
The Cancer Department of St. Bartholomew's Hospital (London), as a result of their evaluation of 200 kv. x-ray therapy, decided that a thorough investigation should be made of the possible advantages of higher voltages. A gift of Mrs. Meyer Sassoon provided the building and equipment, and a five year fellowship granted by the Sir Halley Stewart Trust insured that a competent radiotherapist would undertake the work and follow it through. Treatments were begun at 700 kv. in 1937 and at 1,000 kv. in 1939, and the project has been carried on with practically no interruptions, in spite of war-time hazards in London.

This book is said by its author to be an "interim report," which is true as far as evaluation of clinical results is concerned. However, more than half of the volume is given over to the results of carefully carried out physical measurements, which form a real contribution to the knowledge of the behavior of x-rays generated at approximately one million volts. These include investigations of methods of measurement of the voltage, determination of the quality and quantity of x-ray output, and tests of protection. Of particular value is a detailed study of the filtering effects of various combinations of metals. Numerous tables and graphs are given showing the relation of percentage depth dose to kilovoltage, filtration, focal-skin distance, and field size, and several isodose charts are shown.

Groups of cases treated with million-volt x-rays include inoperable carcinoma of the breast, carcinoma of the cervix uteri, malignant disease in the upper air and food passages, carcinoma of the rectum, bronchus, esophagus, and other organs. Detailed charts have been drawn up of the distribution of radiation throughout the entire irradiated region for comparison with similar charts for 200 kv. therapy. Average tumor doses for the million-volt rays were from 25 to 60 per cent higher than for 200 kv. rays. Because of the small number of patients in any group, it is evident that no conclusions can be drawn as yet. However, the clinical impression is that the use of the higher voltage gave better results in carcinoma of the breast, pelvic organs, and rectum, whereas in the intraoral, bronchus, and esophagus groups the findings are indeterminate. It is pointed out that in these groups there are many variable factors involved and that it is essential to have larger numbers of cases for statistical assessment.

The incidence of x-ray nausea, vomiting, and anorexia has been somewhat less with supervoltage than with 200 kv. therapy; changes in blood picture, time of healing of tissue reactions, and general convalescence about the same.

EDITH H. QUIMBY.

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