

Deformed introducer needle during subclavian vein catheterization – escape from catastrophic sequel

P Khanna, R Garg, G Rath

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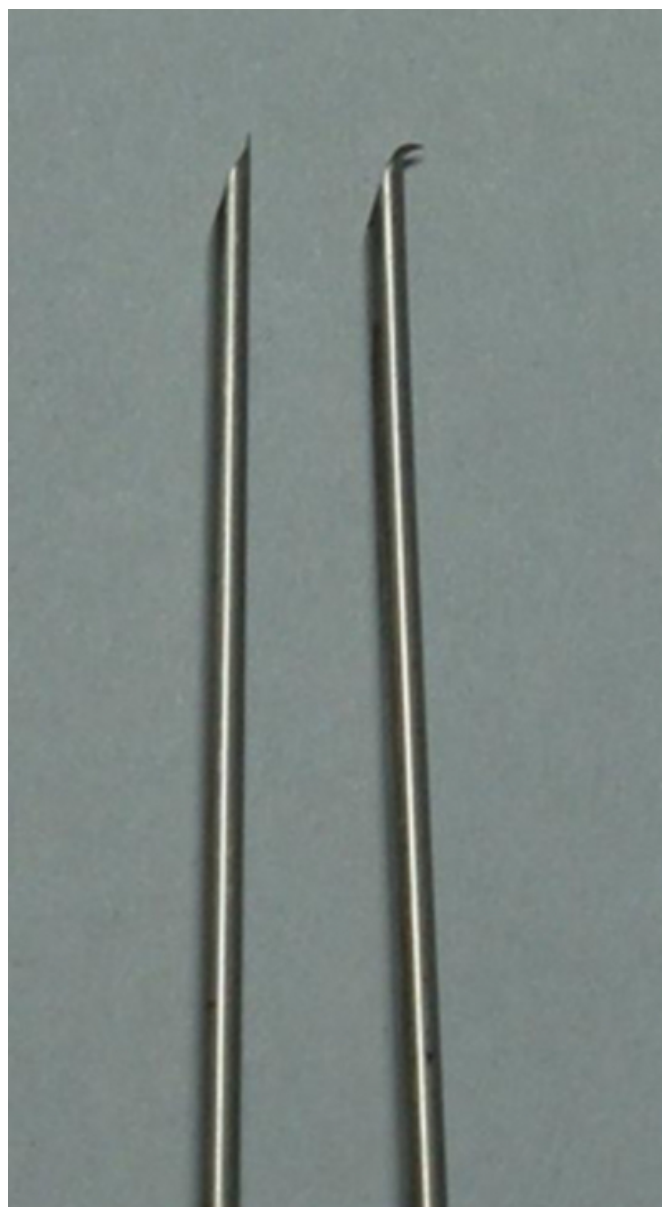
Abstract

To The Editor:

Subclavian vein (SCV) catheterization is an established maneuver to obtain venous access, but it may result in life-threatening complications such as pneumothorax and intrathoracic haemorrhage. ¹ We report a case of deformed introducer needle during SCV catheterization with concerns for possible catastrophic complications. A 43-yr-old, 55 kg female was scheduled for excision of left vestibular schwannoma. In the operating room, routine monitoring gadgets were connected, and anaesthesia was induced with a standard technique. Placement of central venous catheter (CVC) via right subclavian vein was planned, in view of nature of surgery and anticipated blood loss. Modified Seldinger's technique was followed for the placement of CVC. An 18G introducer needle (Vygon BP 7F, Multicath) was inserted just below the midpoint of clavicle, and directed towards supra sternal notch. In first attempt, the needle tip was struck the clavicle, and there was difficulty in negotiating it, further. The needle was withdrawn, and another attempt was made to access the vein. There was difficulty in inserting the needle through the skin. On close view, beveled tip of needle was observed to be bent (Fig.1).

Figure 1

Fig.1: Shows bent tip of introducer needle at the beveled end



Another introducer needle was taken and SCV catheterization was accomplished, uneventfully. The optimal position of the CVC was confirmed with chest x-ray during postoperative period. In usual practice for SCV catheterization, a needle is introduced below the clavicle to tap the vein. Many operators touch the clavicle with the needle tip to help guide themselves posteriorly, i.e., “walking” the clavicle down to locate the vein beneath it.² The common problems reported during catheterization of subclavian vein are insertion of needle through the periosteum of clavicle², osteomyelitis of clavicle and rib due to periosteum injury.³⁴ In our case, the tip of introducer needle got deformed by its impact on clavicle. Continuation of the procedure with such deformed needle may amount to shearing of major vessels with subsequent puncture, or even, problems during withdrawal of needle over guide wire. A large puncture or tear in a major intrathoracic vessel may lead to exsanguinating haemorrhage. These vessels are relatively difficult to access surgically, if repair is needed.⁵ Accidental puncture of the subclavian artery is a recognized complication of percutaneous CVC placement via subclavian route.⁶ These are potentially fatal complications hence,

avoidance is critical. Although ‘distortion’ of guide wire has been reported in literature, it has never been mentioned in relation to introducer needle. To prevent further complications, one must ensure gentle insertion of the introducer needle without undue force, and to rule out deformed tip in case needle struck on the clavicle.

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Author Information

Puneet Khanna, MBBS

Junior Resident, Department of Neuroanaesthesiology All India Institute of Medical Sciences, New Delhi, India

Rakesh Garg, MD, DNB

Senior Resident, Department of Neuroanaesthesiology All India Institute of Medical Sciences, New Delhi, India

Girija P Rath, MD, DM

Assistant Professor, Department of Neuroanaesthesiology All India Institute of Medical Sciences, New Delhi, India