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CASE REPORT

Shearing of epidural catheter during combined spinal epidural technique: more than just a hypothetical complication

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SUMMARY

Damage to an epidural catheter by a spinal needle is a hypothetical complication, as mentioned in the literature. We present a case report where the epidural catheter was damaged and sheared by a spinal needle when the same interspace was used for the introduction of both the epidural and spinal needles. The damage to the catheter went unnoticed until drug infusion via the catheter was planned. The intended drug could not be delivered. In a scenario where the drug could have been delivered via the damaged catheter, the tissue plane in which the drug extravasates and its possible implications may not be known. What was once purported to be a rare and hypothetical complication could no longer be just that.

Keywords: Analgesia; epidural analgesia; postoperative pain.

Introduction

Combined spinal-epidural is commonly practiced for surgeries involving the lower limb and is often the anaesthesia of choice. Access is achieved either by using separate spinal and epidural needles or by using a combined spinal-epidural set. When separate needles are used, different interspaces are often utilized for the insertion of a catheter and the administration of a drug in the subarachnoid space. Oftentimes, the same interspace may have to be used based on the clinical setting. There is no specific precept on whether the same or different interspaces should be used for the combined spinal-epidural technique. The decision solely rests with the treating anaesthesiologist regarding the approach to be used. Here, we report an otherwise rare complication of shearing of the epidural catheter by a spinal needle when the same interspace was used for combined spinal-epidural using separate needles.

Case Report

This was a case of a 67-year-old male patient scheduled for total hip arthroplasty. The patient was a known case of ankylosing spondylitis. Combined spinal-epidural anaesthesia was planned using separate needles in the same interspace due to narrow interspaces and the unavailability of a combined spinal-epidural set. Under aseptic conditions, with the patient in a sitting position, after infiltration of local anaesthetic in the form of lignocaine 2%, an epidural catheter was introduced using an 18G Tuohy needle with the loss of resistance to air technique in the L2-L3 interspace. After introduction, the catheter was fixed at the 11 cm mark. Following this, a subarachnoid block was administered in the same interspace using a 26G Quincke's needle. The surgery lasted for 2 hours and 15 minutes, and epidural analgesia was planned in the post-operative period. However, there was diffi-

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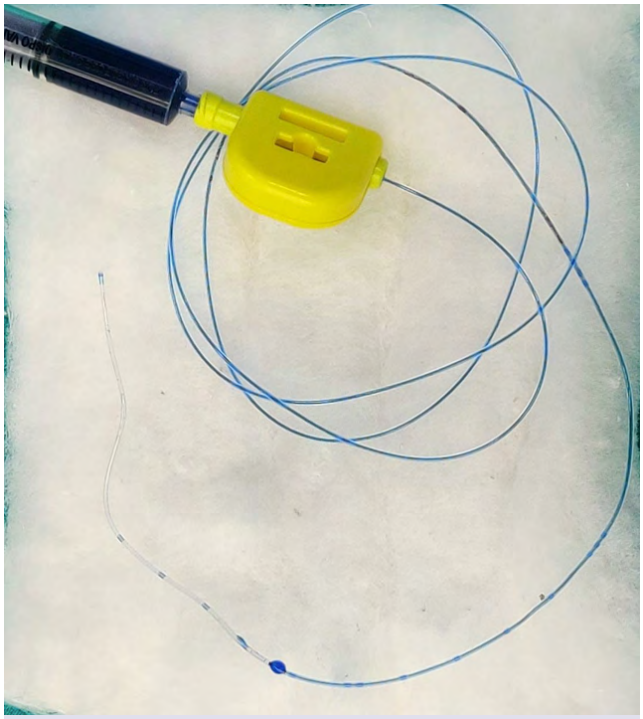

Figure 1. Leakage of methylene blue dye from the damaged catheter.

culty in administering drugs via the catheter, both manually and with an infusion pump. Excess resistance was felt during injection, and the patient denied a cold sensation down the spine (Lund's sign). The epidural catheter was removed and examined. It was flushed with methylene blue dye, and extravasation of the dye was noted in the catheter, proximally at the 10 cm mark, as seen in Figure 1, suggesting damage to the catheter. This could possibly be attributed to the spinal needle.

Discussion

We report a case of shearing and damage of an epidural catheter, possibly due to a spinal needle inserted in the same interspace. This technique is said to have a hypothetical risk of striking the epidural catheter with the spinal needle, with demonstrations that the catheter cannot be damaged with spinal needles.[1] Turner and Reifenberg[2] used a single-space double barrel technique and reported a single case of catheter damage using this technique. The theoretical possibility of catheter damage by the spinal needle was mentioned by Kestin.[3] It has been reported by Sakuma et al.,[4] whereby a sheared-off catheter segment was found with the possible cause of shearing attributed to the spinal needle. Tasneem et al.[5] have also reported damage to the epidural catheter by a spinal needle. Although damage to an epidural catheter by a spinal needle has been considered hypothetical, it may no longer be so. Caution must be exercised while using separate needles in the same interspace, and the possibility of such a complication should be considered. Owing to the unpredictability of where the catheter may shear, the injectate may enter the corresponding tissue plane and have its ramifications.

Ethics Committee Approval: This is a single case report, and therefore ethics committee approval was not required in accordance with institutional policies.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

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