

INPLASY

Preoperative CT-guided localization for pulmonary nodules: a meta-analysis of soft hook-wire and coil localization

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Meng, QK; Wang, JQ; Wang, X; Sun, QL.

Corresponding author:

Qinglan Sun

a18615199880@163.com

Author Affiliation:

The Second Affiliated Hospital of Shandong University of Traditional Chinese Medicine.

ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Preliminary searches.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202490124

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 27 September 2024 and was last updated on 27 September 2024.

INTRODUCTION

Review question / Objective To compare the clinical efficacy of computed tomography (CT)-guided soft hook-wire and coil insertion as approaches to preoperative pulmonary nodule (PN) localization.

Condition being studied Preoperative CT-guided localization for PNs has been commonly used when performing the video-assisted thoracic surgery (VATS) resection. However, the optimal localization material is still unknown.

METHODS

Search strategy (((coil) AND (((localization needle) OR (anchored needle) OR (Sens-cure needle))) AND (localization)) AND ((lung nodule) OR (pulmonary nodule))).

Participant or population Patients with high-risk PNs.

Intervention CT-guided soft hook-wire localization.

Comparator CT-guided coil localization.

Study designs to be included Comparative studies.

Eligibility criteria 1. Comparative studies; 2. CT-guided soft hook-wire vs. coil localization; 3. No limited in language.

Information sources PubMed, Cochrane Library, and Wanfang.

Main outcome(s) Localization successful rate.

Additional outcome(s) Duration of localization, the incidence of localization-associated complications, surgery types, the technical success of wedge/ segmental resection procedures, and final diagnoses.

Data management RevMan 5.3.

Quality assessment / Risk of bias analysis

Assessment for the randomized controlled trials was carried out using the Cochrane risk-of-bias tool and were assigned a high, low, or unclear risk of bias for each of the following: detection, performance, attrition, reporting, selection, and other bias.

The Newcastle-Ottawa scale (NOS) was used to evaluate all non-RCT studies by assigning them points based upon selection, comparability, and outcome criteria (4, 2, and 3 points, respectively). A study was regarded as outstanding quality if it had a NOS score ≥ 7 .

Strategy of data synthesis Data from all endpoints were pooled using RevMan v5.3. Mean differences (MDs) with 95% confidence intervals (CIs) were used for the analysis of continuous variables, whereas odds ratios (ORs) with 95% CIs were used for the analysis of categorical variables. The heterogeneity of the study was evaluated using the I² statistic and Q test, with I² > 50% denoting significant heterogeneity. Through the random-effects models, the pooled analyses in the context of significant heterogeneity were conducted, whereas fixed-effects models were used when no significant heterogeneity was present. A leave-one-out approach was used to conduct sensitivity analyses aimed at identifying studies that contributed to detected heterogeneity. The risk of publication bias was assessed using funnel plots, with the risk considered low when all studies fit within the funnel plot. When this was not the case, studies were further analyzed using Egger's test in Stata v12.0.

Subgroup analysis Yes.

Sensitivity analysis Yes.

Language restriction None.

Country(ies) involved China.

Keywords Soft hook-wire; Coil; Pulmonary nodule; Localization.

Contributions of each author

Author 1 - Qingkun Meng.

Author 2 - Junqiang Wang.

Author 3 - Xi Wang.

Author 4 - Qinglan Sun.