

## Accidental guide-wire loss during central venous catheterization: A report of two life-threatening cases

Sir,

Medicolegal issues and iatrogenic origin make guide-wire loss during central venous catheterisation an under-reported topic.<sup>[1]</sup> We are reporting our experience of two cases, where the guide wires were retained into the venous system and they could be successfully nonsurgically extracted. A simple measure is also discussed to prevent guide-wire loss for the inexperienced physicians.

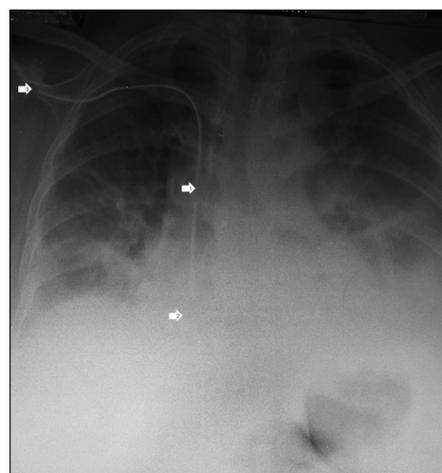
A 40-year-old female was transferred to our intensive care unit (ICU) with severe acute pancreatitis and respiratory distress. During initial management it was noticed that 7.5-Fr central venous catheter (CVC), placed in her right subclavian vein during her prior hospitalization, was nonfunctional. Hence, right-sided internal jugular vein was cannulated. Reviewing her chest X-ray (taken 2 days previously) we were surprised to identify a guide wire along with the first CVC [Figure 1]. The guide wire could be felt after pulling the CVC out for a few centimeters but it seemed to be stuck within the catheter. We fixed the guide-wire CVC assembly with artery forceps and gently pulled the entire assembly intact.

A 60-year-old female patient was brought to the emergency department with respiratory distress and hemodynamic instability. A one-year-experienced physician was asked to place the CVC. During catheter placement, the patient developed an arrhythmia which distracted the operator and the guide wire was lost. A chest X-ray was done [Figure 2] and our critical care outreach team was called. Cardiac monitor showed ventricular tachycardia. She was immediately intubated, femoral vein was accessed and cardiac resuscitation performed. We fixed the guide wire with

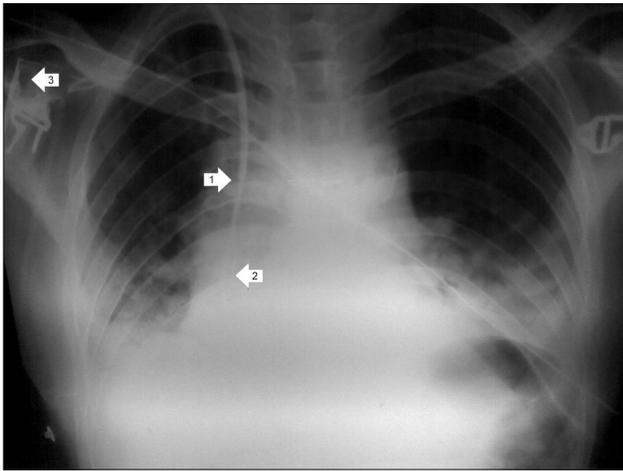
artery forceps, cut the central lumen of the catheter with a blade and removed the entire assembly intact. Patient was successfully resuscitated and transferred to the ICU.

Seldinger technique<sup>[1,2]</sup> is the preferred technique for CVC insertion and intact guide-wire retrieval from the central port with free aspiration of blood is the last step. The technique requires skill, attentiveness and experience to avoid potential adverse effects.<sup>[3]</sup> Schummer *et al.*<sup>[2]</sup> reported that inattentive, exhausted, inexperienced operator and inadequate supervision might be responsible for guide wire loss. Sudden patient movement<sup>[4]</sup> and excessive length of guide-wire insertion are additional factors.<sup>[5]</sup> Predisposing factors in our first case could be an emergent situation leading to haste during the procedure while inadequate supervision, inexperience and distraction were the possible causes in the second case.

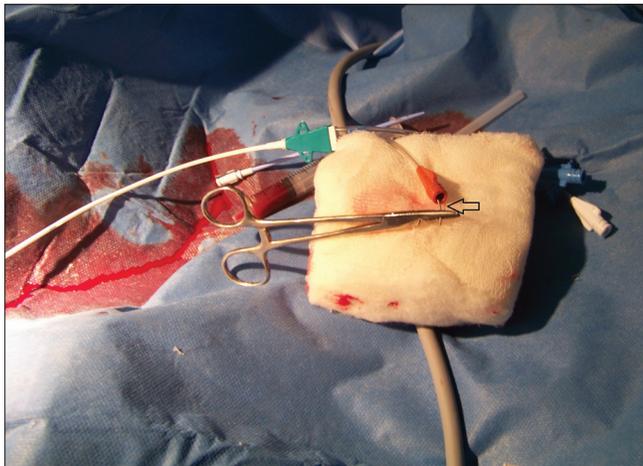
To prevent CVC guide wire loss especially for the inexperienced, unsupervised operators and in emergency situations the authors' advice is to use a mosquito forceps or small artery forceps to fix the non 'J' end of guide wire during dilator use and while sliding CVC into the vein [Figure 3]. This simple technique can prevent guide-wire loss very effectively. Importantly, the operator's nondominant hand remains free and he/she can devote complete attention to the CVC insertion. Essentially, after sliding the CVC into the vein, the guide-



**Figure 1:** Chest X-ray of the patient showing CVC (1), guide wire (2), non-'J' end of guide wire (3). (arrowed)



**Figure 2:** Chest X-ray of patient showing CVC (1), guide wire (2), non-'J' end of guide wire (3). (arrowed)



**Figure 3:** Ghatak's technique to prevent guide-wire retention in central vein by fixing their non-'J' end with mosquito forceps or small artery forceps. (arrowed)

wire and forceps assembly can easily be pulled out of CVC. A good backflow of blood and no resistance to saline flush confirms central lumen free of guide wire and proper placement. Postprocedure, operator and the nurse assistant should confirm the guide wire retrieval in the procedure tray as part of a check-list. Last but not the least, check X-ray is confirmatory for early detection of complications.

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