A comparison of scintigrams and angiograms involving 3 representative cases showed that there was an area of marked RI concentration coinciding with the primary lesion (radioactivity apparently greater than on the healthy side) on pretreatment scanning, while subsequent repeat scans demonstrated RI accumulation in the same area to be greatly reduced with radiation therapy.

On angiography, hypervascularity and pooling were found decreased after radiotherapy in 2 of 3 cases, while in the remaining one case these changes were still recognizable even 10 months after completion of radiotherapy. This finding, therefore, may be interpreted as suggesting that a decrease in RI accumulation caused by irradiation does not necessarily correlate with blood flow through soft tissues.

Scintigraphic Findings of Rheumatoid Arthritis
—With Special Reference to the Course of the Disease Before and After Synovectomy—

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We reported in our previous study that scanning of Joints with $^{99m}$Tc-pertechnetate can give a correct estimate for the inflammatory activity in affected joints and thus provide a useful means of evaluating disease activity and of assessing therapeutic effects. In the present study, joint scanning was made in a series of 40 cases of rheumatoid arthritis receiving synovectomy in an attempt to follow up the course of disease before and after the operation. The findings thus obtained were investigated for their correlationship with clinical findings and synovial tissue specimens taken at operation were examined to define the pathological basis for positive changes on scintigram.

Method
Cases involved in this study were all those of classical or definite RA at stages I through IV according to the classification system of the American Rheumatologic Association.

Results
(1) A markedly increased RI concentration was noted in all of joints that showed a strong inflammatory activity prior to Operation.
(2) Repeat scans made after synovectomy showed the radio-activity in the lesion to be substantially reduced in 68% of cases studied.
(3) In cases where the surgery failed to bring about an improvement of clinical symptoms or in those in which repeat scans showed RI concentration in the affected locality to be conversely increased postoperatively, the persistence of proliferation of synovial tissue was demonstrated at re-operation.
(4) Scintigrams of excised synovia indicated that an intense RI accumulation was seen to occur in those areas where the synovial tissue was actively proliferating. Positive scintigraphic findings are considered to be attributable primarily to an increase in the amount of morbid synovium with a concurrent increase in local blood flow.