
Yet another lost guide wire

Sir,

Central venous catheterization (CVC) is a routine technique used in the pediatric health care setup for various purposes. One of the rare complications of this procedure is the intravascular loss of a guidewire, which may lead to various life-threatening consequences. We present a case of a retained guidewire that was introduced through the femoral vein. Point of care ultrasonography was used during its retrieval.

A 6-month-old male child was referred to the emergency room from another hospital with a retained guidewire in the right femoral vein for 5 days. He was being treated for pneumonia and right femoral venous cannulation was attempted during management. Although he was carrying a radiological film showing the guidewire, apparently no attempt was made to retrieve it as they were waiting for the child to recover from his illness. Then he was referred to our center.

A fresh X-ray revealed a straight wire extending from the right groin to the right supraclavicular region [Figure 1a]. Interestingly, the tip of the guidewire was straight and not curved.

The child was afebrile and all routine investigations were within normal limits. Keeping in view the position of the wire and the possible complications, it was decided to remove it under general anesthesia. After the institution of routine monitoring in the form of ECG, pulse oximeter and noninvasive arterial pressure, anesthesia was induced with fentanyl and propofol. A supraglottic airway was introduced

following the administration of atracurium. Anesthesia was maintained with 2% sevoflurane and 50% oxygen in the air along with intermittent positive pressure ventilation.

It was decided to use point of care ultrasonography (M Turbo, Fujifilm SonoSite, Inc, Bothell, WA, USA) to locate the guidewire during retrieval to avoid further radiation exposure to the child. The guidewire tip was accurately visualized in the internal jugular vein and was retrieved surgically [Figure 1b]. On inspection, it was 23 cm in length and appeared to be a guidewire used for arterial cannulation. Neither of the ends was flexible or curved unlike the central venous catheter (CVC) guidewires available. The short length contributed to the intravascular loss of guidewire.

Neuromuscular blockade was reversed with neostigmine and atropine and the child made an uneventful recovery.

Intravascular loss of guidewire, although extremely rare, is a completely preventable complication. A retained guidewire results in costly investigations and procedures for its retrieval that are potentially harmful to the patient and may also lead to medicolegal issues.^[1] Various modalities such as radiographs, CT scans, ultrasonography, echocardiography, and angiography have been used for the detection of the lost guidewires.^[1] Our patient also had repeated radiation exposure and had to undergo surgery under general anesthesia that was completely avoidable.

A lost guidewire may remain asymptomatic and incidentally found on a routine X-ray done sometime later. The longest gap

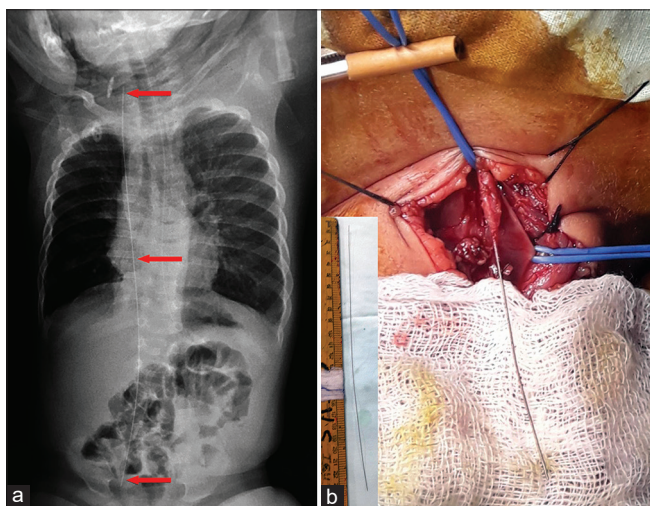


Figure 1: (a) X-ray showing the retained guidewire. (b) Guidewire (inset) being removed

reported was 20 years while in one patient a retained guidewire was incidentally detected during the postmortem examination.^[1]

The possible complications include arrhythmias, vascular damage, thromboembolic complications, infection, cardiac perforation, or tamponade.^[2] Migration of a right femoral vein catheter guidewire into the circulation leading to damage of arch of aorta and cerebrum has also been reported.^[3] The retained guidewires are also known to get fragmented inside the body.^[1] Fortunately, there was no major complication in our patient in spite of the retention of a wire that did not have a flexible tip.

Although interventional radiology techniques are the preferred method for retrieval and removal, we preferred surgical removal as facilities for the former were not available at our center.^[2] In spite of recovering from a major illness, the child tolerated the anesthetic procedure satisfactorily.

The risk factors identified for this complication include the insertion of catheters by trainees without adequate supervision, distractions during the procedure, and a high workload.^[1] Many strategies have been suggested to avoid this complication. A quality improvement project to eliminate incidences of guidewire retention during CVC insertion has also been proposed.^[4]

Important steps to avoid this include creating awareness of the possibility of retained guidewires and its complications; training on a mannikin; effective supervision; strong vigilance

during insertion; and provision of an adequate workforce, especially outside routine hours, as well as avoiding insertion at night unless essential.^[1]

Our case was especially different because apparently a guidewire from an arterial cannula was used for CVC insertion that was completely unwarranted. The rigid nature of this guidewire had the potential of causing serious damage. We believe that the simple step of maintaining a hold of the proximal tip of the wire during placement would have prevented this “never event.”

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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