

Clinical Image

Successful Diagnostic Mediastinal Cryobiopsy by Transesophageal Endoscopy Without Using the Needle Knife



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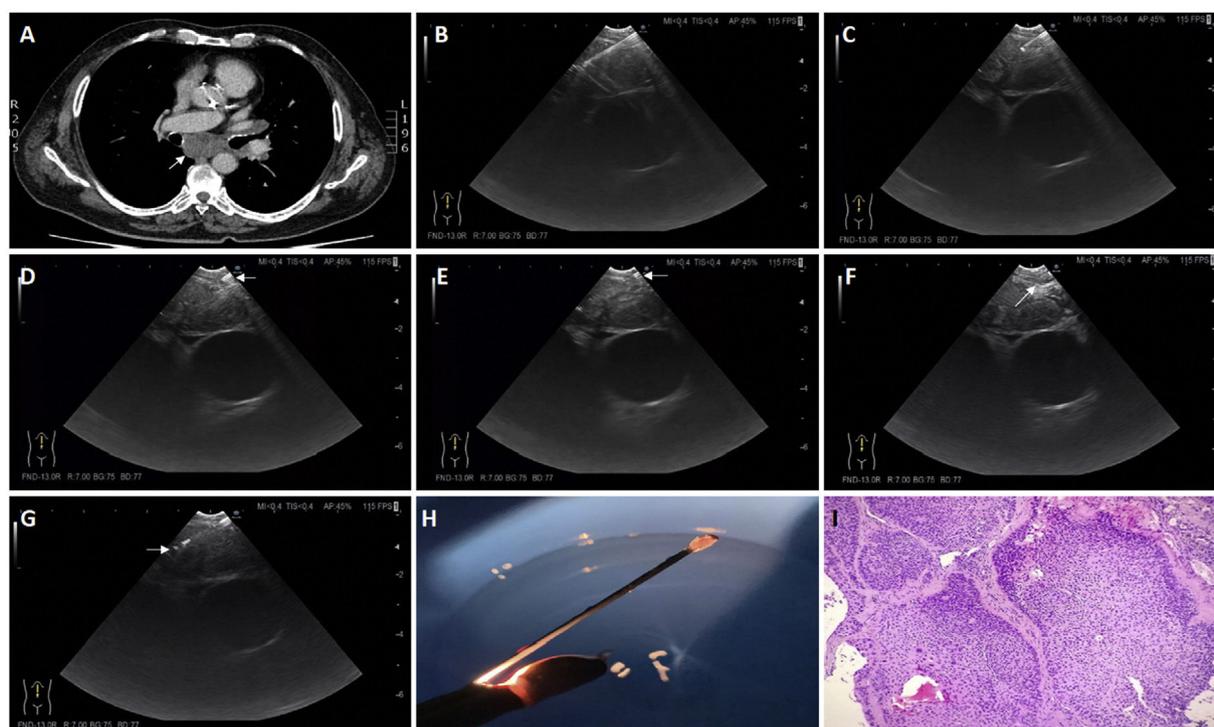


Fig. 1. (a) CT showing an enlarged subcarinal lymph node localized by EUS-B. (b) EUS-B image showing the 22-G needle (SonoTip TopGain; Medi-Globe) inside the lymph node. (c–e) We perform 10–12 passes shortening from distally to proximal the length of the needle to create a pathway with the aim of breaking the mucosa, submucosa, and the lymph node capsule. (f) Broken lymph node capsule prior to introduce the 1.1 mm cryo-probe (Erbecryo 20402–401). (g) EUS-B image showing the tip of the 1.1 mm cryo-probe within the lymph node. (h) Pentax EBUS scope (EB-1970UK) with 1.1 mm cryo-probe in the working channel. The tip of the probe has the lymph node tissue obtained by cryobiopsy. (i) Microscopic image of cryobiopsy (10 \times) showing a well-preserved architecture compatible with squamous cell lung carcinoma.

We report the case of a 67-year-old man admitted to our hospital due to respiratory failure and weight loss. Chest CT showed a 4 cm right upper lobe mass, an enlarged subcarinal lymph node and liver metastases (Fig. 1a). As performing a conventional EBUS posed a high risk due to the patient's respiratory failure, we decided to take the esophageal route (EUS-B) with the aim of obtaining a histological sample for molecular and immunohistochemical analysis using a 1.1 mm cryo-probe (Erbecryo 20402–401, Tubingen, Germany). The station 7 lymph node was localized by EUS-B and a fine needle aspiration (FNA) was performed using a 22-G needle (SonoTip TopGain; Medi-Globe,

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Rohrdorf, Germany) (Fig. 1b). We created a pathway (tunnel) from outside the lymph node by shortening the length of the needle, with the aim of breaking the mucosa, submucosa and finally the lymph node capsule, to allow the passage of the cryo-probe into the lymph node to perform the cryobiopsies (Fig. 1c–e). Once the lymph node capsule was broken (Fig. 1f), the cryoprobe was introduced gently under ultrasound guidance (Fig. 1g); once inside the lymph node and positioned in the desired area, the cryo-probe was frozen for 5 s and the EBUS scope and the cryo-probe were taken out as a whole with no complications (Fig. 1h). The puncture sample was suspicious for non-small cell carcinoma due to the significant degree of necrosis present, however, the cryobiopsy sample was optimal to issue a definitive diagnosis (squamous cell lung carcinoma) (Fig. 1i) and perform the necessary molecular and immunohistochemical studies with an estimated tumour cellularity greater than 70% (negative EGFR, PD-L1 <50%, negative for ALK and ROS-1). During the patient follow-up there were no complications associated with the technique (no pneumothorax, no hemoptysis, no pneumomediastinum, no data of infection). Huang et al. published a case report in which they performed a transesophageal cryobiopsy to diagnose Hodgkin's lymphoma. In their procedure, the esophageal wall was first cut with a needle knife prior to introducing the cryo-probe,¹ unlike our method, where we only use the 22-G needle.

Conflict of Interests

The authors state that they have no conflict of interests.

Appendix A. Supplementary material

Supplementary material associated with this article can be found in the online version available at [doi:10.1016/j.arbres.2023.06.014](https://doi.org/10.1016/j.arbres.2023.06.014).

Reference

1. Huang ZS, Zhou D, Zhang J, Fu WL, Wang J, Wu XL, et al. Mediastinal nodular lymphocyte predominant Hodgkin lymphoma achieved by endoscopic transesophageal cryobiopsy. *Respiration*. 2022;101:190–4, <http://dx.doi.org/10.1159/000518598> [Epub 01.09.21; PMID: 34515245].