Heberden Round, 1972

This was conducted by Dr. H. L. F. Currey at the London Hospital. He showed a series of patients illustrating the rheumatological complications of chronic renal disease, haemodialysis, and renal transplantation.

Clinical meeting, March, 1972

At a meeting held at the London Hospital on March 3, 1972, the following papers were given:

Synovial Biopsy in Haemochromatosis Arthropathy; Histological Findings and Iron Deposition in Relation to Total Body Iron Overload. By R. J. WALKER, I. W. DYMCK, I. O. ANSELL, E. B. D. HAMILTON, and R. WILLIAMS (*King's College Hospital, London*).

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Discussion

PROF. E. G. L. BYWATERS (*Taplow*) The speaker tantalized us by not saying very much about pyrophosphates and their relation to iron and the arthropathy because the group has mentioned this before. I am sure the Society as a whole would like to know about the particular relationship here. Also, in the two patients untreated who showed no haemosiderin, what about unaggregated ferritin? Did you look for this in electronmicroscopic studies?

DR. WALKER We only looked for haemosiderin deposition so that I cannot add anything with respect to your second point. As for pyrophosphates, I tantalized you because I cannot add anything to what has been said before. As you know, the suggestion has been made that pyrophosphate might be deposited in cartilage and synovium because iron has interfered in some way with the function of pyrophosphatases. As far as I know, this has not been shown in joints, but there is some evidence that iron can interfere with the pyrophosphatases in human erythrocytes (McCarty, Pepe, Solomon, and Cobb, 1970).

DR. HAMILTON Electronmicroscopic studies have been carried out by Schumacher (1972) who has found that in haemochromatosis, the iron is deposited chiefly in the synthetic or Type B lining cell and to a lesser extent in the phagocytic Type A cell. The reverse is true in other conditions, including rheumatoid arthritis.

DR. M. A. CHAMBERLAIN (*Leeds*) May I support that; we have been injecting guinea-pigs with iron intravenously and found that between 10 minutes and 8 days later the iron is seen by electronmicroscopy to be present in A cells, the phagocytic synovial cells, but not in the B cells nor in any intermediate cells.

DR. H. L. F. CURREY (*London*) Did you examine the sections by polarized light microscopy, and did they contain crystalline pyrophosphate?

DR. WALKER Under polarized light, none of the synovial specimens but three of the five cartilage specimens examined at autopsy did contain calcium pyrophosphate.

DR. R. A. STOCKWELL (*Edinburgh*) Did you notice where the iron deposition occurred, and particularly if it was in the deeper aspects of the cartilage rather than near the surface?

DR. WALKER We were unable to find iron in the cartilage from our patients. Some workers, such as Sheldon (1935), have reported chondrosiderosis and perhaps our inability to demonstrate this feature may be related to the small number of patients in whom we examined the cartilage, and to the fact that the majority of them had been depleted of iron by multiple venesection therapy.

DR. B. VERNON-ROBERTS (*London*) In haemochromatosis does iron occur in both the ferric and ferrous forms? Perles's iron stain demonstrates only the ferric form of iron and has to be modified in order to demonstrate the ferrous form.

DR. WALKER We only stained with unmodified Perles's stain, and I cannot therefore comment further.

References

- Chamberlain, M. A., Petts, V., and Gollins, E. (1972) *Ann. rheum. Dis.*, **31**, 493 (Transport of intravenously injected ferritin across the guinea-pig synovium)
- McCarty, D. J., Pepe, P. F., Solomon, S. D., and Cobb, J. (1970) *Arthr. and Rheum.*, **13**, 336 (Inhibition of human erythrocyte pyrophosphatase activity by calcium, cupric and ferrous ions)
- Sheldon, J. H. (1935) 'Haemochromatosis'. Oxford University Press London
- Shumacher, H. R. (1972) *Ann. rheum. Dis.*, **31**, 465 (Ultrastructural characteristics of synovial membrane in idiopathic haemochromatosis)

Hand Measurements in Ankylosing Spondylitis. By J. HARRIS, D. M. CHAPUT DE SAINTONGE, and C. G. BARNES (*The London Hospital*).

Patients with ankylosing spondylitis are often thought of as tall, thin young men. The measurement of height in patients with spinal deformities is difficult, and while thinness can be quantitated, it may be present in any active disease. The aim of this study was to see whether height could be estimated indirectly and whether the bones of these patients were slimmer than normal.

Measurements were made of the bones in the hands of 63 male spondylitics and compared with 136 normal subjects matched for age and sex. Metacarpal and phalangeal dimensions were measured in the way described by Parish (1966). Phalangeal index was expressed as the length divided by the width at the mid-point.

The metacarpal index of the normal patients differed significantly ($P < 0.005$) from existing figures (Parish, 1966). In our series, the metacarpal length correlated strongly with height ($P < 0.001$). However, the metacarpal length of the spondylitics was not significantly different from that of the controls ($P > 0.9$), suggesting that providing the metacarpal length of spondylitics is not altered by their disease they are unlikely to be taller than the control population. The phalangeal index of the spondylitics was significantly greater than that of the controls ($P < 0.005$), but there was no difference in the metacarpal indices.

It was concluded that, while there was no evidence that spondylitics were taller than normal, their proximal phalanges were significantly slimmer. This slimmness did not extend to the metacarpals however. The normal