Termination of Hiccups Occurring under Anesthesia

To the Editor.—Hiccups occurring during anesthesia can be problematic when the intermittent diaphragm spasm disturbs the surgical field. Hiccups can also interfere with diagnostic studies such as magnetic resonance imaging scanning and therapeutic interventions such as radiation therapy. The precise etiology of hiccups is unknown, but probably results from stimulation of one or more limbs of the hiccup reflex arc.¹

Many empirical treatments have been described for terminating undesirable hiccups during anesthesia. Parenteral administration of drugs such as ketamine,² methylenidate,³ ephedrine, ephedrinum, chlorpromazine, doxapram, anticonvulsants, and several muscle relaxants have been tried with variable effectiveness. The greatest success has been achieved with mechanical maneuvers that irritate or stimulate the soft palate and pharynx. This presumably interrupts the hiccup reflex by inhibiting vagal afferent impulses. The techniques described are nasopharyngeal instillations of ether⁴ or five ml ice cold saline⁵ and catheter stimulation of the nasopharynx.⁶

Although highly successful, these latter techniques can be used safely only in the awake patient or in the patient whose trachea is intubated because of the risk of airway compromise or aspiration or both. I describe here a simple, rapid-acting technique for terminating unwanted hiccups in the sedated or unconscious patient whose trachea is not intubated.

A 2-year-old child with cerebellar neuroblastoma was undergoing one of many in a series of outpatient radiation treatments. The entire procedure takes less than 10 min and is not painful, but requires precise positioning and alignment of the radiation beam. It is essential that the patient not move during radiation administration. The patient was sedated with intravenous ketamine 2 mg/kg, midazolam 0.05 mg/kg, and glycopyrrolate 0.01 mg/kg. This combination produced rapid onset and short duration of sleep with spontaneous respirations and a patent airway. Normal respirations do not displace the head position. However, when this patient began to hiccup, the diaphragmatic spasms altered the precise position of his head. Rather than intubate the trachea for such a short procedure, I passed a broken ampule of ammonium chloride ("smelling salts") under the patient’s nose. Within one respiratory cycle the hiccups abruptly ceased, and the radiation therapy proceeded without further interruption. I have since used this technique on several other patients, both awake and sedated, with 100% success and no adverse effects.

Since smelling salts usually are readily available in most hospital settings, they offer a rapid and convenient alternative method for terminating unwanted hiccups in the intubated patient.

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REFERENCES

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Benzocaine and Methemoglobin: Recommended Actions

To the Editor.—Benzocaine, absorbed from skin, mucous, or pulmonary membranes, commonly causes methemoglobinemia although this complication is not described in the drug package inserts, on the containers, or in the Physicians’ Desk Reference. This came to our attention following use of Hurricane® spray to facilitate placement of tracheostomy tubes in goats with tracheal stomata. In the initial instance that drew our attention, methemoglobin analyzed by a multiwavelength oximeter (OSM3, Radiometer) increased to 32% in a goat that was anemic (hemoglobin 6 g).

The following tests were done in three goats with tracheal stomata and arterial catheters. The goats were awake and were breathing air. After Hurricane® was sprayed for about 1 s into the stoma, methe-