Utility of computed tomography reconstruction in deciding transbronchial needle aspiration technique

History
An 84-year-old woman presented with a 3-month history of increasing dyspnoea. She had previously had a left mastectomy two decades before for breast cancer and received adjuvant tamoxifen. Her cancer recurred in the left axilla 17 years later and was treated with letrozole followed by exemestane as well as local clearance and radiotherapy. Physical examination confirmed her previous surgery and reduced breath sounds at the right base. Chest radiography confirmed right-sided volume loss with right-sided pleural thickening, an elevated right hemidiaphragm and mediastinal adenopathy.

Figure 1. Sagittal (top left), coronal (top right) and transverse (bottom right) views of CT scan of thorax (mediastinal windows) with showing subcarinal adenopathy and right-sided pleural thickening with virtual reconstruction (bottom left) showing appearance of sharp carina from bronchoscopic view.

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The latter was further characterized on computed tomography (CT) with virtual reconstruction suggesting there was no endoluminal component or extrinsic compression meaning conventional bronchoscopy alone would be unlikely to yield a diagnosis. Moreover, endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) might be a better option than blind conventional TBNA if available (Figure 1).

Conventional bronchoscopy was performed which confirmed no endobronchial lesion (as suggested by the reconstructions) with a sharp carina, but an EBUS-TBNA was performed at the same time with a 22-gauge needle to sample the subcarinal (Figure 2) and right hilar nodes. Histology revealed adenocarcinoma which was positive for both oestrogen (Figure 3) and progesterone receptors in keeping with recurrence of her previous breast cancer. She was recommenced on tamoxifen and remains well.

Summary

CT virtual reconstruction can provide complementary information to identify those who might benefit from EBUS-TBNA (if available) over conventional TBNA. This may also help to identify those where conventional TBNA should be performed, reserving EBUS-TBNA for when it is really needed, given the resource and capacity costs of this technique. It is suggested that, therefore, this radiological technique is considered in centres with access to both EBUS-TBNA and conventional TBNA, when there is doubt from the initial CT chest whether there is any endoluminal abnormality.

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Conflict of interest: None declared.