

CORRESPONDENCE

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Percutaneous Transtracheal Jet Ventilation Made Easy

To the Editor:—The importance of percutaneous transtracheal jet ventilation (PTJV) in the management of the difficult airway has been established. Benumof *et al.*¹ suggested that equipment to accomplish PTJV be readily available in all anesthetizing locations, and several systems were presented. As awareness of this airway management technique increases, so does the number of system variations.^{2,3} We present another easy, inexpensive, and reliable apparatus for PTJV using a 5.0-mm ID endotracheal tube adaptor, low-pressure oxygen supply tubing, and a three-way stopcock (fig. 1).

The endotracheal adaptor is placed into the fresh gas flow outlet of an anesthesiology machine. Removal of the adaptor allows direct connection of the oxygen tubing to an oxygen cylinder or a wall-mounted oxygen flow meter. The stopcock inserts into the transtracheally placed angiocath, with its apertures opened in all directions. By placing the thumb intermittently over the open stopcock aperture, oxygen flow is directed down the transtracheal catheter in a 1:3–4-s inspiratory:expiratory ratio as described in the Advanced Trauma Life Support guidelines*. When connected to the anesthesia machine, depression of the oxygen flush valve is coordinated with occlusion of the stopcock aperture.

One advantage of this system is that the open aperture may allow for venting of excessive tracheobronchial pressure in the situation of the otherwise totally occluded airway. Another is that this system, constructed of components readily available in any anesthesiology department, lends itself to easy and cheap mass production. This promotes its availability in all anesthetizing locations, as well as in intensive care units, emergency rooms, and crash carts.

Using this system, we have successfully oxygenated three patients whose tracheas could not be intubated and whose lungs could not be ventilated adequately using a bag and mask.

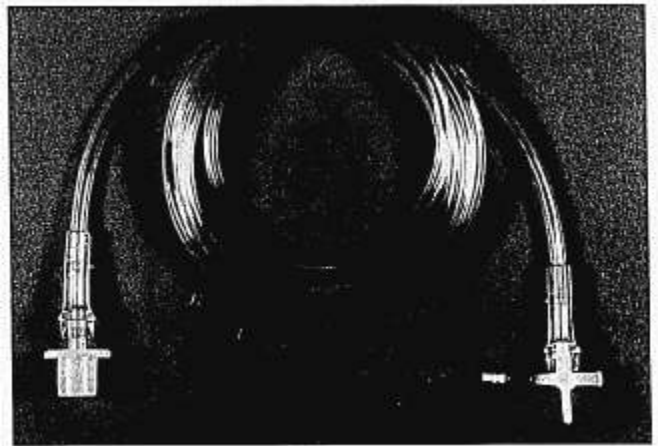


FIG. 1. Percutaneous transtracheal jet ventilation. A: 4.0–5.0-mm ID endotracheal tube adaptor. B: Oxygen supply tubing. C: Three-way stopcock. D: 14-G angiocath.

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Epidural Blood Patch in a Patient with HIV Infection

To the Editor:—In response to the request of Dr. Frame and Dr. Lichtmann¹ for information from other practitioners that have addressed the dilemma of epidural blood patch in human immunodeficiency virus (HIV)-positive patients, we present the following case report.

A 34-yr-old HIV-positive male patient was referred to our department for treatment of a persistent post-dural puncture headache (PDPH). This patient had a history of two episodes of *Pneumocystis*

carinii pneumonia followed by an episode of cryptococcal pneumonia. The patient's cryptococcal pneumonia was complicated by cryptococcal meningitis. His infections were successfully treated with pentamidine, azidothymidine (AZT), and fluconazole. In May 1990, diagnostic lumbar puncture was performed with a 20-G spinal needle to confirm the resolution of the cryptococcal meningitis. His course was complicated by the development of severe PDPHs that did not resolve with 1 week of conservative therapy.

We were consulted as to the efficacy and safety of epidural blood patch in this patient. Our primary concern was the injection of HIV-infected blood into the epidural space of a patient who had no evidence of HIV involvement of the central nervous system. Our colleagues' opinions regarding this issue were solicited, and our concerns were shared with the patient. We discussed our lack of experience with this situation and informed the patient of the dearth of experience in the published literature; nevertheless, the patient agreed to blood patch therapy. An epidural blood patch was performed using a 17-G Hustead needle and 15 ml autologous blood. The patient had immediate relief of his PDPH symptoms and was discharged pain-free from the recovery room. He was transferred to domiciliary care 3 days after the procedure. Intermittent follow-up over the subsequent 19 months has revealed no signs of neurologic involvement as a result of the blood patch. The patient has been discharged from domiciliary care and is functioning well in an independent environment.

We present this case to share our single experience with long-term follow-up on epidural blood patch in an HIV-positive patient and solicit additional advice from other practitioners who have dealt with this dilemma.

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Post-dural Puncture Headache in the HIV-positive Patient

To the Editor:—The recent report by Frame and Lichtmann¹ about blood patch in the human immunodeficiency virus (HIV)-positive patient raises an interesting question—can injecting HIV-positive blood into the epidural space increase the risk of HIV infection in the central nervous system? The authors invite others to share their experiences with this problem. A 25-yr-old man, HIV-positive, was admitted for evaluation of shortness of breath and fever. As part of the diagnostic evaluation, a lumbar puncture was performed. During the next 2 days, the patient had a persistent positional headache believed to be related to the dural puncture. On the second day the patient was discharged receiving oral analgesics. The patient's headache increased in severity after discharge, and by the 6th day after the lumbar puncture the patient's internist asked me to perform an epidural blood patch because the headache was causing severe nausea and vomiting, as well as pain. It was apparent that the patient had not had a trial of conservative therapy; that is, although told to increase fluid intake he could not tolerate this. Therefore, the patient was admitted on the evening of the 6th day and received an intravenous infusion of 0.45% saline at 100 ml/h. On the evening of the 8th day the patient rated his headache as very mild (1/10), whereas on days 4 and 5 it had been very severe (10/10). His nausea and vomiting had resolved. Since admission he had been able to increase his oral intake. By the morning of the 9th day, his headache had completely resolved and he was discharged.

Most spinal headaches will spontaneously resolve, and until we have more information about the infectiousness of the HIV virus in the central nervous system, I believe that blood patch should be used only

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Does Arterial Baroreflex Play a Role in Response to Acute Hypovolemia during Induced Hypotension?

To the Editor:—I read with great interest the study by Taneyama *et al.*¹ on the arterial baroreceptor reflex response to acute hypovolemia

during induced hypotension. There are several questions that need to be addressed. To begin with, there is a question about the arterial

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when conservative measures truly have failed. This, of course, means that if the patient is not able to tolerate oral hydration, intravenous hydration will be necessary. As in this case, conservative measures often are said to have failed, when in reality, because of nausea and vomiting, hydration has not really been given a chance. Had this patient not responded to intravenous hydration, intravenous caffeine therapy would have been tried next.² Does infusion of epidural saline have an advantage over epidural blood patch in this particular situation? If a blood patch is necessary, should it be performed with fresh HIV-negative blood from an appropriate donor? These and other issues need to be considered.

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