

## AB014. Modified virtual-assisted lung mapping (VAL-MAP) thoracoscopic surgery

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**Background:** Virtual assisted lung mapping (VAL-MAP) is a technique for bronchoscopic lung marking developed to assist in navigational lung resection. It can be utilized for nodule localization and the segmental identification. We presented our initial experience of modified VAL-MAP thoracoscopic surgery.

**Methods:** Markings with India Ink were bronchoscopically made before surgery using virtual bronchoscopy system (LungPoing) without fluoroscopy guidance. Post-VAL-MAP computer tomography (CT) scans localizing the actual markings. All data on patients, markings and outcomes were retrospectively collected, and the contribution of VAL-MAP to the operation was graded by the surgeon.

**Results:** From March 2017 to July 2017, fifteen consecutive patients received modified VAL-MAP marking procedure before thoracoscopic segmentectomy. Twelve patients also received preoperative CT-guided percutaneous localization after VAL-MAP. Of the 63 marking attempts made in 15 patients, 40 (63.4%) were identified and contributed to the surgery. No clinically evident complications were associated with the procedure. A total of 15 segmentectomies were thoracoscopically conducted for 10 primary lung adenocarcinomas and 4 benign diseases.

**Conclusions:** The combination of modified VAL-MAP (without fluoroscopy) and CT-guided percutaneous localization contribute to precise thoracoscopy surgery.

**Keywords:** Virtual assisted lung mapping (VAL-MAP); bronchoscopy; segmentectomy; video-assisted thoracoscopic surgery (VATS)

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