

Experience of 3D-CRT at Dhaka Medical College

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Abstract

This paper shows the experience of the treatment of the last 50 cancer patients regarding the planning, treatment and result of the treatment.

Keywords: Clinac 2100C; Orfit; Simulation; Colour wash; OARs

Abbreviations

OAR: Organ at risk

Introduction

The Department of Radiotherapy at Dhaka Medical College started its journey in 1958. Initially there was Deep X-Ray machine and later on Cobalt60 machine for the treatment of malignant diseases. The Linear accelerator machine was installed in 2007. Since then three-dimensional conformal radiotherapy (3DCRT) has been used for the treatment of different types of malignancies. This paper shows the experience of the treatment of the last 50 patients regarding the planning, treatment and result of the treatment.

Materials and Methods

The patients were treated by Varian clinac2100C and the photon energy was 6MV and 15MV. The treatment planning system was eclipse of Varian. Initially the patients were examined and reviewed at the out-patient department. The oncologists decided the treatment to be administered. We used the neck rest, orfit, breast-board, knee rest and leg rest as immobilization devices. Orfit was used individually for each patient of head and neck. Fiducial markers were placed along the laser alignment. After that the CT simulation contouring was done by the oncologists. For contouring we followed the Radiation Therapy Oncology Group (RTOG) guideline. With the help of the physicist treatment fields and dose distribution was set. By Colour wash the dose distribution and coverage were assessed. We checked for any hot spot and cold spot. By the dose volume histogram, the dose to the organs at risk was evaluated. Dose to the OARs were kept within the tolerance limit by changing the field arrangements or number of fields, and by weighting using the collimators. After checking all the parameters, the plans were approved. Set-up notes were taken and all data transferred to the control panel. Patients were positioned as per the treatment plan and the therapy was delivered accordingly.

Result

Among the 50 patients the distribution was as follows-Patients with head and neck malignancies were 13 in number among which 9 patients completed the treatment. Patients with intra-cranial space occupying lesions were 12 in number, of which 10 patients completed their treatment. Breast cancer patients were 13 in number and all completed their treatment. Lung cancer patients were 6 and 5 complet-

ed their treatment. Out of the 4 patients with cervical cancer 1 completed treatment only. 1 patient each of prostate and rectum completed their treatment as per schedule. Among the 50 patients 40 completed and 10 did not complete the treatment. Among the 50 patients, 24 were male and 26 were female. Patients were advised for follow-up but only 20 of them came regularly for follow-up till reporting date.

Conclusion

10 patients did not complete their treatment due to inability to stay in Dhaka, economic crisis and progression of the disease. Also the trouble of the machine and lack of proper maintenance resulted incomplete treatment because some patients went back home and did not return and it took excess time to complete treatment for them who came later. These limitations compelled less number of patients to be enrolled in this mode of treatment.

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