scleritis; did you find anything which would suggest any virus disease in any of your patients?

DR. PITKEATHLY As regards the allergy: there were a number of patients with episcleritis who had attacks in the spring or in the summer. As regards the rosacea: we excluded that at the beginning because we were aware that it could produce episcleritis. We did not find any suggestion of virus infection, although it was only looked for if there was some suggestion of this to begin with.

DR. WATSON The point about herpes zoster ophthalmicus is that it can cause both episcleritis and scleritis. It can start an episcleritis which progresses to a scleritis. It is therefore difficult to put it into one group.

Some Aspects of the Radiology of the Shoulder Joint in Rheumatoid Arthritis with a Note on the Findings in Osteoarthritis. By M. M. MCNAIR, J. A. BOYLE, W. W. BUCHANAN, and J. K. DAVIDSON (*Glasgow*)

Antero-posterior radiographs of both shoulder joints were taken in fifty unselected patients with sero-positive rheumatoid arthritis (RA); 46 patients with osteoarthritis (OA) and fifty normal subjects provided control radiographs. The findings of two radiologists without previous knowledge of the diagnosis in any of the subjects, or of each other's opinions, were correlated with the clinical findings.

The radiological appearances of the shoulder joint in RA suggest that:

(i) Radiological abnormalities of the shoulder joint are very common in sero-positive erosive RA and in patients with OA even though these patients may have no complaints referable to the shoulder joint.

(ii) As generalized osteoporosis was found only in the rheumatoid patients, limitation of shoulder joint movement is the clinical feature which correlates best with severe radiographic changes in RA. Of the 47 shoulder joints with this clinical feature, 38 per cent. had radiographic evidence of joint erosions, 50 per cent. had generalized osteoporosis, and 21 per cent. had remodelling of the humeral head.

(iii) Generalized osteoporosis of the shoulder girdle is the radiographic sign which correlates best with the degree of clinical involvement of the shoulder joint in RA: of the 32 shoulder joints with this radiographic finding, 63 per cent. were painful and 75 per cent. had limited movement.

Discussion

DR. A. G. S. HILL (*Stoke Manderville*) I should like to ask Dr. McNair if she attempted any correlation of changes in the shoulder joints with the use of the shoulder as a weight-bearing joint; in other words, does the use of crutches increase the incidence of radiological abnormality in the shoulder?

DR. MCNAIR I am afraid we have not studied this.

Rheumatoid Serum Factors in Families. By J. S. LAWRENCE, J. BALL, and H. A. VALKENBURG (*Manchester*). This article and the discussion thereon is to be published in a future issue of the *Annals*.

Preliminary Results of Azathioprine Therapy in Severe Rheumatic Disease. By A. J. SWANNELL, E. N. COOMES, and J. Q. MATTHIAS (*London*)

Twelve patients on treatment with azathioprine (8 rheumatoid arthritis, 2 psoriatic arthritis, 1 systemic lupus erythematosus), none of whom could be controlled with conventional therapy, including the use of corticosteroids, have been followed.

Azathioprine was used in a dose of 2 mg./kg. body weight; the length of treatment varied from 2 weeks to 1 year.

Three of the patients with rheumatoid arthritis improved, and the skin rash and arthritis disappeared in one psoriatic patient who later developed two episodes of septicaemia, each responding to treatment. Reduction of steroid dose was possible in one patient with SLE.

Six patients had to stop treatment on account of side-effects.

Discussion

DR. B. M. ANSELL (*Taplow*) I should like to report our experience which is not so encouraging. At Taplow we have treated seven patients (age range 30 to 66 years) with rheumatoid arthritis, two because of vasculitis and neuropathy, two because of complicating amyloidosis, and three because of severe uncontrolled disease with side-effects from corticosteroid therapy. A dose of 2 to 2.5 mg. azathioprine per kg. body weight was given for from one week to 7 months. One patient with amyloidosis has shown reduction of the activity of the arthritis, a reduction in the size of nodules, and a fall in proteinuria; he is still receiving therapy. In one other patient there was improvement in the arthritis and reduction of corticosteroid therapy was achieved, but after 2 months' treatment with 100 mg. azathioprine daily she developed a severe anaemia with bone marrow hypoplasia. When the azathioprine was stopped there was an improvement in the haematological state, but an exacerbation of disease activity, and corticosteroid dosage had to be increased again. This patient had not received gold or butazolidin in the past. Therapy had to be stopped in two cases because of side-effects: severe gastrointestinal upset and severe skin infection. In the remaining three patients therapy was stopped after 3 to 6 months because there was little or no improvement with azathioprine.

DR. C. G. BARNES (*London*) We have had some experience with azathioprine at the London Hospital, using it in a dosage of 2.5 mg. /kg. body weight per day. We have treated thirteen patients for from 6 weeks to 27 months on an uncontrolled basis and reviewed their progress. Each of these patients was resistant to normal methods of treatment, including steroid dosage in an unacceptable amount of over 10 mg. prednisolone a day. Six discontinued treatment, four on account of gastrointestinal disturbances; I think that known gastroduodenal ulceration is probably a contraindication to the use of azathioprine. We endeavoured to reduce steroid