Real-time Ultrasonic Guidance for Percutaneous Puncture of the Internal Jugular Vein

To the Editor:—Anatomical landmarks\(^1\) and ultrasound Doppler flowmetry\(^2\) have been employed for the location of the internal jugular vein (IJV). We have used transcutaneous ultrasonographic scanning to determine the precise location of the IJV and to observe the procedures of venous puncture and catheterization. An ultrasonographic scanner (Echo\(^\circ\) Camera, Model SSD-256, Aloka, Japan) equipped with a 5 MHz ultrasound transducer was used to obtain the real-time ultrasound images. With the head rotated approximately 45 degrees contralateral to the side of the puncture, povidone iodine gel was used as the acoustic coupling medium. The probe was sterilized with ethylene oxide and applied longitudinally to the neck (fig. 1). The carotid artery is the only observable structure that bears a fixed relationship to the IJV at the levels scanned.\(^3\) Both the IJV and carotid artery are identified as echo-free band images on the oscilloscope (fig. 2). Dur-

![Fig. 1. Puncture of the right internal jugular vein. T-shaped probe is positioned in right internal jugular vein.](image1)

![Fig. 2. The longitudinal ultrasound image of the internal jugular vein with the puncture needle in place. The internal jugular vein is observed as an echo-free band.](image2)
Cricoid Pressure, Awake Intubation, or Both?

To the Editor:—The experiment by Salem et al.\(^1\) attempted to resolve the question of the desirability of leaving a nasogastric tube in place during rapid-sequence induction. Although cricoid pressure was found to be highly effective in occluding the upper esophagus in six fresh cadavers, for several reasons these findings may not allow one the degree of certainty with which Salem recommends this course of action in the clinical setting. First, the force of cricoid compression may well have been much greater than that used clinically, and reduction in the force of compression to meet the needs of intubation may result in reflux. Second, cricoid compression has been known to distort and/or laterally displace the glottis, and extensive anterior–posterior compression of the cricoid may also result in compromise of the narrowest lumen to be traversed with intubation. Third, no attempt was made to intubate the cadaver, and the antiocclusive effects of anterior displacement forces of laryngoscopy require evaluation.

The advantage of an 18-Fr nasogastric tube as a “blow off” valve is questionable because induction is generally delayed until suction of gastric contents becomes nonproductive. Slow withdrawal of the nasogastric tube allows aspiration of esophageal and pharyngeal contents as well as subsequent evaluation of the patency of the tube itself, which frequently becomes occluded with particulate matter not found in colored saline. This slow withdrawal of the nasogastric tube may be particularly useful in patients with hiatal hernia or achalasia, where the danger of aspiration arises from material proximal to the stomach. Rare entities such as megaesophagus could preclude efficacy of cricoid compression, the upper esophagus becoming much wider than the cricoid. With Zenker’s diverticulum, aspiration secondary to cricoid compression