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An Effective Method for the Treatment of Hiccups During Anesthesia

M. R. SALEM, M.D.*

Effective treatment of hiccups during anesthesia is important for many obvious reasons. Hiccup is seen more frequently during light anesthesia when muscle relaxation is produced by neuromuscular blocking agents. It is often associated with the slow return of diaphragmatic activity as relaxation starts to wear off.²

The afferent limb of the reflex arc producing hiccups is the vagus nerve and, possibly, the phrenic nerve and the sympathetic chain from the sixth to twelfth thoracic segments. The center is located at cervical cord levels 3 to 6.^{1,2} Other afferent pathways may also exist. The efferent limb is the phrenic nerve.^{1,2} Afferents may arise from almost any part of the body but, during anesthesia, are most frequently associated with stimulation of the diaphragm by irritating fluids such as blood, pus, or gastric juice.² It may also occur in disorders of the esophagus, dilatation of the stomach, inflation of the stomach with anesthetic gases, intestinal obstruction, ileus, pancreatitis, peritonitis, pericarditis, traction on viscera and nerves, and in toxic conditions such as uremia.^{3,4}

Various methods of treating hiccups have been described^{2,4}: deepening the anesthesia, incremental doses of a muscle relaxant, pressure on the eyeballs, pressure on the common carotid artery, vagal blockade by local anesthesia, phrenic nerve block, electrophrenic stimulation, relieving distention if present, carbon dioxide inhalation, and hyperventilation. Amyl nitrite, ether, intravenous edrophonium, atropine, chlorpromazine, and other central nervous system depressants have been used with varying results. None of these procedures can be considered totally effective in the management of hiccups.

It occurred to me that the presence of an oral endotracheal tube might possibly be a triggering mechanism of hiccups and I was able to observe that the spraying of lidocaine around the endotracheal tube in the pharynx through a catheter resulted in cessation of the hiccups in a few cases. Dr. Anis Baraka of Cairo University, Egypt, suggested to me that it has been his experience that the mere passage of a catheter through the nose into the nasopharynx frequently abolished hiccups.* Following Baraka's suggestion, nasopharyngeal

* Section of Anesthesiology, University of Chicago Clinics, Chicago, Illinois.

* Baraka, A.: Personal communication.

stimulation using a plastic or rubber suction catheter so introduced was tried in 32 cases where hiccups occurred. In 26 of these cases, the anesthetic technique was nitrous oxide-oxygen-curare, and in 6 cases halothane-nitrous oxide-oxygen was used. Oral endotracheal intubation had been performed in 31 cases, and in one case a mask was used.

In all of these patients, nasopharyngeal stimulation resulted in immediate cessation of the hiccups. In 4 cases, hiccups recurred but were successfully treated with the same method. The mechanism by which nasopharyngeal stimulation abolishes hiccups during anesthesia is not known. It can possibly represent a situation in which one reflex inhibits another reflex. We had the opportunity to use the maneuver in 3 conscious subjects; an 18 month old awake infant, a patient undergoing suprapubic prostatectomy under spinal anesthesia and a patient with subphrenic ab-

cess. In all three patients, there was immediate cessation of the hiccups. The remarkable success we have experienced with nasopharyngeal stimulation to treat hiccup suggests it is a useful method for controlling hiccups during anesthesia and perhaps in the treatment of persistent hiccups in the conscious subject.

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GADGET

A Mechanical Aid for Positioning Psychiatric Patients for Spinal and Epidural Anesthesia

LUDWIG L. BLUM, M.D.*

Spinal and epidural anesthesia are well tolerated by many patients in mental institutions. Insertion of the lumbar puncture needle, however, often requires special consideration because many of these patients resent pressure around the head and neck and resist when placed in the lateral recumbent position. They will usually, in our experience, tolerate the sitting position without objection. This report describes a mechanical aid to make use of this position with optimal flexion of the spine with a minimum of effort.

Our technique consists of sitting the patient at the far end of the table with the head sec-

tion completely lowered and the foot section turned down far enough to permit the patient to sit up and lean with his full weight against a special appliance, the Zollinger *leg* holder,¹ used in this instance as a support for the *torso*. The crossbar of the holder, padded to a small roll, is placed in front of the lower abdomen (fig. 1) close enough to eliminate forward motion in the hip-joint and to serve as a fulcrum over which the lumbar spine can be flexed. With the sockets on the side rails approximately at mid-thigh level, far enough from the hip joint for the patient to sit up, the holder is inserted into the sockets and brought to a point approximately 4 cm. above the thighs. The leg straps are then removed, and the foot

* Franklin Delano Roosevelt Veterans Administration Hospital, Montrose, New York.