

# INPLASY

## Preoperative localization for pulmonary nodules: a meta-analysis of coil and liquid materials

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### ADMINISTRATIVE INFORMATION

**Support** - None.

**Review Stage at time of this submission** - Preliminary searches.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202380070

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 16 August 2023 and was last updated on 16 August 2023.

### INTRODUCTION

**Review question / Objective** In this meta-analysis, we aim to compare the safety and clinical effectiveness between computed tomography-guided coil and liquid material localization for patients with pulmonary nodules.

**Condition being studied** Both coil and liquid materials have been used to localize the pulmonary nodules before video-assisted thoracic surgery. However, the relative outcomes are not clear.

### METHODS

**Search strategy** (((coil) OR (microcoil)) AND (((glue) OR (lipiodol)) OR (blood)) OR (indocyanine green)) OR (blue))) AND (((lung) OR (pulmonary))) AND (nodule).

**Participant or population** Patients with PNs which were prepared to be resected by VATS.

**Intervention** Coil localization.

**Comparator** Liquid material localization.

**Study designs to be included** Comparative studies.

**Eligibility criteria** Studies eligible for inclusion met the following criteria:(a) Types of studies: comparative studies;(b) Patients: patients with PNs which were prepared to be resected by VATS;(c) Types of interventions: CT-guided coil versus liquid materials localization before VATS;(d) Languages: not limited.Studies were excluded if they were: (a) single-arm studies; (b) studies which used bronchoscopy-guided localization;(c) studies which used modified coil localization.

**Information sources** PubMed, Web of science, and Wanfang.

**Main outcome(s)** Successful localization rate.

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**Quality assessment / Risk of bias analysis** All studies included in the present meta-analysis were retrospective in nature. Their quality was assessed using the Newcastle–Ottawa scale (NOS), which contains selection (4 scores), comparability (2 scores), and exposure (3 scores) criteria. A NOS score  $\geq 7$  was considered as the indicator of a high-quality study.

**Strategy of data synthesis** The data of the endpoints were pooled using RevMan v5.3. For dichotomous variables, pooled odds ratios (ORs) with 95% confidence intervals (CIs) were calculated, whereas continuous variables were compared using mean difference (MD) values with 95% CIs. The I<sup>2</sup> and Q tests were used to assess heterogeneity, and I<sup>2</sup> > 50% was considered as the indicator of significant heterogeneity. Random-effects or fixed-effect models were used when significant heterogeneity was observed or not. Sensitivity analyses were performed via a “leave one out” approach to detect sources of heterogeneity. Publication bias was analyzed using Egger’s test with Stata v12.0. P < 0.05 was considered statistically significant.

**Subgroup analysis** Subgroup analysis will be performed based on different liquid materials.

**Sensitivity analysis** Yes.

**Country(ies) involved** China.

**Keywords** Localization; Pulmonary nodules; Coil; Liquid.

**Contributions of each author**

Author 1 - Zhen-Hua Sun.

Author 2 - Hui Chen.

Author 3 - Jie Su.

Author 4 - Qing-Lan Sun.