



### Use of Van Gogh during a biopsy of a lung nodule in the left upper lobe with subtle increase in ground-glass opacity (GGO) **reduces time to diagnosis**

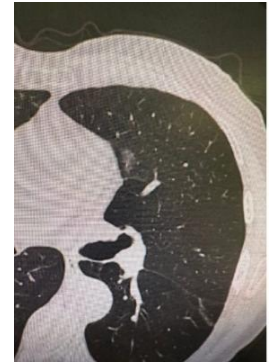
#### Presentation

A 79 year old non-smoker with incidental finding of nodules was being followed through the Lung Cancer Screening Program. Upon review of recent CT, it was noted that one nodule had begun to change in appearance from hazy to slightly denser.

#### Procedural Workup

Due to the very subtle finding on CT (figure 1), the nodule would be difficult to biopsy. A robotic navigational bronchoscopy with dye localization and fiducial placement was ordered. Due to scheduling constraints, the procedure was scheduled later in the day when the *pathologist was not available*.

During the procedure the tissue was collected but was too limited to do a frozen section (figure 2). The surgeon used the VanGogh system to determine tissue adequacy and *within 40 seconds*, the pictures were remarkable and highly suspicious for malignancy (figure 3). The surgeon proceeded with a trisegmentectomy and mediastinal lymph node dissection.



**Fig.1** Lung CT with enlarging ground glass opacity in the upper left lobe

#### Outcome

Final pathology revealed a *0.8 cm invasive pulmonary adenocarcinoma with clear margins*, all lymph nodes were negative. Pathological staging of pT1aN0.

"If we didn't have Van Gogh, we would have brought the patient back to the OR for a second definitive surgery because pathology would not have been available until one week later.

We were able to take care of the patient within the same operative session, saving the patient a month to 6 weeks of anxiety and additional procedures."



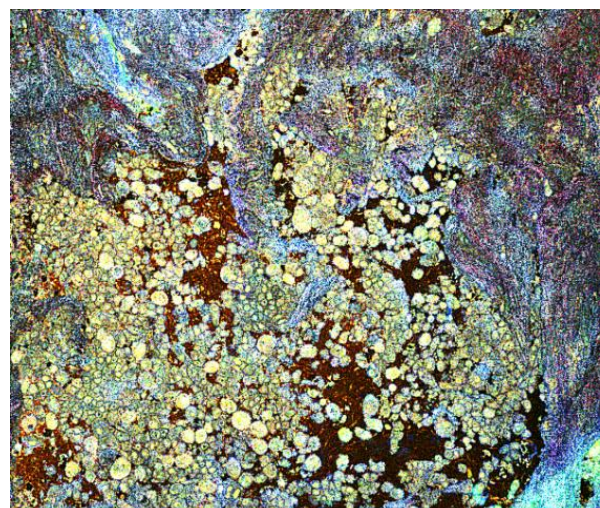
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**Fig.2** ICG localization of 8 mm GGO via robotic navigation bronchoscopy



**Fig.3** Van Gogh imaging confirmed presence of enlarged pleomorphic cells with high intensity, enlarged nucleoli within abnormal cells