A novel locked procedure pack was designed to contain the equipment required for completing the procedure after the guidewire should have been removed: suture, suture holder, and antimicrobial dressings" Mariyaselvam et al (2017).

Abstract:

BACKGROUND: Retained central venous catheter guidewires are never events. Currently, preventative techniques rely on clinicians remembering to remove the guidewire. However, solutions solely relying upon humans to prevent error inevitably fail. A novel locked procedure pack was designed to contain the equipment required for completing the procedure after the guidewire should have been removed: suture, suture holder, and antimicrobial dressings. The guidewire is used as a key to unlock the pack and to access the contents; thereby, the clinician must remove the guidewire from the patient to complete the procedure.

METHODS: A randomized controlled forced-error simulation study replicated catheter insertion. We created a retained guidewire event and then determined whether clinicians would discover it, comparing standard practice against the locked pack.

RESULTS: Guidewires were retrieved from 2/10 (20%) standard versus 10/10 (100%) locked pack, n = 20, $P < 0.001$. In the locked pack group, participants attempted to complete the procedure; however, when unable to access the contents, this prompted a search for the key (guidewire). Participants discovered the guidewire within the catheter lumen, recovered it, utilized it to unlock the pack, and finish the procedure. A structured questionnaire reported that the locked pack also improved subjective safety of central venous catheter insertion and allowed easy disposal of the sharps and guidewire (10/10).

CONCLUSIONS: The locked pack is an engineered solution designed to prevent retained guidewires. Utilizing forced-error simulation testing, we have determined that the locked

pack is an effective preventative device and is acceptable to clinicians for improving patient safety.

Reference:

Mariyaselvam, M.Z.A., Catchpole, K.R., Menon, D.K., Gupta, A.K. and Young, P.J. (2017) Preventing Retained Central Venous Catheter Guidewires: A Randomized Controlled Simulation Study Using a Human Factors Approach. Anesthesiology. August 11th. .

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