

Radiation Dose Along a Treatment Couch During Gamma Knife Radiosurgery

Radiosurgery with a Leksell Gamma Knife has become increasingly popular for malignant and benign lesions of the brain. The total beam-on time for a gamma knife procedure can run up to 30 minutes or longer. Exposure measurements have been made at different locations along the treatment couch of a model B-2 gamma knife using an ionization chamber. These measurements can be used to estimate the radiation dose to a patient's thyroid and the gonad. Measurements with a helmet with 8 mm collimators gave exposure rates of 28 R/hr and 1.3 R/hr respectively at a distance of 15 cm and 80 cm respectively from the center of a spherical scattering phantom of 16 cm in diameter. Exposure rates with a helmet with 14 mm collimators gave exposure rates of 35 R/hr and 2 R/hr respectively at the same locations. The details of our measurements and results will be presented.