

Background

Deep lung nodules pose a challenge as they cannot be palpated nor seen, often leading to unnecessary lobar resections when a segmental approach may suffice.

Recent studies support sublobar resection for peripheral non-small lung cancers(NSCLC) ≤ 2 cm with node-negative disease, showing comparable disease-free survival to lobectomy.

Objectives

This case report highlights the combined use of intraoperative navigational bronchoscopy and indocyanine green(ICG) for robotic deep lung nodule localization, enabling a sublobar resection.

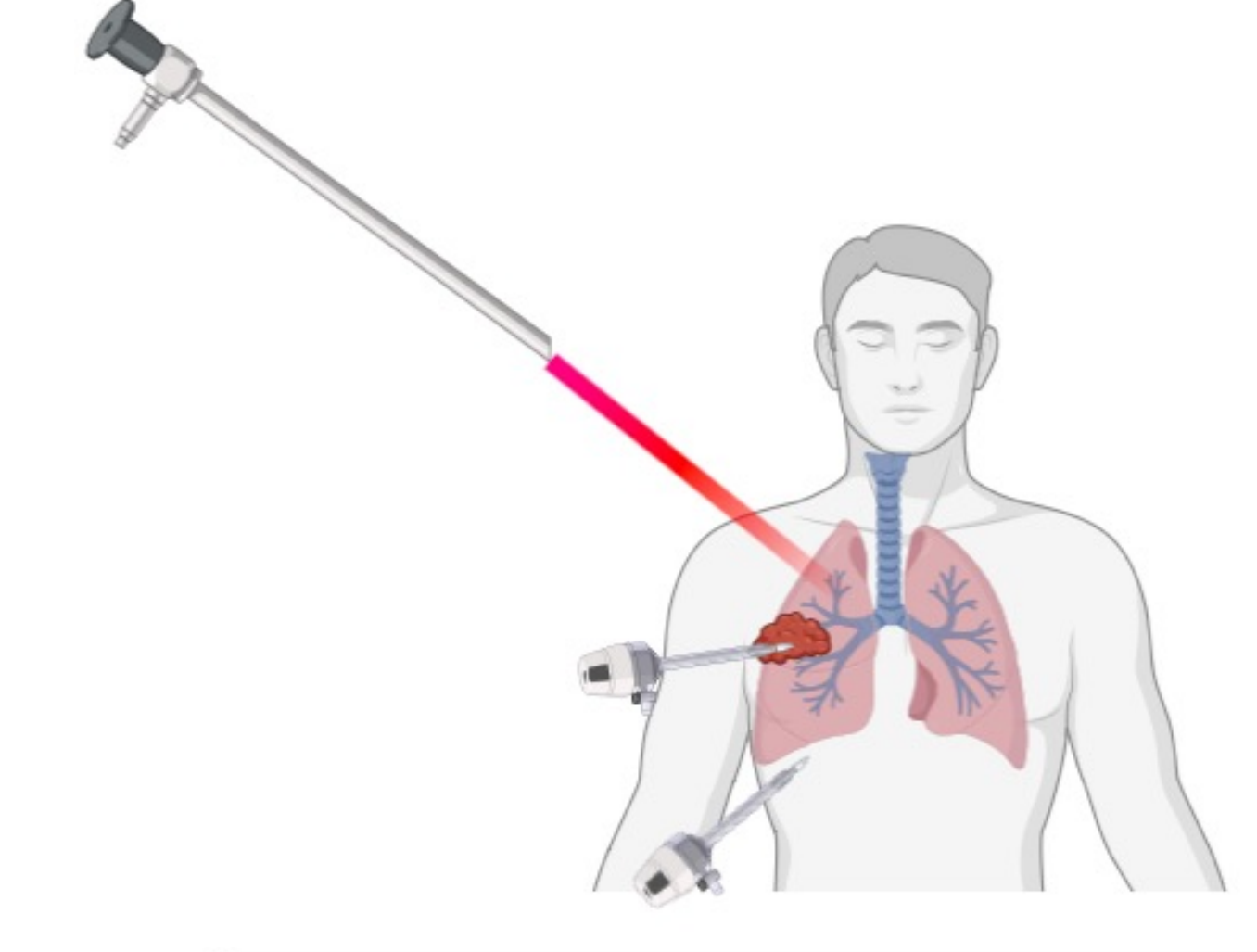
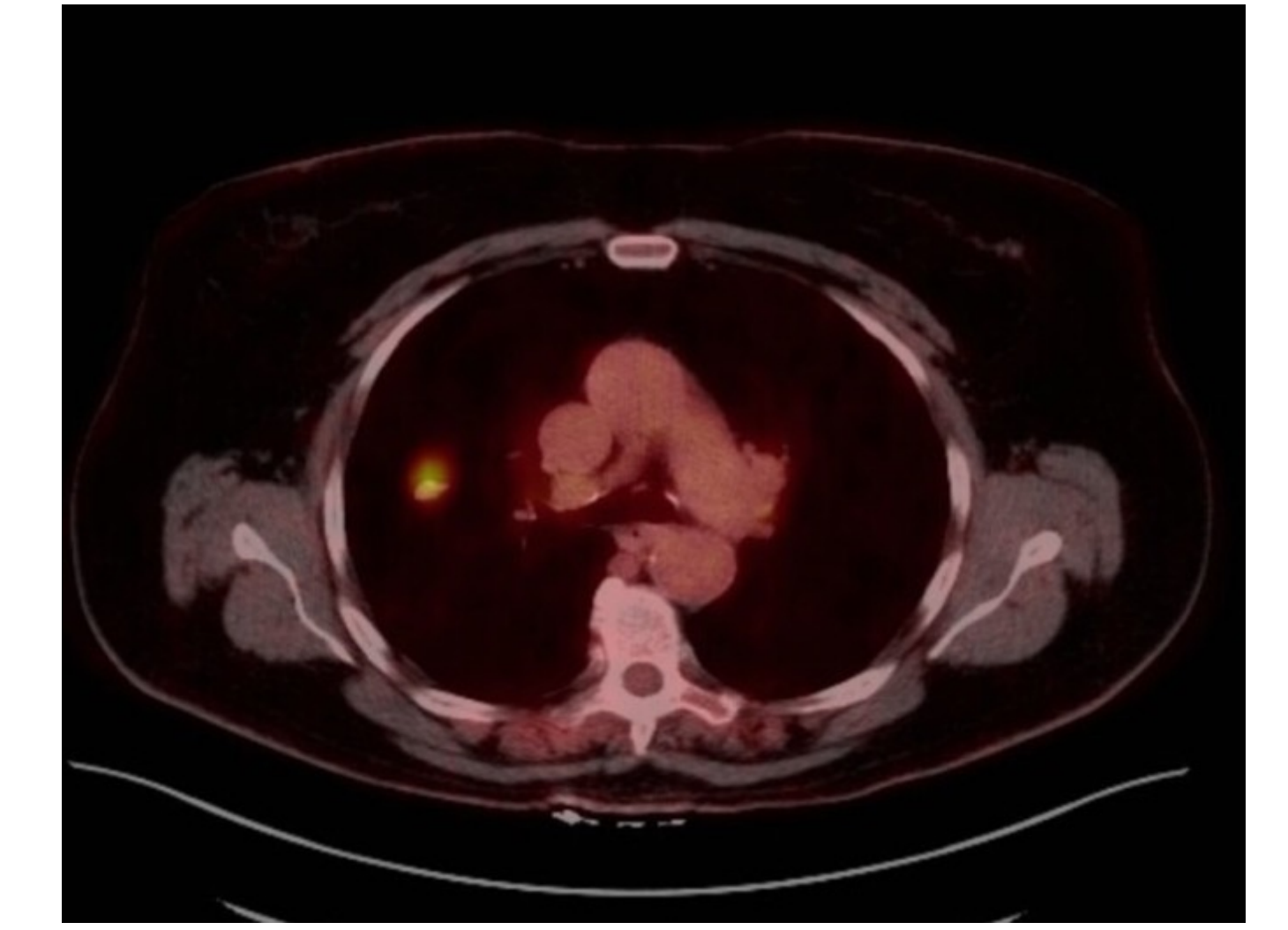
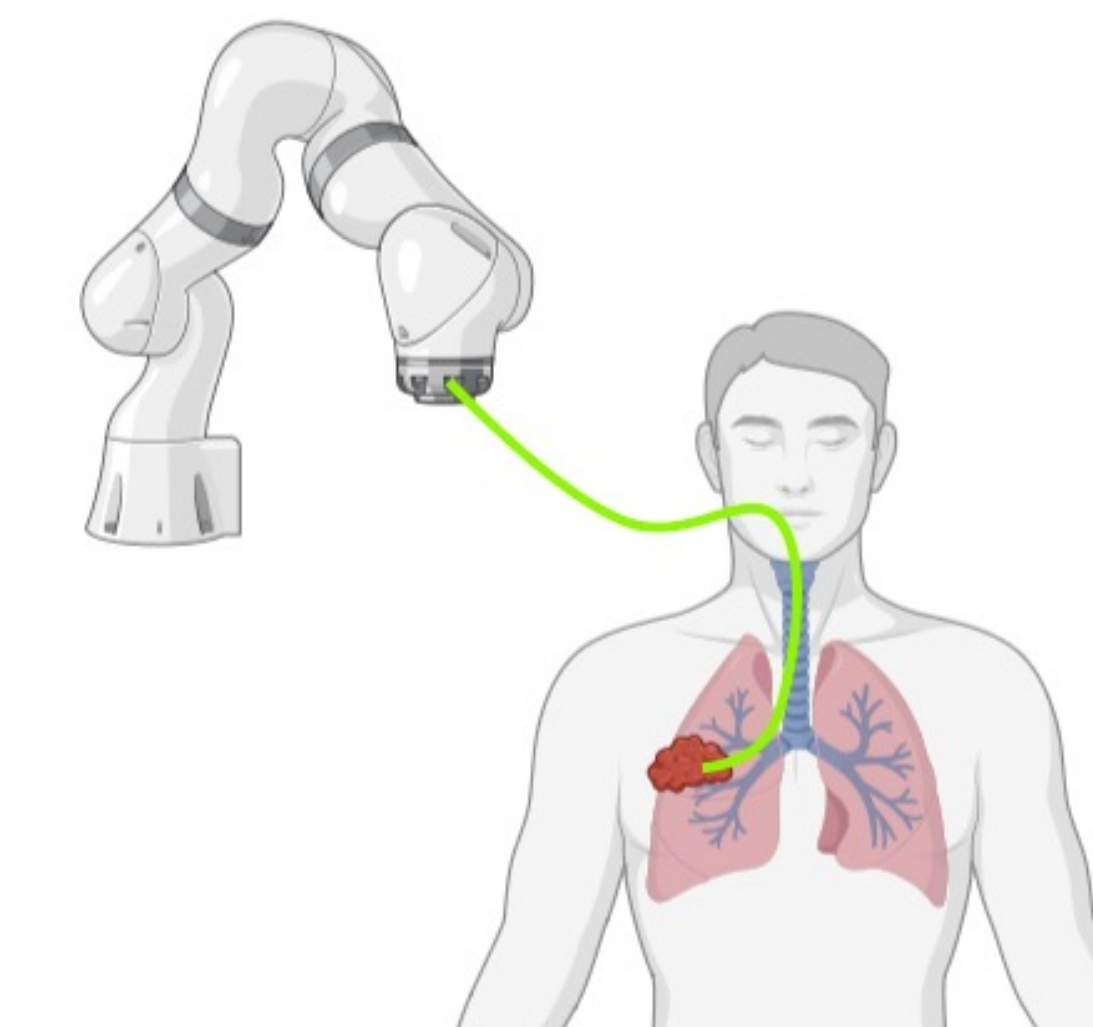
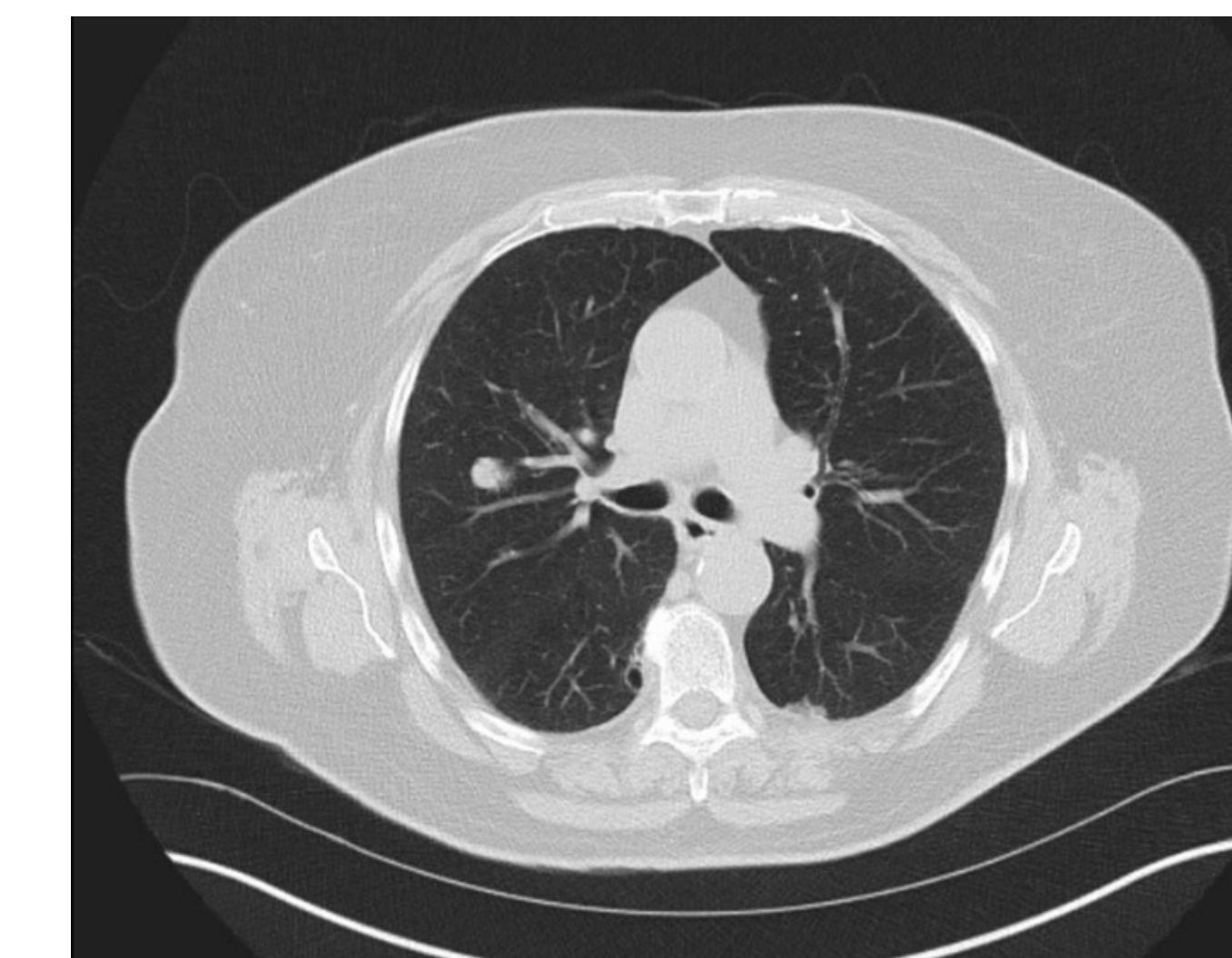
Case Scenario

78-year-old female, diagnosed with biopsy-proven stage IA squamous cell carcinoma(9x13x12mm) in the right upper lobe

Methods

1. Patients undergo the standard of care workup for the lesion in question
2. ION robotic-assisted bronchoscopy system(Intuitive Surgical, Inc.) utilized the patient's computed tomography(CT) scan to localize the lesion.
3. After confirming the biopsy needle's location in the lesion through CT, ICG was injected into deep lung nodules.
4. The da Vinci Xi Surgical System(Intuitive Surgical) employed the Xi Firefly system to detect fluorescence from the ICG injected into the tumor, localizing the deep lung nodules and facilitating the resection.
5. Fluorescence-guided sublobar resection of lesion in question

Results



Conclusion

Combining navigational bronchoscopy for tumor localization with ICG and fluorescence-guided surgery may allow for a more parenchymal-sparing resection of deep lung nodules.