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入江 実他, Radioisotopes, 27(2), 112, (1978).

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Analysis of Medical Usage Factors Pertinent to Radiation Protection for A 4 MeV Rotational Linear Accelerator.

Moyer, R. F., Health Phys., 32, 505-507, (1977).

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Irradiation Timer for Shutter of ^{60}Co Head.

Henry, W. H. and Yelle G., Health Phys., 32, 559-561, (1977).

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Effect of air space on depth dose in electron beam therapy.

Faiz M. Khan, Ph. D., Wilfred Sewchand, Sc. D., and Seymour H. Levitt, M. D., Radiology, 126, 249-251, (1978).

Summary

In electron beam therapy, alteration in dosimetry occur as a result of air space between the end-of-treatment cone and the skin surface. A large air gap may be introduced in order to obtain a field

size larger than that available at the cone end. Needed dosimetry corrections related to these air space problems are discussed, along with a proposed method of measuring effective source-to-cone end distance. Data presented show the modification of a dosimetric field which occur with an increase in the air space below the treatment cone.

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A device for insuring the congruency of opposed irregularly blocked fields.

Gary S. Simpkins, Marcia Urie, M. S. and Sidney P. Kadish, M. D., Radiology, 126, 261-263, (1978).

Summary

A device for insuring the congruency of opposed irregularly blocked fields has been developed which permits the treatment of both fields of a parallel opposed pair without the realignment of any field-shaping standard non-divergent blocks. The device is an adaptor which attaches directly to the shadow tray or wedge holder and provides 2 channels for 1 Lucite shadow tray. A mirror-image field is obtained without disturbing the position of the blocking array. Set-up times are decreased.

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Electron beam calibration constants.

Richard G. Lane, Ph. D. and David Lake, B. S., Radiology, 126, 259-260, (1978).

Summary

Electron treatment beam calibration constants are tabulated in a convenient form for mean incident electron energies, E_0 , of 6 to 21 MeV; and practical ranges, R_p , of 2.75 to 10.35 cm of water. Values of mean electron energy at depth E_d , chamber radius correction factors (K_p), and C_e factors may be readily obtained from this chart.

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Time-Dose effects in the matching of adjacent radiotherapy field.

Morris Thatcher, Ph. D. and Mark Yudelev, M. Sc., Radiology, 126, 253-254, (1978).

Summary

When adjacent radiotherapy field are treated at different times, the dose fraction at the junction of the fields is different from that within the portals.

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When the width of the gap between the fields is adjusted to produce equality of dose at the junction it will not give equality with respect to radiobiological effect. The authors have used Ellis's NSD equation to take into account time-dose relationships in the matching of adjacent fields. Distributions of physical dose and biologically effective dose in the region near the junction of opposed pairs of parallel Co60 fields are given.

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Spinal cord protection during cross-fire irradiation of the intrathoracic esophagus; Tube-tilt vs shielding.

Wilfred Sewchand, Sc. D., Thomas K. Jones, Jr. M. D., Faiz M. Khan, Ph. D. and Seymour H. Levitt, M. D., *Radiology*, 126, 239-242, (1978).

Summary

The protection of the upper thoracic spine achieved by a tube-tilt technique was found to be comparable to that obtained from direct shielding during cross-fire therapy of the intrathoracic esophagus. An isocentric technique was utilized which included one anterior and two posterioroblique fields. Significant underdosages to the esophagus at levels superior to the isocenter are caused by tube-tilt, whereas direct shielding resulted in a uniformity of esophageal doses to within 5%. The need for a tissue compensator for the anterior field must be assessed on an individual basis from off-axis treatment planning.

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Computer program for central axis dose.

Andrew G. Bukovitz, *ACTA Radiologica therapy physics biology*, 16(5), (1977).

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Homann, S. G., *Health Phys.*, 33, 337-339, (1977).

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A Survey of Radiation Dose to Patients in mammo-graphy.

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