

## Breast lymphatic drainage via the pulmonary lymphatic system

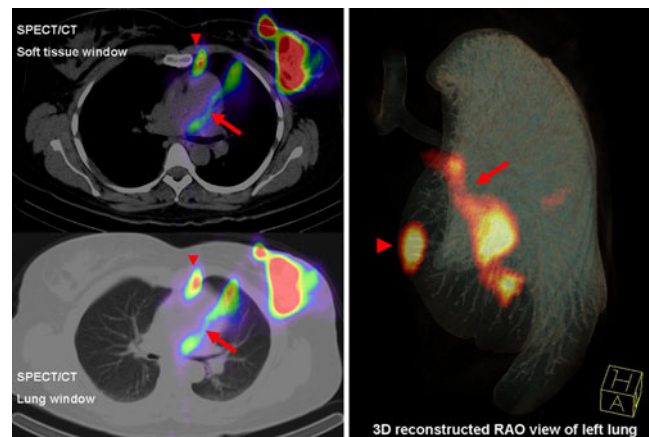
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A 43-year-old woman underwent sentinel lymph node localisation prior to a left mastectomy and sentinel node biopsy for recurrent multifocal left-sided breast cancer. Previous treatment included a wide local excision and left axillary nodal clearance 15 months ago. Following one peri-areolar intradermal injection of 15 MBq of  $^{99m}\text{Tc}$ -antimony colloid in the upper inner quadrant of the left breast, dynamic planar imaging failed to identify a sentinel node. SPECT/CT imaging demonstrated a lymphatic channel extending from the left subpectoral region through the lingula of the left lung into the mediastinum posterior to the pulmonary trunk and terminating in the subcarinal nodal station (arrow). This unusual pattern of breast lymphatic drainage via the pulmonary lymphatic system is attributed to opening of collateral lymphatic channels following the previous left axillary nodal clearance. A left internal mammary sentinel lymph node (arrowhead) was also demonstrated and confirmed intraoperatively.

While it is commonly believed that spread of breast cancer beyond the regional lymph nodes is haematogenous, it is also increasingly being recognised that traditional anatomical descriptions of lymphatic anatomy do not necessarily reflect observed variations in lymphatic pathways [1, 2]. Given that breast cancer is one of the known extrathoracic malignancies that metastasise to mediastinal nodes [3–5], this finding of a direct communication of

breast lymphatic drainage with the intrapulmonary lymphatic system provides a potential mechanism for this pattern of spread. This case highlights how the combination of functional and anatomical information provided by SPECT/CT in lymphoscintigraphy continues to improve our understanding of potential paths of cancer spread.



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