Thirty-three patients with thyroid carcinoma were treated with radioactive sodium iodide (I-131). Twelve patients had follicular adenocarcinoma, 10 patients had papillary adenocarcinoma, and one patient had embryonal carcinoma. The average age of these patients at the first time treated was 51.2 years with a range of 9 to 79 years. The male patients were 8 and female ones were 15. All patients had received previous surgery. 15 had received total thyroidectomy and 8 had hemithyroidectomy or subtotal thyroidecmy. 13 of 23 patients had regional lymph node metastases and 17 of 23 patients had distant metastases. The average total cumulative dose of I-131 was 207.5 mCi with a range of 100 to 786.5 mCi. 14 patients are surviving and 9 patients were dead. The plasma h-TSH was measured in 10 patients on 14 occasions before administration of I-131. In patients, T4 administration was discontinued for 7 to 24 days. The values of h-TSH varied from 4 to 145.0 µU/ml. In 7 patients, withdrawal of T3 for 3 to 35 days, the values of h-TSH varied from 2.4 to 192.0 µU/ml. If patients had T4 as replacement therapy, T4 were changed to T3 for 4 weeks and then patients remained on T3 for two weeks. This procedure was more favorable for patients to discontinue T4 for several weeks to increase TSH secretion.

This study was undertaken to establish the basis of the precise radiation treatment planning of the paraafternal lymph nodes for patients with breast cancer. Eighteen female patients with breast cancer were examined by paraafternal lymphoscintigraphy. The age range was 26 - 77 yr (average: 51). The lymphoscintigram was obtained 4 hours after bilateral subcostal injection of Tc-99m sulfur colloid or Tc-99m antimony sulfide colloid, using both a conventional collimator and a bilateral collimator. The three-dimensional location of the lymph nodes was observed by the method which we had previously reported.

The following results were obtained. The average widest distance between the bilateral paraafternal lymph nodes was 5.3 ± 0.6 cm (n=11, range 4.1 - 6.4). The lateral distances of the nodes from midline ranged from 0.7 to 3.7 cm. The depths of the lymph nodes widely varied from 0.9 to 6.5 cm.

In conclusion, it is necessary to grasp the exact location of the paraafternal lymph nodes in each patient with breast cancer for establishing the precise radiation treatment planning, since the location of each lymph node remarkably varied in each individual.