

decrease in activity of parasternal nodes on the side of breast cancer was interpreted as metastasis. But faint visualization on both sides or no visualization probably due to technical failure is difficult to interpret. Furthermore, there are some anatomical variations such as solitary parasternal lymphnode chain.

176 cases were examined. (80 cases preoperatively, 92 cases postoperatively and 4 inoperable cases). 34 patients underwent radical mastectomy (including parasternal dissection) after parasternal lymphoscintigraphy. At surgery parasternal metastases were found in 10 patients and 6 of them (60%) had shown scintigrams interpreted by us as metastasis. In the remaining 24 patients parasternal metastasis could not be found and

12 of them (50%) had shown normal pattern

Follow-up comparative study of preoperative, postoperative and subsequent parasternal lymphoscintigrams should be of diagnostic and prognostic significance. Second-look lymphoscintigraphy was performed in 17 patients, third-look in 4 patients and fourth-look in one patient. Thus far there has been observed no clinical sign of relapse in parasternal nodes of these patients. However it is of interest that more than half of follow-up cases showed overall reduction of activity accumulation in comparison with previous lymphoscintigram. The cause thereof is yet unknown though it should be noted that some of these cases had received postoperative radiation treatment.

On Protein-Binding of ^{67}Ga -Citrate

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Human blood serum was incubated with ^{67}Ga -citrate in vitro, and the mixture was fractionated through Sephadex. The radioactivity in the eluate was located at V_0 and at the total bed volume. V_0 fraction was further fractionated through Sephadex G200 and it was found that the radioactivity was eluted at the position corresponding to the third peak of the serum protein. It was found that ^{59}Fe -labelled peak as well as ^{111}In -labelled peak appeared at the same position.

These results indicate that ^{67}Ga binds with serum transferrin, however, it was found that Ga-protein binding is far less stable than that of Fe and In, as it was shown by gel-filtration that the protein-bound radioactivity is dissociated by repeated gel-filtration. Ga-pr-

otein binding is unstable also to the addition of acid and it completely dissociated by the addition of 5% trichloroacetic acid, or, it is unstable to increased ionic strength of the solution. These characteristics have hitherto made the identification of Ga-transferrin binding difficult, either by electrophoretically, or by other methods.

The authors are skeptic to the concept of Ga binding with cyclic AMP-dependent phosphodiesterase (Fujino 1973), because they measured the Ga-bound protein by Milipore filter of 0.45 μM . Since we found that In-111 bound protein passes through Milipore filter of 0.22 μM , we believe that the Ga-protein will also behave like it. Further investigation is in progress.