

عنوان مقاله:

Dosimetric Study of Voluntary Deep Inspiratory Breath-Hold (V-DIBH) Vs Free Breathing (FB) Technique on Organ Doses for Left-Sided Breast Cancer

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نویسندگان:

Deepti Sharma – Dept of Radiation Oncology, ILBS, New Delhi

Nidhi Marjara – Dept of Radiation Oncology Max Superspeciality Hospital, Shalimar Bagh ,Delhi

Vineeta Goel – Department of Radiation Oncology, Fortis Superspeciality Hospital, Shalimar Bagh Delhi

Nithya Loganathan – Department of Radiation Oncology Max Superspeciality Hospital, Shalimar Bagh ,Delhi

خلاصه مقاله:

Introduction : Long term cardiac morbidity is a concern with left sided breast/chest wall irradiation. In this present study, we have evaluated the Impact of Voluntary deep inspiratory breath hold (V-DIBH) Vs Free Breathing (FB) technique on heart and lung doses for left-sided breast cancer with audio visual guidance. Material and Methods: A total of 31 patients diagnosed with left breast cancer were found to be suitable for V-DIBH. Patients were trained for breath hold technique for 3 to 4 days on CT simulator. Seven patients being non-compliant to V-DIBH therefore 24 patients were simulated for breath hold. We made tangential IMRT plans for all the patients on both V-DIBH and free breathing scans for dosimetric comparison. D95% target and organ at risk (OARs) like Dmean of heart, LAD, lung and opposite breast were compared for both plans. Results: A significant reduction of mean cardiac dose from  $5.7 \pm 1.58$  Gy to  $3.45 \pm 0.68$  Gy ( $p < .05$ ) and cardiac V25Gy from  $7.28 \pm 3.97\%$  to  $1.64 \pm 1.35\%$  ( $p < .05$ ) in V-DIBH cases as compared to FB. Mean dose to the LAD was reduced by 3.9 Gy in DIBH cases ( $p < .05$ ). Differences between FB and V-DIBH mean lung dose was 2.47 Gy ( $p = .106$ , ns) and ipsilateral lung V20Gy was 2.57% ( $p = .078$ , ns). Conclusion: This study demonstrates dosimetric benefits of V-DIBH over FB in reducing dose to heart, LAD and ipsilateral lung without compromising the target volume coverage. We should opt for V-DIBH over FB for left sided breast cancer cases

کلمات کلیدی:

V, DIBH Free Breathing Heart Lung Breast Cancer

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