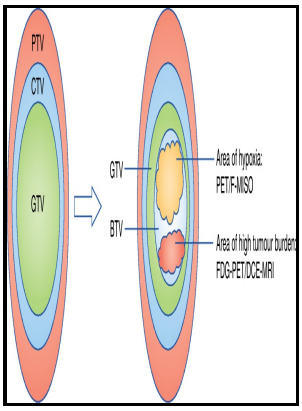
Thermal dosimetry and treatment planning

Springer-Verlag - Thermal dosimetry for bladder hyperthermia treatment. An overview



Description: -
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Models, Biological.
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Thermal dosimetry.
Thermotherapy.Thermal dosimetry and treatment planning
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Clinical thermology.Thermal dosimetry and treatment planning
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Thermal Dosimetry and Treatment Planning : John C. Chato : 9783642487149

Effect of irregular patient surface on dose distribution. Internal heterogeneities can change the depth of beam penetration as a result of differences in the rate of energy loss, which can result in PTV underdose and critical structure overdose. Dose Algorithms For the past 20 years, the standard methodology for dose calculation in the patient has been the PBA.

Thermal Dosimetry Characteristics of Deep Regional Heating of Non

The lateral dimension of the region having its dose perturbed by the bone increases with depth. Subsequently, the profiles acquired during acceptance should be reviewed monthly and be consistent to within 1% of the acceptance values. To use this methodology, the medical physicist must measure dose output as a function of square field size and SSD for each energy-applicator combination at the time of commissioning the accelerator.

What is a Medical Dosimetrist?

This results in as much as 4 cm in depth of needless irradiation in lung, unless 1 cm of bolus is used to effectively lower the energy incident on the patient to 10 MeV. Keywords: Dosimetry; Molecular radiotherapy; Treatment planning.

Electron

The American Association of Physicists in Medicine AAPM Task Group 25 recommended that flatness and symmetry should be evaluated along major axes lines containing central axis and perpendicular to the collimator edges and along diagonal axes.

Thermal Dosimetry and Treatment Planning

Conclusion A clinical pilot study of deep hyperthermia combined with MMC chemotherapy successfully demonstrated that a heating prescription of 42±2°C for 40-60 minutes can be delivered safely to the bladder for a typical range of patient sizes.

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Bone Interactions of electrons with bone are complex and interesting.

Thermal dosimetry for bladder hyperthermia treatment. An overview — University of Texas Southwestern Medical Center

Energy dependence of depth dose. Respiratory Motion Management Simulation What is it? Isodose plots 5% to 100% in water for open 15 by 15 cm applicator and for 6 MeV, 100-cm SSD A ; 16 MeV, 100-cm SSD B ; 6 MeV, 110-cm SSD C ; and 16 MeV, 110-cm SSD D Varian Clinac 2100C. The ability to better determine the delivered thermal dose will enable clinicians to investigate the optimal treatment parameters, and consequentially, to give better controlled, thus even more reliable and effective, thermal treatments.

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MATERIALS AND METHODS: A total of 14 patients were treated with MMC and deep regional hyperthermia BSD-2000, Sigma Ellipse or Sigma 60. This makes, on the one hand, the internal surface of the bladder wall relatively easy to heat and ensures in most cases a relatively homogeneous temperature distribution; on the other hand the variable volume, organ motion, and moving fluid cause artefacts for most non-invasive thermometry methods, and require additional efforts in planning accurate thermal treatment of bladder cancer.

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