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Case Report Open Access

An Unusual Shearing of the Internal Coil of a Stimulating Peripheral Nerve Block Catheter

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Case Report

Peripheral nerve block catheter related complications have been reported extensively. Catheter shearing [1], knotting [2,3], retention [4,5] and nerve entrapment of catheters [6,7] have all been described in case reports. We came across a rare complication of an Arrow stimulating nerve block catheter used as a non-stimulating catheter. We report an unusual shearing of the internal coil in a stimulating peripheral nerve block catheter.

An 82-year-old lady was admitted to our hospital for a right Total Knee Arthroplasty. She had consented for an adductor canal catheter along with posterior knee infiltration (single injection) and lateral femoral cutaneous nerve block (single injection) followed by a spinal anesthetic which is the standard of practice for total knee arthroplasties at our institute. An Arrow® StimuCath® Stimulating cPNB Catheter with 80 mm Tuohy needle was used for adductor canal block. Under ultrasound guidance, the sub-sartorial canal was identified at 4 cm depth and the 20 G catheter was introduced without any resistance through the 18 G Tuohy needle. At a catheter length of 10 cm at skin, the needle was withdrawn. The anesthesia assistant was requested to withdraw the guide wire from the catheter. She noticed an unusual resistance to the guide wire withdrawal. Mild sustained traction caused snapping of the internal coil and along with guidewire we noticed uncoiled metal wire of about 100 cm getting extracted. The outer plastic tubing remained intact. So, we decided to inject through the catheter. We connected the hub to the catheter and under ultrasound guidance tried to inject 5% Dextrose. We could not inject through the catheter as there was significant resistance to injection. Therefore, we removed the faulty catheter and the procedure was repeated with a similar set and the procedure went uneventful. We apologised to the patient for having repeated the procedure due to a catheter related problem. Her rest of the course in the hospital was uneventful and she was discharged on day two. On close examination there after we noticed that the distal metal coil tip of the catheter was intact but the proximal end was uncoiled.

In our experience of doing a few thousand continuous nerve blocks a year, use of Arrow catheters have been extremely satisfying. We assume that the guidewire might have been entrapped in the internal coil or might have been soldered as a manufacture defect. This resulted in the internal coil to snap and uncoil during guidewire extraction. Fortunately, the distal end of the coil and the plastic sheath were intact which prevented significant complications to the patient. If the guidewire had snapped at a more distal location close to the site of insertion the extraction process could have been complicated with tissue damage. It is always prudent to do a thorough inspection of the equipment prior to usage. But, this defect would have been very difficult to identify by inspection prior to insertion. We usually do not extract the stylet prior to the procedure as the reinsertion of the stylet into the catheter can be challenging due to its length and calibre. In clinical practice, occurrence of such incidents mandates careful evaluation of the patient to look for retained pieces of sheath or guidewire in the patient which will have will have infectious as well as legal implications.

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