II. Bone

Treatment of Chronic Articular Dropsy of the Knee by Interarticular Injection of Colloidal $^{198}$Au

Y. OSHIUMI, K. MATSUURA, M. IKAKURA and T. HIGUCHI

Department of Radiology

N. TAKAGISHI and K. OGAWA

Department of Orthopedics

Hiroshima Red Cross Hospital & Hiroshima A-Bomb Hospital, Hiroshima

In 1963, Makin et al. successfully treated cases of chronic articular dropsy of the knee by interarticular injections of colloidal $^{198}$Au (60$\mu$). We wish to report on the satisfactory results we have obtained in radiation therapy by interarticular injection of colloidal $^{198}$Au into 15 knee joints of 14 patients with chronic articular dropsy which had been consistently resistant to various orthopedic treatment.

Methods:

Patients over 40 years of age with chronic articular dropsy of the knee in whom all previous treatment over a number of years had been unsuccessful were selected.

Some of the patients were administered conventional colloidal $^{198}$Au (25$\mu$) while others were given that of 60$\mu$ and the results were compared. Following the injection, determinations of the knee joint-liver ratio and whole body linear scanning were done at regular intervals and scintigrams obtained to determine the state of distribution. The patients were followed from three to 31 months after injection.

Results:

(1) In the comparison of colloidal $^{198}$Au particles of 25$\mu$ and 60$\mu$, it was found that particles of 60$\mu$ had a lower rate of escape from the joint space than those of 25$\mu$, and hence presumably are more effective even when the same dose is administered.

(2) Examination of the urine, blood and some synovial fluid 24 hours after injection all showed results close to the background level.

(3) The cases were followed for any transient reaction after the injection. A transient increase in the amount of fluid was noted in 10 cases while no increase occurred in 4 patients. The fluid increased to the maximum amount in one to four weeks. Patients who developed an increase in the amount of fluid experienced pain as can be expected.

(4) The following therapeutic effects were attained: Of the 15 joints, there was disappearance of fluid in 3 joints (20%), decrease of fluid in 5 cases (33%), no change in 5 joints (33%) and the results were unknown or the patient had died (due to cerebral hemorrhage) for 2 joints (13%). Thus, there was disappearance or decrease of fluid in 53%.

Conclusion:

This method of treatment should be attempted for chronic articular dropsy of the knee where orthodox methods have proved to be ineffective.