HEBERDEN SOCIETY

Heberden Round, 1968

This was conducted by Dr. C. F. Hawkins at the Queen Elizabeth Hospital, Birmingham, on March 22, 1968.

At a clinical meeting held on the same day the following papers were given.

Clofibrate in the Management of a Case of Lipoid Dermato-arthritis: a Clinical and Metabolic Study. By D. N. GOLDING (*Princess Alexandra Hospital, Harlow*): Lipoid dermato-arthritis (multicentric reticulo-histiocytosis) is a metabolic disorder characterized by histiocyte proliferation and lipid deposition in skin (xanthoma tuberosum), tendon sheaths, bones, and joints.

Abnormalities of plasma lipids consisting of rises in chylomicron triglyceride, cholesterol, phospholipid, and low-density lipo-protein, affecting principally the Sf 12-400 fraction, occur in some patients with this condition.

A 40-year-old man was considered to have lipoid dermato-arthritis on the following evidence: metacarpophalangeal joint pain and swelling; tenosynovitis of the long extensor sheaths about the thumbs; xanthoma tuberosum on the elbows and knees; normal erythrocyte sedimentation rate and serum uric acid; negative tests for rheumatoid factor; milky fasting plasma; high levels of serum lipoproteins. Biopsy of a skin xanthoma showed typical changes including lipid-laden histiocytes. There was clinical remission of musculoskeletal symptoms and signs after treatment with clofibrate (Atromid-S), and changes in serum lipids were recorded before, during, and after taking the drug.

After he had taken clofibrate 1.5 g./day for 2 months, the serum cholesterol fell from 505 to 235 mg./100 ml.; low-density lipoprotein triglyceride from 4,000 to 1,180 mg./100 ml. (normal max. 150); chylomicron triglyceride from 354 to 106 mg./100 ml. (normal max. 50); total triglyceride from 4,354 to 1,286 mg./100 ml. (normal max. 200). All lipids were at their lowest levels 4 months after starting therapy. While clofibrate was continued, there was a significant rise in lipid levels during the summer months and a fall towards autumn, which was thought to reflect the seasonal rise in lipids which normally occurs in most people.

Whereas there have been several reports of the effectiveness of clofibrate in hyperlipidaemia with various types of xanthomatosis, this is thought to be the first account of its clinical and metabolic effect in dermato-arthritis. It is pointed out that assessment of treatment in this condition is difficult as spontaneous remissions can occur. If, however, clofibrate by its effect on the lipids can consequently diminish the reticulo-endothelial lesion, early recognition of the disorder and active lowering of body lipids in this manner may be important because some cases progress to severe, mutilating polyarthritis, and previous attempts at treatment by other lipid-lowering agents, low fat diets, or corticosteroids have been ineffective.

Discussion.—PROF. E. G. L. BYWATERS (*Taplow*): What is the evidence for the diagnosis of reticulohistiocytosis? Hyperlipaemia should not be present in such cases. We have seen joint changes in hypercholesterolaemia but again there is no hyperlipaemia and the serum is clear, not cloudy. Could this not be a case of hyperlipaemia with coincident involvement of the rheumatoid type? "Rheumatoid arthritis" has been reported in familial hyperlipaemia. The speaker has not in fact shown us the synovial biopsy on which classically the diagnostic histology of these lesions depends—that is the histiocytes and giant cells seen in both skin and joint lesions.

DR. GOLDING: A tendon biopsy was done while the patient was on clofibrate and it was normal; tests for rheumatoid factor were negative, the erythrocyte sedimentation rate was consistently normal, and the clinical joint disease appeared to respond to clofibrate therapy. I agree that we have no final proof of the diagnosis, and thought that I tried to bring this out.

PROF. K. W. W. WALTON (*Birmingham*): I was interested by the suggestion of localization of lipid within the joints. The occurrence of xanthoma at sites subject to pressure or friction in cases of hyperlipidaemia is well known. This might occur because of localized alteration of vascular permeability from the slight trauma. We have recently obtained evidence in support of this. Cholesterol-fed rabbits with high levels of serum cholesterol and lipoproteins were injected subcutaneously (in the skin of the flank) with saline or histamine. After repeated injections, xanthoma could be induced at the injection sites—even with saline alone, but more effectively with histamine. In this case it was interesting that, in the case of the joint lesions, these were more severe on

the right-hand side in a right-handed man, suggesting some correlation with use. In general, therefore, it may be that minor trauma, causing increase in vascular permeability, is a localizing factor, not only in relation to skin lesions, but possibly in relation to joint lesions also.

DR. GOLDING: I do not think that the skin lesions were, in fact, more severe on the right than on the left side.

