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**TYPE : ORAL PRESENTATION**

**CATEGORY : NON - VASCULAR INTERVENTION**

## TITLE

Early detection of pneumothorax after lung radiofrequency ablation on chest radiograph by using artificial intelligence


## BACKGROUND

To retrospectively evaluate usefulness of artificial intelligence (AI) assistance to detect pneumothorax early after lung radiofrequency ablation (RFA) on chest radiograph.

## METHODS

Between February 2016 and October 2023, a total of 355 lung RFA sessions were performed, and chest radiograph was acquired within 3 hours. 94 radiograph images were excluded from this study due to chest drainage placement immediately after RFA (70 sessions) or lack of follow-up CT images (24 sessions). Detectability of pneumothorax was evaluated on the remaining 261 chest radiographs (73.5%, 261/355). Presence of pneumothorax was confirmed by CT within 2 days after RFA. A 1-year experienced radiology resident checked the presence of pneumothorax without and with AI assistance. Sensitivity, specificity, and accuracy were compared without and with AI assistance.

## RESULT

Sensitivity, specificity, and accuracy were 50.0%, 97.9% and 84.3% without AI assistance. Although specificity was same (98.4%, p=0.99), significant improvement was observed in both sensitivity (52.7%, p<0.001) and accuracy (85.4%, p=0.002) with AI assistance.

## CONCLUSIONS

AI helps to improve detectability of pneumothorax early on chest radiograph after lung RFA.



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