

patients who had been in state of paralyses for more than one year, more  $^{99m}\text{Tc}$ -albumin was accumulated in the affected side than unaffected

side of bones. Conclusively distinct correlation between the accumulation of phosphates and blood supply was not obtained.

### **Bone Scintigraphy of New Bone Formation at the Donar Site Following Excision of Fibula**

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Where much of bone transplant is needed, especially when the situation requires a bone transplant which is long enough or can provide an adequate support, the fibula is chosen to serve for such a therapeutic purpose not infrequently. In the present study we made an observation of donar sites of fibulas for the time course of new bone formation following bone excision in an attempt to investigate the regenerating ability of the bone as related to age at operation by bone scintigraphy and roentgenography.

Thirty-six cases were involved in this study. The age at operation in this series ranged from 1 year and 9 months to 63 years and the duration of postoperative follow-ups averaged 3.5 years. Bone scintigraphy and roentgenography were done 1, 2 and 3 months postoperatively and at 6-month intervals thereafter.

#### Results:

In order to study the relationship between the age at operation and the regenerating capacity of bone, the subject patients were divided into 2 groups depending upon whether the operation was performed before or after closure of the linea

epiphysialis.

Seventeen cases underwent operation before closure of the linea epiphysialis at an average age of 8.5 years. In all of these cases bone scintigrams demonstrated marked radioisotope concentration over the entire area of bone defect one month postoperatively before corresponding changes were visualized by roentgenograms. New bone formation was satisfactory in all instances.

Another 19 cases received operation after closure of the linea epiphysialis at an average age of 29.8 years. Bone scintigrams demonstrated a slight degree of radioisotope concentration at both proximal and distal ends of one defect but failed to reveal any discernible radiisotope concentration in the diaphysis at any postoperative stages. Moreover, there was evidence of poor bone formation occurring in the defective area. These findings suggest that regeneration of the fibula might be unexpected following surgical excision of the bone done later than closure of the linea epiphysialis, even if the periosteum is adequately preserved.

### **Clinical Study of Renal Osteodystrophy in Patients Treated with Chronic Hemodialysis**

#### **Part 1. Calcium-Regulating-hormones**

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Calcium (Ca), phosphorus (P), and alkaline phosphatase (Al-P) in serum, and ionized cal-

cium ( $\text{Ca}^{++}$ ), parathroid hormone (PTH), calcitonin (CT), and 25-hydroxycholecalciferol