

EL17. The Treatment of Differentiated Thyroid Carcinoma —46 years experience at the Royal Marsden Hospital

V. Ralph McCready, Clive Harmer, Mary O'Connell, Maggie Flower

The Thyroid Unit, Royal Marsden Hospital, U.K.

Differentiated thyroid carcinoma is a rare disease affecting about 1–10 in 100,000 of the population. Since the differentiated carcinoma behaves similarly to normal thyroid tissue it takes up radioiodine and converts it into thyroid hormone. This had led to the use of radioiodine for the treatment of differentiated carcinoma. Since 1949 649 patients have been treated at the Royal Marsden Hospital in London and Sutton. Patients have been referred from all over the world and the South East area of England. They have had a variety of surgical procedures enabling us to compare the outcomes from the several procedures. It is obvious that total or near total thyroidectomy is essential. As in other series there was a female predominance with peak incidence in the fourth decade. The peak male incidence occurred in the sixth decade. 70% of the cases were papillary and 27% follicular with 2% Hurthle. The survival rates were appreciably different at the 10,

20, and 30 year endpoints. Factors influencing survival included age, grade, stage, metastases and the presence of bone metastases. Since 1972 patients have been treated according to a strict protocol and there has been a significant improvement in survival. This protocol includes a total thyroidectomy, ablation followed by therapy activities of radioiodine until no further functioning tissue is seen. Patients with bone involvement have had decreased survivals. We have embarked on a dosimetry programme to measure the dose delivered to individual lesions using PET imaging and I-124. It has become apparent that to get adequate ablation doses of the order of hundreds of Gy must be given. The variation in absorbed dose could explain the variations in response to radioiodine therapy. The treatment of differentiated carcinoma of the thyroid provides the model for future application of the use of unsealed radioactive sources.