Type of article: Letter to Editor.

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- Letter to the Editor -

Sir, Fracture and migration of central venous catheter is a potentially dreadful complication which requires early recognition and prompt intervention. Point of care ultrasonography (POCUS) is becoming an important tool for early localization of foreign bodies in the body cavities and its subsequent removal [1,2]. It averts the need for X-ray or computed tomography (CT) imaging and the associated radiation exposure. Embolization of fractured venous catheter in external jugular vein (EJV) has been reported during patient movement, although a valve present at the end of the EJV halts this [3]. Its migration during the lag period between its identification and retrieval process causes great difficulty in its removal. POCUS enables real-time detection and correct localization just before the surgical retrieval.

An 84-year-old male patient with diagnosis of pneumonia in the post-chemotherapy phase for acute myeloid leukemia (AML) was shifted to the intensive care unit for intermittent non-invasive ventilation. He had a 16-gauge external jugular venous catheter in situ, in view of difficult peripheral venous access. During its removal, the catheter broke with the entire sheath inside the vein. Bedside POCUS in the ICU located the catheter sheath (Fig. 1A). Surgical removal of the broken piece of the catheter was planned. Its position was again accurately confirmed by POCUS in the operation theatre just before its retrieval and was removed successfully under local anesthesia and monitored anesthesia care (Fig. 1B). Post-retrieval ultrasound was done to ensure the absence of remnants.
Various scenarios have been reported in relation to fractured intravenous catheters. Doley et al. [4] have reported retrieval of the migrated fragment of the implanted central venous catheter through the neck surgically under fluoroscopic monitoring after its initial detection by X-ray imaging. There have been reports of central venous catheter fracture and embolization to heart chambers and subsequently to pulmonary vessels due to delay in detection and failure to retrieve early [5]. Fluoroscopy with X-ray is considered the gold standard to retrieval of fractured catheters [4]. We suggest the following advantages of POCUS –

1. Prompt localization of catheter position in case of suspected dislodgement, thus avoiding further displacement.
2. It avoids the need for radiological imaging like computed tomography (CT) and shifting of the patient to the CT room, which may be difficult in critically ill patients.
3. Real-time imaging during its removal helps to confirm its position, ensures correct site of incision to avoids blind exploration and the risk of vascular injury.
4. It ensures its complete removal after the procedure.
5. To locate thrombus if any and hence guide in taking necessary precautions.
References


Legend for figures
Fig. 1. (A) Out of plane ultrasound view of the neck, the 16-gauge intravenous catheter as a hyperdense image (blue arrow) inside the external jugular vein (EJV). Internal jugular vein (IJV) and the internal carotid artery (ICA) are in the background. (B) Surgical exposure of the external jugular vein and removal of the broken part of the sheath of the 16-gauge catheter (blue arrow).