

Audible air leak during labor epidural analgesia

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To the Editor:

When the epidural space is reached during epidural puncture in pregnant women using the loss of resistance to air technique, the hiss of escaping air may be heard because the epidural space in pregnant women is under sustained positive pressure [1]. We investigated whether this audible air leak is related to successful epidural analgesia during labor.

The occurrence of audible air leak just after removing the air syringe during Tuohy needle placement was evaluated in 1200 parturients. Cases were divided into the audible air leak group (group A) or no audible air leak group (group N). Overall failure rate (the primary outcome), failure of catheter insertion, unintentional dural puncture, intravenous catheter placement, paresthesia, inadequate

analgesia, and catheter migration were compared between groups.

The incidence of audible air leak was 35.9 %. Rates of overall failure including unintentional dural puncture and intravenous catheter placement were significantly lower in group A than in group N (Supplementary Table 1). The presence of audible air leak was estimated to have a positive predictive value of 98.6 %, a negative predictive value of 2.7 %, a specificity of 76.2 % and a sensitivity of 38.4 % for successful labor analgesia after catheter placement (Supplementary Table 2).

Our study has some limitations. The audibility of air leakage is subjective and depends on the hearing acuity of individual observers as well as the level of ambient noise. In addition, audible air leak may not be a confirmative method for identifying the epidural space.

In summary, the occurrence of audible air leak during Tuohy needle placement seems to be associated with a lower incidence of both overall failure and intravenous catheter placement in labor epidural analgesia.

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