes of polyarthropathy rather than to clinch the diagnosis of psoriatic arthritis which is classically a seronegative one. The tests for serum uric acid, R.A. factor, L.E. cell phenomenon, A. N. F. (anti nuclear factor) and urine analysis are the main investigative procedures necessary for this. These tests would show normal result. E.S.R. is usually raised. Reed and Baker reported elevation of alpha 1, β and γ globulins but decreased serum albumin in psoriatic arthritis. In our series, 4 patients had elevated E. S. R., serum proteins varied from 5.2 gms% to 5.9 gms%, serum electrophoresis showed non-specific changes in 4 cases. There was elevation of alpha 1 globulin in one case and alpha 2 globulin in 3 cases (1, 3 & 5). Increase in E.S.R., C-reactive protein reactions and results of electrophoresis depend on the severity of illness[20]. R.A. factor in the serum is considered to be a consistently negative feature in psoriatic arthritis. All our patients showed absent R.A. factor. The degree of radiological changes in our cases varied from minimal to severe. In two cases (4 & 6) early changes of para-articular erosions were seen. In two other cases (3 & 5) there were narrowing of joint spaces, minimal fluffiness and osteolysis with or without bony ankylosis. Two others showed changes of arthritis mutilans. In a patient presenting with arthritis it is necessary to recognise any association of even a trivial or localised psoriasis. Since the introduction of chloroquine and related compounds in the treatment of rheumatoid arthritis, this recognition becomes all the more important as these compounds have been shown to commonly aggravate psoriasis. It has even been suggested that if one cannot differentiate rheumatoid arthritis from psoriatic arthritis by clinical, laboratory or radiological features a therapeutic test with chloroquine may be helpful. The course of psoriatic arthritis may be slowly progressive, sometimes explosive and always unpredictable.

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