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Electromagnetic Navigation Bronchoscopy® (ENB™) Procedure Use in a Paramediastinal Lesion

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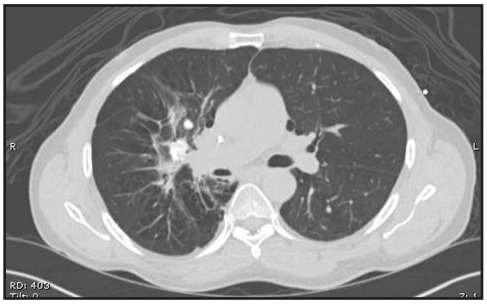
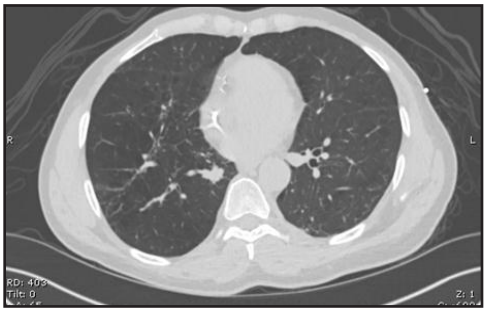
FIRBROTIC RIGHT HILUM FROM PREVIOUS RADIATION



NEW 2.3 CM RIGHT LOWER PARAMEDIASTINAL NODULE



NAVIGATE TO DIFFICULT LOCATIONS AND OBTAIN BETTER ANGLES FOR BIOPSY

INTRODUCTION:

Traditionally paramediastinal lesions can be difficult to reach with flexible bronchoscopy; however with the addition of a superDimension® Electromagnetic Navigation Bronchoscopy® (ENB™) procedure and curved guide sheaths these areas are becoming more easily accessible. Also, an ENB procedure can be used to place fiducial markers which becomes very important in these areas due to the close proximity to the mediastinal structures.

CASE REPORT:

A 60-year-old male with a history of limited small cell lung cancer diagnosed in 2008 was referred to the University of Louisville Hospital James Graham Brown Cancer Center in 2012 with a new right lower lobe nodule. In 2008, his original 8 cm right hilar small cell cancer was treated with concurrent chemotherapy and radiation. The patient developed right upper lobe fibrosis, bronchiectasis, and nodular opacities felt to be secondary to radiation therapy. A follow-up PET scan in 2012 revealed stable activity in the previously treated lung but a new nodule was found outside the radiation field.

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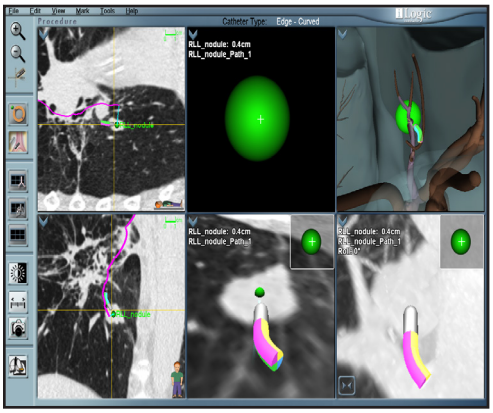
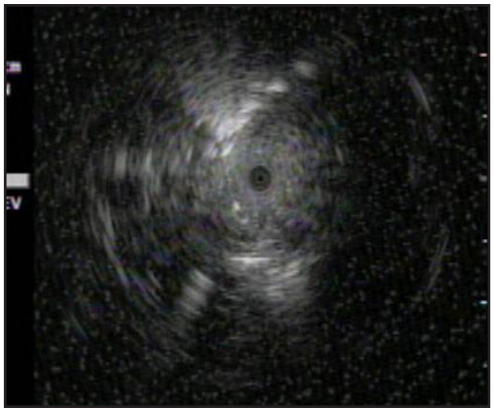
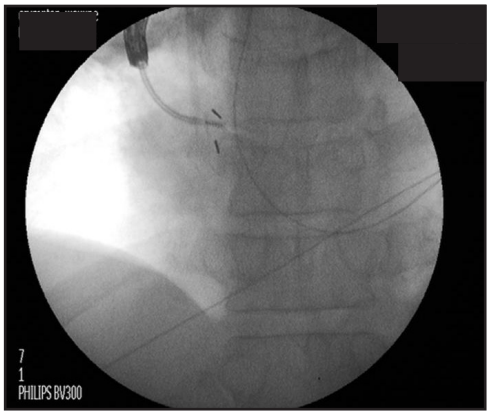
SUPERDIMENSION® SYSTEM SCREEN SHOT AT THE RIGHT LOWER LOBE TARGET



RADIAL EBUS CONFIRMATION OF TARGET LESION



FLUOROSCOPIC VIEW OF FIDUCIAL MARKER PLACEMENT



This 2.3 cm nodule was in the right lower paramediastinal area with an SUV of 3.3. It was felt that because of the location of the nodule, the patient's previous diagnosis of small cell cancer, COPD, and radiation fibrosis that a bronchoscopy would be the safest way to establish a diagnosis. This was unsuccessful. The patient was followed and repeat imaging demonstrated increasing PET activity and size of the lesion. Two more bronchoscopies were attempted without success. The patient was referred for an Electromagnetic Navigation Bronchoscopy® procedure. The lesion was successfully reached with navigation bronchoscopy using a 90 degree superDimension® Edge™ catheter. TBNA was done with an 18-gauge WANG™ needle. The diagnosis of non-small cell cancer was made with enough tissue obtained for immunohistological stains. Four 5 mm fiducial markers were then placed as the patient was not a surgical candidate.

CONCLUSION:

Electromagnetic Navigation Bronchoscopy procedure can help doctors navigate to difficult locations and obtain better angles for biopsy that are not achievable with flexible bronchoscopy alone. Also, the ability to place fiducial markers at the time of diagnosis is not only convenient but will help the patient avoid further damage to the remaining normal lung and surrounding structures.

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