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10th International Workshop on Surgical Exploration of the
Mediastinum and Systematic Nodal Dissection



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Surgery, Techniques & Transplant, Respiratory Nursing
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Society of Pneumology and Thoracic Surgery (SEPAR)



3rd Joint Meeting of the Spanish Society of
Thoracic Surgery (SECT)



30th Congress of the "Asociación Iberoamericana
de Cirugía Torácica" AIACT



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TUMOR DRAINING LYMPH NODE IDENTIFICATION PRECEDING TO LUNG CANCER SURGERY THROUGH NAVIGATION BRONCHOSCOPY MEDIATED RADIOTRACER INJECTION

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Objectives: Localizing the first tumor draining lymph node (TDLN) in patients preceding to surgery and radiotherapy would allow more specific and thorough evaluation and stratification of early-stage disease treatment needs in the future. This study evaluated the feasibility of TDLN identification following a diagnostic navigation bronchoscopy procedure.

Methods: This clinical trial (NCT05555199) included patients suspected of stage IA-IIIB lung cancer. After diagnostic evaluation of biopsies taken during a cone-beam computed tomography (CBCT)-guided navigation bronchoscopy, ^{99m}Tc-nanocolloid and Iomeron were injected in and/or around the tumor. A Pioneer Plus radial ultrasound (US) catheter (Philips Medical) harboring a 24G needle was used to visualize the tumor and perform US-guided injections in real-time. Subsequently, CBCT and single photon emission computed tomography (SPECT/CT-) scans were performed to identify locoregional TDLNs between 2-6 hours post-injection.

Results: Thirty-one patients were enrolled with a median tumor size of 18.7 mm. A median of two depots of ^{99m}Tc-nanocolloid (range, 1-4) with a median volume of 0.43 ml were injected. Additionally, 15 patients also received a median of one injection (range, 1-4) of 0.3-1.0 ml of Iomeron 300 to determine iodinated contrast dissipation on fluoroscopy- and CBCT-imaging. The IVUS-guided Pioneer Plus re-entry catheter could visualize 96.7% of tumors on US for injection guidance. In 32.3% of patients, a TDLN was visible on SPECT/CT-imaging. **Conclusions:** Identifying a TDLN on SPECT and CT after a navigation bronchoscopy mediated endobronchial injection of radiotracers is technically feasible, but requires further study and optimization.