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TREATMENT OF THYROID CARCINOMA WITH I-131. M. Nakamura. Dept of Radiology Tohoku University School of Medicine. Sendai.

Twenty-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 thyroidectomy. 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 297.5mCi 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 3 patients, T4 administration was discontinued for 7 to 24 days. The values of h-TSH varied from 4 to 145.0mU/ml. In 7 patients, withdrawal of T3 for 3 to 35 days, the values of h-TSH varied from 2.4 to 192.0mU/ml. If patients had T4 as replacement therapy, T4 were changed to T3 for 4 weeks and then patients remained off T3 for two weeks. This procedure was more favourable for patients to discontinue T4 for several weeks to increase TSH secretion.

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ANALYSIS OF RADIOIODINE THERAPY FOR WELL-DIFFERENTIATED THYROID CARCINOMAS. A.Kubo and W.H.Beierwaltes. The University of Michigan Medical Center. Ann Arbor,MI.

During the period from 1947 through 1979 there were 456 patients with well-differentiated thyroid carcinomas treated with surgery and radioiodine in the University of Michigan Medical Center. Of them, 109 (24 %) had distant metastases at the time of initial diagnosis or during follow-up study. We have examined our clinical material in order to determine the frequency of distant metastases from well-differentiated thyroid carcinoma, the death rate within it and clinically important factors in prognosis. The therapeutic dose of I-131 administered was not less than 150 mCi.

The patients with lung metastasis had a 64 % survival at 10 years, while the patients with bone metastasis had a 45 % survival at 10 years. In this study, what factors will influence the survival of well-differentiated thyroid carcinoma with distant metastases was investigated, comparing the patients who died of thyroid carcinoma with the patients who are living more than 10 years. Of possible prognostic factors, age at diagnosis, sex, size of primary tumor, histopathology, sites of distant metastases had statistically significant difference between two groups.

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THE APPLICATION OF PARASTERNAL LYMPHOSCINTIGRAPHY BY THE BILATERAL COLLIMATOR FOR THE RADIATION TREATMENT PLANNING. E.Ohtake, M.Iio, H.Toyama, H.Murata, K.Chiba, H.Yamada, S.Takaoka, M.Noguchi, S.Kawauchi and K.Matsui. Tokyo Metropolitan Geriatric Hospital and Yokohama City University School of Medicine. Tokyo and Yokohama.

This study was undertaken to establish the basis of the precise radiation treatment planning of the parasternal lymph nodes for patients with breast cancer.

Eighteen female patients with breast cancer were examined by parasternal 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 parasternal 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 parasternal 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.

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GALLIUM-67 CITRATE SCINTIGRAPHY AND RADIOTHERAPY IN PATIENTS WITH NON-HODGKIN'S LYMPHOMA (NHL) OF HEAD AND NECK. H.Sueyama, N.Ui, M.Nakano and F.Shimada. Chiba Cancer Center, Chiba.

From November 1972 to June 1980, ninety patients with NHL were managed in Chiba Cancer Center Hospital. Of them, 22 patients whose tumors had primarily originated in head and neck regions were treated by radiotherapy and Ga-67 scintigraphy was performed on the patients prior to the treatment for evaluation of an extension of the tumor. Scintigraphic findings were useful to determine possible tumor extension. In patients with negative or localized uptake of the isotope in the head and neck regions, radiotherapy was effective to control the tumor. However, the result of radiotherapy was poor in patients with scintigraphic extension of the tumor to thoracic and/or infradiaphragmatic organs. We conclude that chemotherapy must be combined to radiotherapy to get better therapeutic results in patients with scintigraphic extension of the tumor beyond the head and neck regions.