Endobronchial Intubation During Upper Abdominal Laparoscopic Surgery in the Reverse Trendelenburg Position

To the Editor:

We read with interest the excellent review by Cunningham and Brull (1) on laparoscopic cholecystectomy and, in particular, the effects of gas insufflation and position on respiratory function. The authors point out the potential for inadvertent right main stem bronchial intubation associated with the Trendelenburg position (2). We would like to report that this phenomenon can also occur in the reverse Trendelenburg position during upper abdominal laparoscopic surgery, having noticed it in 3 of 50 procedures, despite meticulous tracheal tube placement. In each instance, the tube migrated into the right main bronchus shortly after insufflation to an intraabdominal pressure of only 15 cm H2O. The mechanism proposed is similar to that for the Trendelenburg position (3), but the diaphragm is displaced cranially by pressurized gas rather than the weight of the abdominal contents. It is important therefore to consider right main stem bronchial intubation as a possible cause of hypoxemia whenever the abdomen is insufflated with gas, even in the reverse Trendelenburg position.

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References

Severe Kinking of an Epidural Needle

To the Editor:

Despite the potential for placing considerable axial and lateral force on an epidural needle upon insertion, epidural needles are rarely bent or broken, because of their large size and durability. In a recent report, however, an extra-thin-walled 18-gauge Tuohy needle fractured at midshaft during an attempted epidural block in an obese patient (1). We report a similar case in which an 18-gauge Tuohy needle kinked remarkably during an attempted epidural steroid injection.

An obese (140 kg, 165 cm), otherwise healthy, 54-yr-old woman presented for an epidural steroid injection. The patient was placed in a sitting position, and her back was painted with an antiseptic solution and draped in the usual sterile fashion. The bony landmarks were difficult to palpate because of the obesity, and the L4-L5 interspace was approximated with difficulty. An extra-thin-walled 18-gauge Tuohy needle (American Medical Instruments, New Bedford, MA) was advanced 5 cm. The stylet was then removed and a glass syringe with saline was attached to the hub. The needle was advanced in the standard fashion until resistance, perceived as bone, was encountered. The Tuohy needle was then "walked off" the bone in the cephalad direction toward the epidural space. Loss of resistance was never achieved despite advancing the needle to the hub. At this point, the needle was removed with a moderate amount of difficulty. The needle appeared kinked in three places (Figure 1). Subsequently, epidural needle placement and injection was performed at the L3-L4 interspace. This was done with a 17-gauge Tuohy epidural needle without incident.

During placement, epidural needles are often placed under considerable axial and lateral force because of the size and the dullness of the tip. In both the current report and that of Dunn et al. (1), damage occurred when an attempt was made to place an 18-gauge thin-walled needle. Consistent with the findings of Dunn et al., 17-gauge needles are more difficult to deform than 18-gauge needles of similar type when axial force is applied. In addition, the needle that deformed in both the current report and that of Dunn et al. was an extra-thin-walled needle and was found by the authors to deform with

Figure 1. Tuohy 18-gauge epidural needle removed from patient after failed epidural placement. Note the severe kinking in the midshaft range, most likely caused by axial pressure encountered on needle advancement.