Case Study

CT-Guided Thoracic Mass Biopsy using the Cube Navigation System

Summary

Biopsy of a large thoracic mass in a patient with multiple previously identified tumors and a history of smoking. Previous endobronchial biopsy obtained during bronchoscopy was not diagnostic.

Figure 1: Initial scan of the suspected metastasis

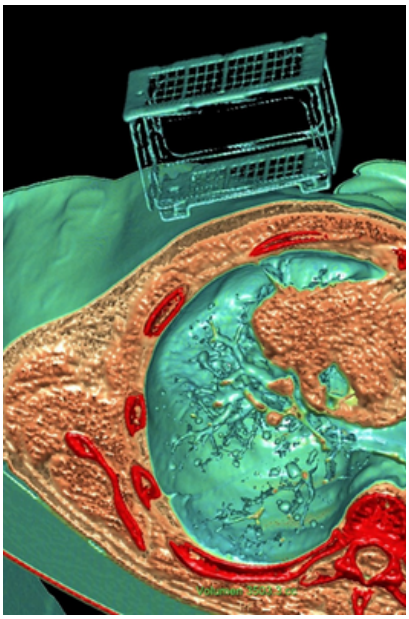

Figure 2: 3D view of the Access Cube placed at the thoracic wall for guidance of percutaneous biopsy

Patient Profile
70 year old male

- Arterial hypertension
- Chronic nicotine abuse
- Papillary carcinoma first diagnosed 2011, distal esophageal carcinoma diagnosed 2017

Figure 3: Final scan with biopsy needle on target

Procedure
Patient presented experiencing right thoracic pain symptoms. Diagnostic CT of the thorax showed a right thoracic mass with infiltration of the 2nd, 3rd and 4th ribs, as well as the thoracic wall, with a maximum transverse diameter of approximately 6 cm and a second ventral para-mediastinal mass of 5.5 cm in the ventral upper lobe (Figure 1). Contralaterally an approximately 3cm star-shaped mass in the upper lobe was found with suspicion of malignancy. An interdisciplinary discussion of the findings to clarify the etiology resulted in the recommendation of a CT-guided biopsy.

Result
Using the Cube Navigation System with an Access Cube to plan an exact route, the sample was successfully collected without damaging the surrounding tissue (Figure 3).

The biopsy was performed without complications. Histopathological findings revealed infiltrates of an adenocarcinoma, determined to be of gastrointestinal origin (a metastasis of the primary tumor, no secondary carcinoma).

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