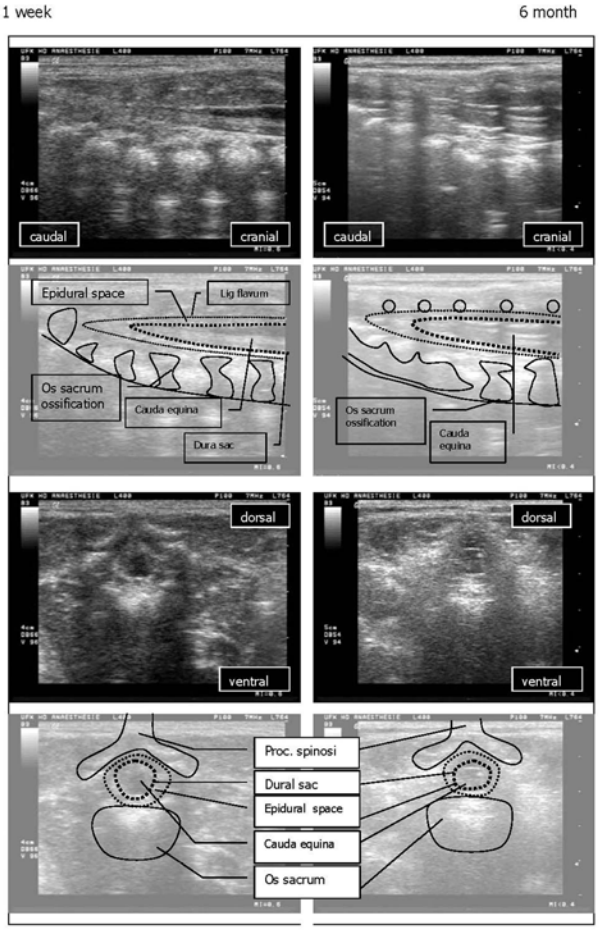

FIGURE Lumbar and sacral areas imaged at one week and six months.

mater can be predetermined before needle advancement.[5] Screening for congenital anatomical variations is possible and structures identified through this acoustic window enhance efficacy and safety. The quality of the images acquired in infants are superior to those in adults, possibly because of the smaller depth and poorly ossified structures. The use of real-time imaging can facilitate needle and catheter placement.

In conclusion, US imaging can make pediatric regional anesthesia easier and more secure. Important anatomical details relevant to neuraxial anesthesia can be visualized. In addition, it is a useful tool for teaching the principles of pediatric neuraxial regional anesthesia.

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The "bouncing sign" may optimize the insertion of the laryngeal tube

To the Editor:

The laryngeal tube (LT; VBM, Medizintechnik, GmbH, Germany) is a new, FDA approved, supraglottic airway device. The LT is inserted blindly along the hard palate and hypopharynx into the esophagus until the centre black line on the tube is level with the teeth and the tip lies behind the cricoid (C6 level). Two cuffs - one distal, esophageal and one proximal, pharyngeal - isolate the glottis for ventilation.[1,2] Malposition is usually defined after inflation of the cuffs (proximal blue cuff easily visible in the mouth, low leak pressures, gastric insufflation, and failed ventilation).

One of the characteristics of the LT is the short tube length; subsequently the recommended depth may be achieved with the distal-esophageal-tip embedded in the glottic/periglottic elastic structures (e.g., the piriform sinus, a down folded epiglottis…). When released, a malpositioned LT will "bounce back" from the intended position pushed by the elastic recoil of the aforementioned structures ("positive bouncing sign"). In a succession of 75 adult male patients we observed the "bouncing sign" in five cases. Malposition was confirmed after inflation. The bouncing was variable (mm to cm) but with the same significance. In the 70 patients with "negative bouncing sign" the distal tip of the device was inserted in the esophagus and correct positioning was confirmed clinically after inflation of the cuffs: bilateral breath sounds with easy ventilation, peak airway pressure > 20 cm H_2O, no gastric insufflation, proximal blue cuff minimally visible in the oropharynx and a square wave capnographic trace.

Our current approach is to reposition an LT that "bounces back" without completely removing it from the oral cavity. Adjunct maneuvers (jaw lift, jaw

thrust) may be used with the first attempt or with repositioning especially when resistance is felt during insertion.[3]

A correctly placed LT will maintain its intended position after insertion. Use of the "bouncing sign" may optimize the LT insertion and the first attempt success rate. A study is required to corroborate the "preinflation" clinical bouncing sign with the "postinflation" fibreoptic view of the distal cuff position.

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Difficulty in airway management during sedation of patients affected by obstructive sleep apnea

To the Editor:
Middle ear surgeons often prefer to perform functional surgery under local anesthesia to evaluate the surgical outcome promptly intraoperatively. Adequate sedation with a spontaneously breathing patient is mandatory to adequately stabilize the arterial blood pressure and to limit the patient's movements. The obstructive sleep apnea syndrome (OSAS) is a common disorder characterized by cessation of airflow for more than ten seconds despite continuing ventilatory effort, five or more times per hour of sleep, and is usually associated with a decrease of arterial oxygen saturation of more than 4%.[1] The main risk factor for OSAS is obesity, present in roughly 70% of patients with OSAS.[1] The condition is due to upper airway collapse[2] and can complicate interventions conducted under deep sedation.

During the last four years, more than 700 middle ear procedures were performed in our otorhinolaryngology clinic under local anesthesia associated with sedation in spontaneously breathing patients. Intravenous administration of midazolam 0.03 to 0.04 $mg \cdot kg^{-1}$ plus fentanyl 1.4 to 1.5 $\mu g \cdot kg^{-1}$ was used for patient sedation. In eight of these patients (1.14% of the entire patient population; five males/three females; mean age 54 ± 12 yr) a temporary interruption of the surgical procedure was required because of difficulties in maintaining upper airway patency, and the intervention was carried out under general anesthesia. On further questioning, all eight patients presented a history of snoring and excessive daytime sleepiness, suggestive of OSAS. On overnight polysomnography, all patients presented criteria for severe OSAS, as classified in other studies[3] [mean (range) apnea-hypopnea index – (AHI): 48; 35–70].

Our observation seems to confirm that, in patients with OSAS, caution is required when administering hypnotic drugs because excessive sedation can increase the risk of upper airway obstruction.[4] This may be due to the benzodiazepine-induced muscle relaxation and subsequent pharyngeal collapse.[5] Further, airway obstruction may be enhanced by patient positioning for middle ear surgery, the patient lying supine with his/her head strongly rotated laterally and the body usually in the Trendelenburg position. In addition, all central depressant drugs can also depress the ventilatory response to the ensuing hypoxemia and hypercapnia.[1]

We strongly suggest that anesthesiologists carefully investigate patients preoperatively for symptoms and signs of OSAS, specially when sedation with a spontaneously breathing patient is needed for functional middle ear surgery. In our opinion, OSAS represents a relative contraindication to local anesthesia and sedation for such procedures.

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