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Study on the timing and impact of surveillance imaging following treatment of early-stage NSCLC with SBRT: Do we need to image at 3 months post-completion?

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Objectives: Evidence is lacking on the optimal timing and type of imaging in surveillance following treatment of early-stage non-small cell lung cancer (NSCLC) after stereotactic body radiation treatment (SBRT). As per NCCN Guidelines, all patients treated for NSCLC regardless of type of therapy, should have a chest CT scan every 6-12 months for 2 years post-treatment if there is no evidence of clinical/radiographic disease. Though FDG PET/CT studies are superior to CT scans in differentiating between malignancy and benign conditions in the lung, PET studies are not indicated in the routine surveillance of patients treated for NSCLC. We reviewed the frequency and type of surveillance study for all patients treated for medically inoperable early-stage NSCLC with SBRT. We assessed the efficacy of the varying surveillance studies, with a focus on the initial surveillance study and the subsequent action taken after that study in detecting disease progression.

Methods: Between 2012 and 2015, a total of 44 patients received a first course of SBRT to the lung. We determined the type and time to surveillance of first scan post-treatment and assessed the findings and action taken after the study. We compared survival times from the end of treatment to the date of death or last follow-up.

Results: At median follow-up of 19 months, 19 (43%) patients had a CT scan only, 2 (5%) had a PET scan only, 14 (32%) had both scans, and 7 (16%) did not have a surveillance scan. The median time to surveillance was 3 (0.3-11.7) months. Of the 22 (52%) patients who had first surveillance scan at approximately 3 (2.5-4) months after the end of SBRT treatment, the median change in size of the largest dimension of the lesion pre-treatment was a decrease in 4mm. Of the 22 patients that had scans at 3 months, 0 resulted in change in management.

Conclusions: Since 0 of the 22 3-month surveillance scans resulted in a change in management, surveillance scans in such a short interval after treatment do not provide any clinically relevant information. There is limited value in a 3-month surveillance scan post-SBRT, and therefore, the practice may be eliminated from our surveillance practices.

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