Free Immunoglobulin Light Chains in Connective Tissue Diseases. By R. BLUESTONE and A. COOPER (*Royal Postgraduate Medical School, London*): This article and the discussion thereon is to be published in the next issue of the *Annals* (November, 1968).

Extensor Expansion in the Rheumatoid Hand. By K. M. BACKHOUSE (*Charing Cross Hospital Medical School, London*): The digital extensor expansion is a complicated tendon of insertion not only of the long extensor muscle but also of the two interossei and the single lumbrical. Through this system metacarpophalangeal and interphalangeal extension are brought about together with metacarpophalangeal flexion and ulnar or radial deviation and rotation.

Under normal conditions ulnar deviation and rotation (*i.e.* digital opposition) occurs in a high proportion of metacarpophalangeal flexor activities in the hand, whereas pure flexion or flexion with radial deviation are much less used. This functional asymmetry is reflected in the morphology of the extensor expansion and also in the way in which synovial swelling in rheumatoid arthritis disrupts the system.

Discussion.—DR. J. BALL (*Manchester*): When you speak of herniation do you mean herniation or do you really mean expansion (or distension) of the extensor expansion?

DR. BACKHOUSE: The expansion tends to stretch and becomes thin and the synovium bulges through at the weakest point. I use the term herniation merely as a figure of speech, but I think it behaves very much in the way a hernia does, pushing the walls of the developed sac ahead of it.

Development of an Artificial Finger Joint for Rheumatoid Arthritis. By J. S. CALNAN, N. D. REIS, E. G. L. BYWATERS, and P. J. L. HOLT (*Royal Postgraduate Medical School, London*): The need for replacement of joints of the hand in rheumatoid arthritis, and the requirements of such a joint, were discussed. The stages in the development of a suitable joint, the methods of sectioning bone and fixation of the joint, and the tissue acceptability of the materials used were described.

Eighteen artificial joints replacing the natural metatarsophalangeal joints in a series of dogs were observed for periods of up to 6 months. All joints were assessed by function, serial radiography, naked eye dissection *post mortem*, and histological changes in bone.

The results of this experimental study indicate that a clinical assessment of similar joints in man would be justified.

Discussion.—PROF. BYWATERS: One is encouraged to think that in our patients with replaced joints there will be no recurrence of disease, since you cannot have arthritis in a jointless joint. This opens up a big field for speculation.

PROF. J. H. KELLGREN (*Manchester*): What sort of force is required to flex these integral hinge joints?

MR. CALNAN: It is extremely slight, although we have not measured it. None of our patients had any difficulty in flexing and straightening.

PROF. J. H. KELLGREN (*Manchester*): So they would be quite suitable for the finest type of movement?

MR. CALNAN: Yes.

DR. K. M. BACKHOUSE (*London*): How much lateral movement have you in the joint postoperatively? Are you utilizing the artificial joint itself to maintain lateral stability, or do you in fact rely on the short muscles for this control in much the same way as one has to in a Fowler type excision arthroplasty?

MR. CALNAN: There is some lateral movement in the joint itself because the integral hinge part can be laterally flexed, and so therefore they can rotate; and in fact we have one patient who can rotate very well. I imagine that we must be relying to some extent on muscle balance. Certainly, we try to restore this to a reasonable degree after excision of the metacarpophalangeal joint, by correct repositioning of the extensor tendon and by doing a Littler release of the intrinsic muscles if that is indicated.

Arthritis of the Hip Joint in Paget's Disease, and Treatment by Osteotomy. By J. R. PEARSON (*Birmingham*): A study has been made of 145 patients with Paget's disease of the pelvis involving the hip joint; the series was divided into three groups depending on the degree of hip joint involvement. In seven patients who had pain arising from the hip joint an intertrochanteric osteotomy was able to relieve the symptoms.

Discussion.—DR. O. SAVAGE (*London*): Does this operation improve night pain, which is often the most important symptom in Paget's disease of the hip?

MR. PEARSON: Yes, it does.

C^{14} Studies of Uric Acid Turnover. By J. T. SCOTT, R. ARNOT, H. I. GLASS, and V. P. HOLLOWAY (*Royal Postgraduate Medical School, London*): Labelled uric acid can be used to estimate the pool size and turnover rate of uric acid in man. These values are normally calculated from the curve obtained by plotting uric acid specific activity in the urine against time. In some subjects with gout these lines are not straight when plotted on semi-logarithmic paper, indicating a two-compartment system of the miscible uric acid pool.

Treatment with allopurinol has been shown not only to reduce pool size and turnover rate but also to alter the pattern of compartment systems. In the absence of severe renal failure, uric acid turnover is fairly closely reflected by the level of urinary uric acid and pool size by the serum level.