
I had high hopes on opening this review of learning the answers to three questions: What are the results of conservative treatment? What are the results of operative treatment? What are the indications for choosing one or the other method? As only sixteen patients were treated by open operation in the 1,211 patients treated, there is a lack of detailed pathology and no answer to the last two questions. In ruptures of the medial [tibial collateral] ligament, the opening of the knee joint on the medial side was from 1 to 37 millimetres, with an average of between 3 and 6 millimetres in 453 cases. Conservative treatment, with a form of Unna’s paste or with plaster-of-Paris, is considered to have shown satisfactory results, although there is limitation of extension in sixty-seven cases and of flexion in 158, and although only fifteen had no ligamentous laxity. The average time of treatment was eighty-three days. One cannot discover if operative treatment would shorten the time of treatment in a comparable group, or if the end results would be better. It is ironic that, in a book overburdened with figures which should be relegated to the decent obscurity of an appendix, the last figures given are those of two other workers, Ehalt and Öhl (1955), for operative repair in fifty cases of medial ligament rupture. Immediately after this, the final summary states that the correct line of treatment is always conservative. The short reference to Ehalt’s work shows that, for patients under forty, his views are exactly contrary. We must await a similarly detailed report of cases treated operatively before we have the facts we want at our disposal.—J. G. Bonnin.

REFERENCE


This book describes an investigation into the osteogenic properties of bone marrow. It begins with a review of previous work, and finds that the results are inconstant and contradictory. The author considers that this is due to faulty technique, and emphasises the dangers of infection and desiccation. Dr Danis has performed a series of experiments, mainly on rats, using a careful aseptic technique. Taking marrow from the femur, and making sure that it contained no bone particles and that it did not become dry, he injected it into the anterior chamber of the eye and studied it both in vivo, by injecting sodium sulpho-alizarinate, and histologically. In autologous transplants bone always formed: the bone began in the middle of the graft, spread peripherally and persisted at any rate for many months. Bone marrow treated with alcohol, heat or cold did not form bone; nor did cortical bone. In homologous experiments the results were inconstant. In heterologous experiments bone did not form.

The author concludes that formation of bone from marrow depends on living cells and is not due to induction of metaplasia in the host tissue. He believes that the reticular cells of the marrow are potentially osteogenic.

These results may revive the nearly moribund cellular theory of bone grafting and might affect our operation technique.—Robert Roaf.


Robison (1923) first suggested that the primary cause of calcification was splitting of phosphoric esters by alkaline phosphatase which resulted in local supersaturation of the tissues with respect to phosphate and calcium ions. So many difficulties arose over the interpretation of various types of experimental results (obtained both in vivo and in vitro) in terms of this simple mechanism that McLean (1955) was “happy to note that, for the first time in years, it has been possible to sit through
a conference on mineralised tissues without having to discuss the role of alkaline phosphatase in calcification. I have long subscribed to the view that this enzyme is not required to provide phosphate ions for the bone salt . . ."

The author of this review attempts to redress the balance by restating the arguments for Robison's original theory. He has been led to do so by histochemical investigations on the association of alkaline phosphatase with sites of calcification. Although this association is invariable, the author distinguishes between the liberation of phosphatase as an incidental consequence of cell degeneration which results in pathological calcification and its specific elaboration by osteoblasts in pre-osseous tissue. It is still uncertain whether the phosphatase-containing hypertrophic cells in calcifying cartilage should be regarded as degenerative or as specifically differentiated.

The monograph is clearly written and well produced, but it is a great pity that no illustrations are provided of the material on which the argument is based and that no critical discussion of the histochemical methods employed is included. There can be few fields in biological science so full of pitfalls as is histochemistry.—P. G. WALKER.

REFERENCES


This short monograph provides an excellent example of the enormous increase in the significance of the results of chemical analyses of tissues which is achieved when the figures can be related to tissue morphology on the one hand and to physiological function on the other hand. A technique based on differential extraction by salt solutions, has been devised for separating muscle proteins into three fractions. Histological control showed that these fractions were derived from sarcoplasm, myofibrils and stroma respectively and that the yields were quantitative. The metabolic activities of muscle take place in the sarcoplasm, the myofibrils are the contractile units and the stroma acts as a matrix for these elements.

The results are given of analyses obtained from different types of muscle and from the same muscle at different ages or after denervation or immobilisation. The figures are correlated with the histological picture and interpreted in terms of variations in function. The author is commendably critical of his experimental methods and has tested carefully the effect of many variables in the techniques employed. Confidence in the results given by the methods finally adopted is correspondingly increased. A study such as this in which morphology, biochemistry and physiology meet is a model for a new and enlightened approach to the chemical analysis of tissues.—P. G. WALKER.


This study (in English) from the Rheumatism Foundation at Heinola and the University of Turku, Finland, records 100 children with rheumatoid arthritis starting before the age of fifteen. It is written mainly from a radiological viewpoint, the space devoted to this aspect being more than twice that spent on the clinical survey. There is a polyglot bibliography of about 180 references.

The author shows convincingly that radiological change, except periostitis, occurs much later than in adults: other characteristic features of juvenile rheumatoid arthritis included fusion of the cervical spine, subluxation of the hip, brachygnathia and other growth disturbances. Periostitis was the earliest change, occurring at the earliest four months from onset; erosion was not seen in less than two years. Thus the radiological manifestations seem to be much the same in Finland as in England.—E. G. L. BYWATERS.