Scholars Journal of Medical Case Reports **ISSN 2347-6559 (Online)**
Sch J Med Case Rep 2015; 3(12):1163-1164 **ISSN 2347-9507 (Print)**

(An International Publisher for Academic and Scientific Resources) DOI: 10.36347/sjmcr.2015.v03i12.006

Retained guide wire during central venous catheterization

Dr. Mansha Singh[1], Dr.Minakshi Gadhire[2], Dr. Prashant Rao[3], Dr.Mohan Achyut Joshi[4]
[1]Assistant Professor, [2]Associate Professor, [3]Registrar, [4]Professor Department of General Surgery, Lokmanya Tilak Municipal Medical College and Hospital, Mumbai, Maharashtra, India

***Corresponding author**
Dr. Mansha Singh
Email: singhmansha@gmail.com

Abstract: Central venous catheterization is a commonly performed procedure in the intensive care unit that is technically challenging, and associated with several risks and complications. Catheter looping and knotting are known complications of central venous catheterization; however, there are few reports of guide wire-related complications. The most common known complication of a guide wire is cardiac arrhythmias. Here we present a case of in which a guide wire was lost during catheterization in 67 year old male.
Keywords: catheterization, guide wire, cardiac arrhythmias.

INTRODUCTION

Central venous catheterization is a commonly performed procedure in the intensive care unit that is technically challenging, and associated with several risks and complications. Guide wires are routinely used in the Seldinger technique during central venous catheter placement [1]. Catheter looping and knotting are known complications of central venous catheterization; however, there are few reports of guide wire-related complications. The most common known complication of a guide wire is cardiac arrhythmias. Other complications also include looping and knotting, vascular perforation, fragmentation and embolization, and breakage or loss of the guide wire or unrecognized failure to remove the wire. Although intravascular entrapment of a guide wire is rare, this complication needs to be emphasized as it increases morbidity and mortality.

CASE REPORT:

A 67 year old male was admitted in a private hospital for Ludwig's angina with involvement of anterior chest wall. Patient had undergone debridement for the same and was being managed in the Intensive Care Unit. A central venous catheter was attempted to be inserted via the femoral route by a 2nd year surgical resident. During insertion the patient who was drowsy and in sepsis inadvertently moved and the guide wire slipped inside the vein. The patient was immediately shifted to our centre for further management. On arrival patient was on low dose ionotropic support. X-ray showed the retained guide wire extending from the iliac vein upto the IVC (fig 1). ECG did not show any evidence of arrhythmias. Cardiology consult was taken and the patient was shifted to the Cath lab where the guide wire was removed by a snare under fluoroscopic guidance. The procedure was uneventful there were no recorded arrhythmias on ECG monitor and a subsequent echocardiogram did not reveal evidence of new valvular or wall motion dysfunction.

Fig-1: X-ray showing retained guide wire extending from iliac vein upto IVC.

DISCUSSION:

Although uncommon, guide wire retention during central venous catheterization is not unheard of. In New York State, between 2008 and 2009, there were 80 reported cases of retained catheters and guide wires, making them the most commonly reported nonsurgically retained objects [3].

Migration of a guide wire into the circulation can occur from any of the usual CV catheter insertion sites. A complete guide wire may not necessarily produce any symptoms and its loss may remain

unnoticed for long. However, intravascular migration of a broken guide wire has the potential of causing adverse effects like vascular damage, thrombosis, embolism and arrhythmias; embolism from guide wire fragments can be fatal in up to 20% instances. Cardiac tamponade manifesting 3 years after a guide wire loss has been reported as a late complication, highlighting the importance of wire extraction as soon as a diagnosis is made. Retrieval is usually done by interventional radiology using gooseneck snares, endovascular retrieval forceps or Dormia baskets; surgical removal is also reported [4].

A guide wire could potentially be retained in any of the following situations: inadequate supervision, inexperienced operator, distraction, critically ill patient undergoing multiple other procedures and overworked staff. Guide wire removal is solely reliant on the memory of the person who placed the wire. Because there is no check method, there is an increased risk of retention, particularly when there are distractions and competing priorities [1].

In our patient too, these were the main causes, compounded by the sudden movement of our disoriented patient. Expert operator skills and compliance with the catheterisation protocol are mandatory to prevent this complication. Firmly holding on to the tip of the guide wire at all times during catheterisation is the mainstay of prevention. Prior sedation of disoriented patients may help achieve a smoother cannulation though sedatives need to be used cautiously in critically ill patients

REFERENCES:

1. Baig M, Malik A, Al-Taweel A, Elder M; An Incidental Complication of Central Line Catheter Placement: Retention of a Guide Wire Cath Lab Digest, 2013; 21(3):52–3;
2. Williams, Tamara L.Bowdle, Andrew Winters T, Bradford D.Pavkovic, Stephen D; Guide wires Unintentionally Retained During Central Venous Catheterization The Journal of the Association for Vascular Access , 19(1): 29 – 34.
3. Quality & Safety. A Newsletter from the New York State Department of Health.Office of Health Systems Management. Winter 2011; 5(1):1-10.
4. Wadehra A, Ganjoo P, Tandon MS; Guidewire loss during central venous cannulation. Indian Journal of Anaesth 2010; 54:587-8.