

Electromagnetic Navigation Bronchoscopy Enables Non-Invasive Diagnosis and RSM Placement Following Pneumonectomy and Drug-Coated CAD Stent

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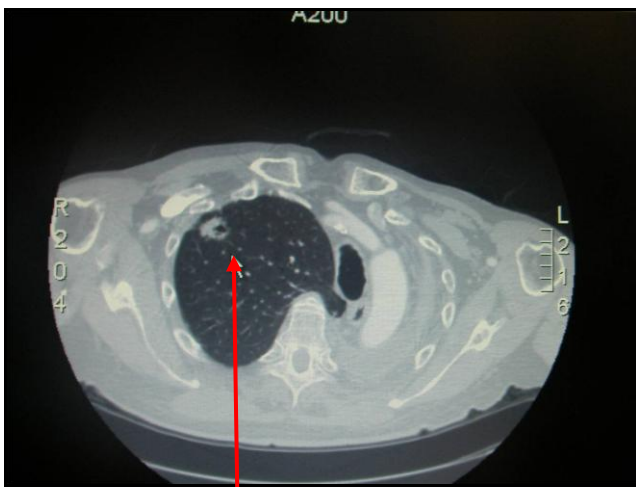
Introduction:

The combined use of electromagnetic navigation bronchoscopy and stereotactic radiosurgery is a promising method for the treatment of lung cancer.

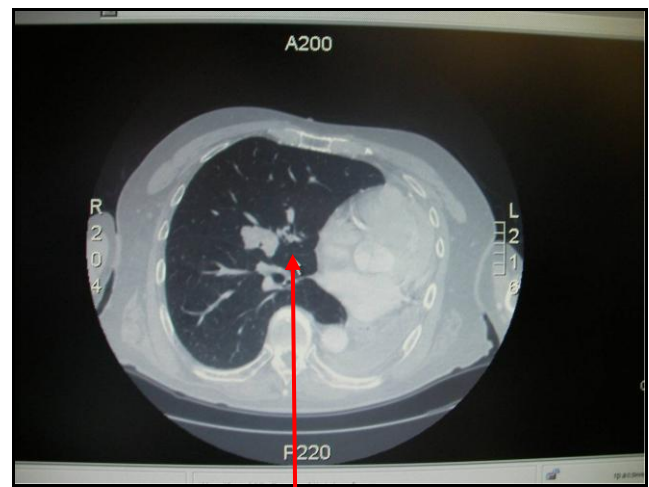
Case Report:

A 72-yr-old male, heavy smoker with a medical history of left pneumonectomy in 1997 for lung cancer, CAD with a recently placed drug-coated stent and taking Plavix® three months upon referral.

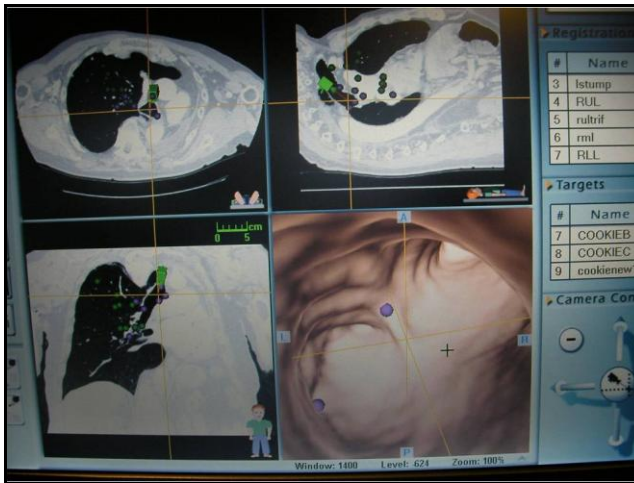
A chest CT found two lesions in the right lobe; one in the upper lobe and one in the middle lobe. A PET scan showed activity in each of the two lesions. The patient showed mediastinal shift, so a TTNB was seen as too risky a procedure due to the possibility of a pneumothorax. In addition, presence of coronary artery disease and placement of a drug-coated stent suggested this patient would benefit from electromagnetic navigation bronchoscopy (ENB) to obtain a diagnosis.



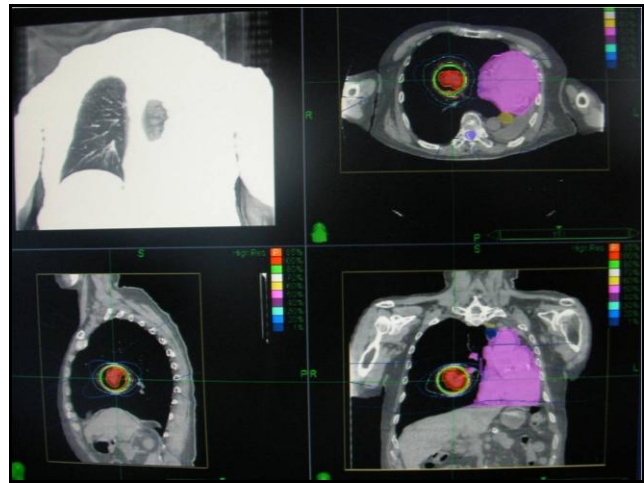
RUL: 2 cm Cavitary Lesion



RML: 3 cm Solid Lesion



S/P inReach Electromagnetic Navigation Bronchoscopy of RUL & RML lesions with biopsy and fiducial placement



Cyberknife® Radiosurgery to RML



RML: 6 Month follow-up Chest CT

During the planning phase, superDimension®'s inReach™ system clearly showed the stump of pneumonectomy. The pneumonectomy caused the lung to shift and the patient's right airway had become elongated. inReach ENB was successful in navigating to both lesions. The lesion in the right upper lobe was atypical TB. The middle lobe lesion was diagnosed squamous cell cancer and fiducial markers were placed at the treatment location.

The patient was treated with Cyberknife® stereotactic radiosurgery to the right middle lobe cancer. At three months following treatment, the CT scan of the right middle lobe showed the 3 cm lesion had started to shrink, and at six months it had continued to regress. All biopsies and treatment were done as outpatient. Clinically, the patient is doing very well.

Discussion:

Electromagnetic navigation bronchoscopy achieved a successful biopsy and the sample provided a diagnosis on a patient whose prior pneumonectomy, CAD and drug coated stent placement precluded more invasive approaches. Once at the treatment location, inReach was used to place fiducial markers for radiation treatment.

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