A rare complication of an endobronchial ultrasound-guided intranodal forceps biopsy (EBUS-IFB)

M. Oudah*[a] (Dr), K. Diab[a] (Dr), D.Baram[a] (Dr)
[a] George Washington University Hospital, Washington, D.C, UNITED STATES
* m_oudah22@hotmail.com

THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, DC

Background

Endobronchial ultrasound-guided intranodal forceps biopsy (EBUS-IFB) is a novel technique used simultaneously after a transbronchial needle aspiration (TBNA)

First, EBUS-TBNA is performed of a lymph node or other parabronchial lesion with serial aspiration for cytology. After several samples and while the needle is within the target, the sheath is maximally extended through the scope and advanced into the lesion dilating a pathway through which a forcep can be advanced.

After sheath dilation and using visual and/or ultrasound localization, a forcep is advanced into this orifice and advanced under ultrasound guidance into the lymph node. Forcep biopsies are obtained and sent for histologic sampling.

This technique has been used with various needles sizes and often miniforceps (1.0mm or 1.2mm). In our center, we have been using Olympus Vizishot and Vizishot2 needles and have been using the Boston Scientific Radial Jaw 4 (M00515180) measuring 1.8 mm.

We present the first case of a 22-gauge Vizishot™ needle breaking off during sheath dilation for path formation.

Case Description

A 51-year-old man, never-smoker, presents with:
- Generalized weakness
- 30-pound unintentional weight loss
- Hypercalcemia at 13.4 mg/dL

Positron emission tomography (PET) scan:
- Extensive mediastinal and hilar adenopathy with increased uptake up to 7.9 max SUV

Due to suspicion of sarcoidosis or malignancy
EBUS with TBNA and IFB were performed
- TBNA: stations 7 and 11L
- IFB: Station 11L as it had the largest diameter

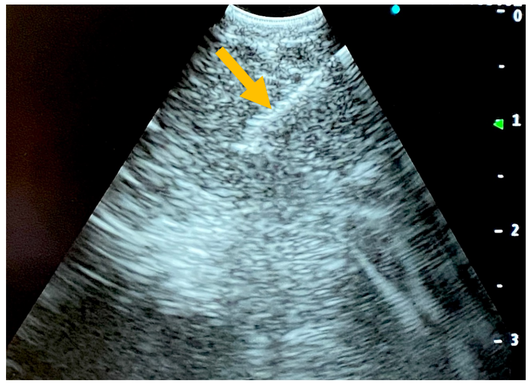

Figure 1: A broken needles seen in Station 11L lymph node [yellow arrow]

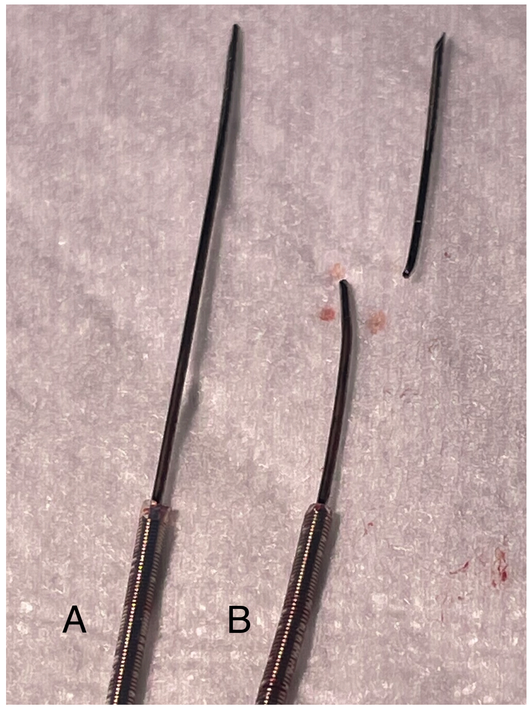

Figure 2:
[A] An intact 22-gauge Vizishot™ needle
[B] The broken 22-gauge Vizishot™ needle retrieved from the patient 11L lymph node

Procedure

EBUS-TBNA was performed at Station 11L using a Olympus 22ga Vizishot and material sent for study. Additional passes were performed with sheath dilation.

On the fifth needle passage, the needle was noted to fracture within the lymph.

The remnant was visible by EBUS without any portion visible within the airway to allow easy retrieval.

Boston Scientific Radial Jaw 4 forceps were inserted via the track under EBUS guidance but was unsuccessful at grasping the fragment.

A new path was created using another 22ga Vizishot needle more proximally, and the forcep was able to grasp the needle fragment under EBUS guidance.

The tip was retracted until it was partially within the airway and then could be removed under direct vision with a regular bronchoscope.

EBUS confirmed no residual foreign body within the node.

There were no post-procedure complications.

Results

Biopsy:
- Non-necrotizing granulomas
- Negative for infection or malignancy

He was started on prednisone therapy for the diagnosis of pulmonary sarcoidosis.

Discussion

EBUS-IFB sheath dilation can be performed with various sizes of needle.

Our case shows a potential complication of needle fracture when using smaller diameter needles during sheath dilation.

Further studies are needed to assess the efficacy and safety of various endobronchial needles for EBUS-IFB procedures.

References

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