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学位の種類	博士 (医学)
報告番号	甲第1522号
学位記番号	第1093号
氏名	鈴木 一史
授与年月日	平成 28年 3月 25日
学位論文の題名	Usefulness of CT-guided hookwire marking before video-assisted thoracoscopic surgery for small pulmonary lesions J Med Imaging Radiat Oncol 2014; 58(6): 657-662
論文審査担当者	主査： 中西 良一 副査： 新実 彰男, 芝本 雄太

Abstract

The aim of this study was to evaluate the technical and clinical efficacy and safety of CT-guided hookwire marking before video-assisted thoracoscopic surgery (VATS) for small pulmonary lesions. This procedure was performed on 161 lesions in 154 patients (75 men and 79 women; median age, 62 years; age range 23–89 years). Medical records and images were reviewed, and the technical success rate, surgical success rate and complications were evaluated. Technical success was defined as successful hookwire marking at the target site without marker dropping before VATS. Surgical success was defined as negative surgical margins on pathological examination after VATS. There were 97 nodules and 64 ground-glass opacities, and their mean size was 9.8 mm (range 2–34). The technical success rate was 97.5% (157/161). In three of the four failed cases, another hookwire marker was placed, and in the remaining case, VATS was performed without a marker. The surgical success rate was 98.1% (158/161). In the three failed cases, the margin was positive, so lung lobectomy was performed in one case, and the other two cases were observed carefully. Complication rates were as follows: pneumothorax, 37.9% (61/161); focal intrapulmonary haemorrhage, 41.6% (66/161); haemoptysis, 0.6% (1/161); haemothorax, 0% (0/161); air embolism, 0.6% (1/161); dissemination, 0% (0/161); and death, 0% (0/161). CT-guided hookwire marking appears to be useful for VATS, but the procedure may, although rarely, cause severe complications such as air embolism.