

Pulmonary nodule localization using indigo carmine and lipiodol mixture via bronchoscopy

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Background/Aims: Preoperative marking is necessary in thorascopic wedge resections of lung nodules expected to be invisible or nonpalpable during surgery. To localized these lesions, many methods have been developed. Of some methods to approach the lesions, percutaneous localization is limited in the availability of puncture sites and needs computed tomography. Of the materials to expose the lesions, exposure of radiation is unavoidable in the use of radio-opaque materials. Herein, we performed pulmonary nodule localization using gel formation of indigo carmine and lipiodol via transbronchial (GILT) approach.

Methods: GILT was performed in 23 patients with nodules less than 2cm located in distance to the nearest pleural surface between 0.5cm and one third of diameter, or non-palpable or invisible nodules. Nodule size, depth from the pleura, radiologic and pathologic findings, depth from the margin were retrospectively reviewed.

Results: The mean nodule size, depth from the pleura, depth from the margin were 1.57 ± 1.91 cm (range: 1-4 cm), 0.7 ± 2 cm (range: 3-20 cm), 1.2 ± 0.9 days (range: 0.8-2.5 cm) 3.17 ± 1.91 days (range: 3-20 cm), respectively. The pathologic findings of nodules were 27 malignancy (23 primary lung cancer, 4 metastatic renal cell cancer), 3 benign (Table 1). No post-procedural complications were recorded.

Conclusions: GILT was a safe and useful methods for preoperative pulmonary nodule marking with high successful localization rate without exposure of radiation.

Table 1. Pathologic findings

Diagnoses	No.
Benign disease	3
Chondroid hamartoma	1
Plasma cell granuloma	1
Anthraxofibrotic nodule	1
Primary lung cancer	23
Adenocarcinoma	18
Small cell carcinoma	3
Large cell neuroendocrine carcinoma	2
Renal cell carcinoma	3