HEBERDEN SOCIETY

Discussion.—Prof. I. M. Roitt (Middlesex Hospital) suggested that any lymphocyte might become a "killer" if exposed to a non-specific stimulus such as an antigen-antibody complex or aggregated gamma-globulin plus complement.

Dr. MacLennan agreed that this was a possible explanation. He produced experimental evidence which suggested that complement components were unlikely to play a significant part in his particular experiments.

Dr. M. K. Jasani (Horsham) asked if the increased cytotoxicity could be due to stimulation of lymphocytes by an antigen present in synovial fluid.

Dr. MacLennan thought that, in his series of experiments, this possibility could be excluded.

Measurement of Lumbar Spine Motion in Population Studies. By I. F. MacRae and V. Wright (Leeds): In both the Rome (1961) and New York (1967) recommendations for diagnostic criteria in population studies of ankylosing spondylitis, limitation of motion of the lumbar spine is one of the clinical criteria.

In the design state of a family survey to detect the prevalence of ankylosing spondylitis, it became apparent that no suitable method for assessing motion of the lumbar spine was in current use. For this purpose a suitable method should be objective, simple and rapid to perform, and fulfill requirements regarding reliability and sensitivity.

A method based upon measurement of the distraction of marks on the skin overlying the vertebral spines in flexion was devised and evaluated. It was shown that there was a high degree of correlation between the measurement and the flexion of the lumbar spine determined radiographically.

The method was applied in the survey described and the data on lumbar spine motion related to sex, age and radiographic findings were presented.

Discussion.—A number of speakers, whilst agreeing that this method of measuring of movement in the lumbar spine was simple and useful in population studies, considered that it would be of less value in assessing the progress of the individual established case of spondylitis.

Conjugal Prevalence of Rheumatoid Arthritis, Rheumatoid Factor, and Other Autoantibodies in Rheumatoid Arthritis. By T. G. Dalakos, R. N. M. MacSween, K. Whaley, W. C. Dick, J. A. Boyle, M. K. Jasani, E. Wilson, W. W. Buchanan, and R. B. Goudie (Glasgow): The importance of environmental factors in the pathogenesis of rheumatoid arthritis was assessed by studying the conjugal prevalence of rheumatoid arthritis and rheumatoid and antinuclear factors and a number of organ-specific autoantibodies including antithyroglobulin, antithyroid microsomes and gastric parietal cell autoantibodies in 447 spouses of patients with rheumatoid arthritis. Rheumatoid arthritis occurred no more frequently in the spouses than would be expected on the basis of the prevalence of the disease in Great Britain, but rheumatoid factor was found increased in both husbands and wives (P<0.02) compared with controls. Antinuclear factor (P<0.05) and antithyroglobulin autoantibodies (P<0.01) were found in controls. No relationship was found between the presence of these antibodies and the duration of marital contact or between their presence in the probands and their occurrence in the spouses.

Discussion.—Dr. J. S. Lawrence (Manchester) pointed out that the excessive incidence of rheumatoid factor in female spouses was at variance with the findings of other workers, and suggested that it might be explained on the basis of the particular test used.

Prof. J. H. Kellgren (Manchester) suggested that some of the results could be explained by the use of tests at a high level of sensitivity.

Dr. Dalakos replied that in their study they had compared two populations at the same standard.

Dr. A. S. Russell (Taplow) suggested that an alternative explanation for the apparently anomalous results in the study was that the statistical significances presented might have been overemphasized.

Arthroscopy—An Evaluation of its Use in Clinical Conditions. By M. I. Jayson and A. St. J. Dixon (Bath): This paper has been published in the Annals (1968), 27, 503.

Hypogammaglobulinaemia and Arthritis. By J. S. Lawrence, J. M. Bremer, and B. M. Ansell (Taplow): A group of patients with hypogammaglobulinaemia was examined clinically and by x rays of the hands, feet, neck, and pelvis. The high prevalence of arthritis reported by others was not confirmed, but young male patients had significantly more polyarthritis and synovitis of the knees than males of the same age distribution in the population. This did not appear to be due to the gammaglobulin with which they were being treated. It was found mainly in those in whom IgA and IgM levels were deficient in addition to IgG.

Discussion.—Dr. Lawrence, in reply to a question by Prof. E. G. L. Bywaters (Taplow) stated that the steatorrhoea observed was of the malabsorption type. Jejunal biopsies performed in some of the patients showed no striking changes.

Dr. V. Wright (Leeds) asked if Dr. Lawrence thought it was possible that the arthritis observed in these patients might be due to persistence of soluble antigen-antibody complexes in which gross excess of antigen was present.

Dr. Lawrence felt that if this were the case he would expect the patients with arthritis to show the syndrome of serum sickness.

Prof. K. W. Walton (Birmingham), drawing a possible analogy with Whipple's disease, asked if it were possible that the patients developing arthritis were failing to produce antibody in the wall of a gut and therefore lacked the defence mechanism to prevent access of organisms from this source.

BUCHANAN, and F. C. GILLESPIE (Glasgow): In an effort to obtain an objective index of articular inflammation, radioscans were performed on a variety of joints in 24 patients with rheumatoid arthritis of varying severity, 25 minutes after the intravenous administration of 1 m.Ci radiotechnetium \(^{99m}\text{Tc}\). Localization of the isotope in the joint was easily demonstrated using a Picker Magna-Scanner V. It was thus possible to quantitate the display of the isotope in a joint. The method was sufficiently reproducible for clinical use, and the uptake had been found to be a function of the clinical severity of joint inflammation.

Further studies had shown that the isotope was not actively concentrated by the diseased synovial membrane, and this finding suggested that the display of isotope in an inflamed joint might reflect enhanced vascularity of the synovial membrane and other joint tissues.

**Discussion.**—Dr. J. T. SCOTT (London) asked if the maximal uptake of radio technetium correlated with the temperature of the skin over the joint.

**Dr. Dick** said that he did not yet have the equipment to make such measurements.

**Dr. J. H. Glyn (London)** asked if it were safe to repeat the measurements more than once in the same patient.

**Dr. Dick** felt that if the individual dose could be reduced to the region of 100 microcuries, it should be possible to repeat the tests, say, three times a year.

**Prof. J. H. KELLGREN (Manchester)** asked if the method described provided any more information than ordinary clinical observation.

**Dr. Dick** considered that the amount of uptake of isotope was a measure of blood flow and provided an objective measurement and could be used as a rapid method of assessing the effect of drugs.

**Dr. Lavender** suggested that the uptake of isotope was not solely related to blood flow.

**Mr. A. Kates (London)** pointed out that the results presented differed from those obtained using radioactive gold injected intra-articularly.

**Dr. Dick** suggested that the difference might be due to the differing uptakes of the two isotopes by synovial cells.

**Chronic Polyarthritis in Nigerians.** By B. M. GREENWOOD (Taplow): To be published with the discussion thereon in a future issue of the *Annals*.

**Demonstration.** **Prof. E. G. L. Bywaters (Hammersmith and Taplow)** presented a demonstration on "The Early Lesions of Ankylosing Spondylitis". While almost all published autopsy cases were in the ossified stage, four out of 23 autopsies at Hammersmith and Taplow showed earlier lesions. These included inflammatory erosions of cartilage at the disc margin, Romanus lesions, and discitis proper, the lesions resembling those of polychondritis rather than those of rheumatoid arthritis.

**CORRECTION**

In the March, 1969, issue of the *Annals*, p. 197, col. 2, ll. 3 and 4, for millimetres read millilitres.