steroids help to correct the condition through a direct action upon the muscle itself rather than through suppression of the lymphocyte function.

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Rosette-forming Cells in the Peripheral Blood of Patients with Rheumatoid Arthritis. By H. KEITH and H. L. F. CURREY (The London Hospital Medical College)

This paper is published in full with the discussion on p. 202 of this issue.

Excision of the lower end of the ulna in rheumatoid arthritis. By N. A. RANA and A. R. TAYLOR (Oxford Regional Rheumatic Diseases Research Centre, Stoke Mandeville Hospital)

Removal of the lower end of the ulna was first carried out in 1880 and later recommended for traumatic disorganization of the inferior radioulnar joint. More recently it has been used in rheumatoid arthritis for the destroyed inferior radioulnar and wrist joints.

This paper presents the result of 86 operations followed up for 1 to 8 years, all for rheumatoid arthritis.

The indication for operation were pain, limited rotation of the forearm, and attrition rupture of the extensor tendons. The following results were observed: 94 per cent obtained relief of pain; 87.5 per cent regained full pronation-supination. The return of supination is particularly important for many daily activities, more especially when the elbows and shoulders have limited function.

There was improved power grip in 91 per cent.

Nine patients had concomitant repair of the extensor tendons.

The outcome of operation was also correlated with the radiographic changes in the wrist before operation and at follow-up. Although 94 per cent showed radiographic deterioration, the clinical result remained good.

It is concluded that simple excision of the lower end of the ulna will relieve pain and increase function of the hand in some 90 per cent of patients. It is suggested that this simple procedure can be carried out with success even in the presence of a destroyed wrist joint, and that the operation of arthrodesis of the wrist is rarely necessary.

Discussion

DR. B. ANSELL (*Taplow*) Firstly, have you had any ruptured tendons after operation? Secondly, were there any cases in which there has subsequently been complete dissolution of the carpus? We have had two patients who have been left with gross ulnar drift at the wrist.

MR. TAYLOR No; I think we are probably fortunate, but we have not had any occurrence of tendon rupture following repair, nor have we had any ruptures following excision of the lower end of the ulnar for pain. We have

had an increase of carpal shift, but none in which the carpal bones have completely dissolved.

PROF. J. J. R. DUTHIE (*Edinburgh*) I should like to confirm the excellent results of this operation in Edinburgh. There is one question I want to ask—How often do you notice fusion between the lower end of the radius and the scaphoid?

MR. TAYLOR I think this happens quite often. Part of the operation for fusion of the wrist is to remove the lower end of the ulna, and I think that in the majority it may be this that gives the beneficial results. The wrist is usually pretty stiff when you start.

DR. A. G. S. HILL (*Stoke Mandeville*) There is another sign which could be called the 'falling change' sign. If you are short of full supination and are given a handful of cash after a purchase, you cannot hold it unless you can supinate fully and this is something that this operation restores. The other point, as was shown by Dr. Hilary Hill to this Society last year, is that the number of these operations rises progressively with a reciprocal fall in the number of wrist fusions. The reason is that pain can be relieved even when there is destruction of the carpus, which in earlier years would have led us to think of fusion.

MR. TAYLOR We often forget completely about this absence of supination. Many patients come back afterwards and say they can now collect their change which is a relatively important thing to us all, even to Professor Duthie!

DR. K. LLOYD-JONES (*Mansfield*) Do you routinely transpose the extensor retinaculum deep to the extensor tendons?

MR. TAYLOR No.

DR. K. LLOYD-JONES Have you any experience with this operation in patients in whom the head of the radius has previously been removed or *vice versa*?

MR. TAYLOR Yes; we now have ten patients who have had excision of the lower end of the ulna and the upper end of the radius in the same limb. This has led to no mechanical troubles and we have performed the operations at the same sitting.

Depression of Bone Marrow and Thrombocytopenia associated with Chrysotherapy. By A. KAY (St. Mary Abbots Hospital)

Recent reports of deaths associated with chrysotherapy (*British Medical Journal*, 1971) cause some concern. The records of 55 patients who have shown definite evidence of marrow depression or thrombocytopenia, have been collected; 15 of these patients died. The patients were derived from two sources: 42 from Rheumatology Units in response to personal requests and 13 reported to the Committee on Safety of Medicine. The mean total dose of sodium aurothiomalate (Myocrisin) was 698 mg. (range 40-2,050 mg.). After test-dosing the usual loading dose of sodium aurothiomalate was 50 mg./week continued to a total of at least 500 mg. in 23 patients and to 1 g. or more in five others. There was a small group of ten patients who, without warning, developed blood dyscrasias at a total