Introduction

Similar to the lumbar epidural test dose, the thoracic test dose is used to identify inadvertent intrathecal or intravascular placement. However, unlike the lumbar epidural test dose, dosing criteria for detecting intrathecal misplacement at the thoracic level has not been investigated. We report a case in which standard lumbar-appropriate dosing of lidocaine/epinephrine for a thoracic test dose caused acute sensory symptoms as well as cardiac/respiratory collapse, and question whether design of the thoracic epidural test dose should be revisited.

Case Presentation

A 42 year old morbidly obese female was scheduled for open gastric bypass. In the preoperative holding area, a mid-thoracic epidural was placed with the patient in the sitting position. After a moderately difficult placement and negative catheter aspiration for CSF and blood, a 3mL of 1.5% lidocaine with epinephrine 1:200,000 test dose was injected. Within 1-2 minutes the patient complained of numb fingers and shortness of breath. This was rapidly followed by loss of consciousness requiring mask ventilation and endotracheal intubation. Additionally, the patient became profoundly hypotensive and bradycardic requiring fluids and vasoactive medications. Over 15-30 minutes the patient’s condition stabilized and gastric bypass surgery was performed. Approximately two hours later following completion of surgery, the patient followed commands, the endotracheal tube was moved and the patient had an uneventful postoperative course.

Notably, by informal survey at four institutions we know of five similar cases where a positive lumbar-appropriate thoracic test dose resulted in hemodynamic collapse, and required tracheal intubation, but no equivalent cases where symptoms of a positive test dose were successfully managed conservatively.

Discussion

We have identified six patient episodes where diagnosis of intrathecal thoracic epidural catheter misplacement using a typical lumbar-appropriate thoracic epidural test dose protocol was associated with acute sensory symptoms, the need for endotracheal intubation and hemodynamic collapse. Our review of the literature identified other examples with similar complications. While there is general agreement that a thoracic test dose is useful (1), these observations collectively suggest that preparation for adverse events with administration of a current standard lumbar-appropriate thoracic test dose protocol is prudent, and that redesign of the thoracic test dose may be warranted.

References