

Anesthesiology
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In Reply:—We began to use the size 2 laryngeal mask within weeks of its becoming available. At that time, the recommended technique was as shown in our figure 3,¹ that is, without the current emphasis on pressing the tip of the mask firmly against the soft palate. This difference may explain our 7% incidence of multiple insertion. We agree that figure 3 may suggest that the mask is inflated for insertion, although we did emphasize in the text that the mask should be deflated as the first step in the sequence of insertion. We apologize for any confusion this discrepancy has caused.

Dr. Brain comments on the position of the mask relative to the epiglottis (our fig. 2) and states that the epiglottis is usually within and not above the mask. We suggest that figure 2 shows the mask abutting on the epiglottis, and not below it; the figure was deliberately drawn this way to avoid the suggestion that the epiglottis should always be included within the mask. Our observations of x-rays of the mask in place showed that the epiglottis did not have a constant relation to the upper border of the mask. We did not wish to suggest that correct placement requires the epiglottis to be within the mask.

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Anesthesia Machine for Use during Magnetic Resonance Imaging

To the Editor:—Magnetic resonance imaging (MRI) is becoming an increasingly popular noninvasive radiologic diagnostic procedure because it does not involve ionizing radiation and because it provides better image quality. MRI requires the patient to be absolutely still for the duration of the procedure, which may last from several minutes to hours. Most patients can undergo imaging while awake or under light sedation; however, certain patients require deep sedation or general anesthesia and tracheal intubation.¹

Most MRI units use a 1.5-tesla superconducting electromagnet, which interferes with the function of currently available conventional anesthesia machines, electronic monitoring devices, and alarm systems. In addition, an anesthesia machine's ferromagnetic components may cause it to be forcibly attracted toward the MRI magnet and may also cause distortion of the image. We approached the Ohmeda® company to explore the feasibility of manufacturing a commercially available nonmagnetic anesthesia machine for use near the MRI magnet.

All ferromagnetic material in the Ohmeda Excel 210 model has been replaced with aluminum or nonmagnetic stainless steel. The frame, chassis, and drawers were made of aluminum. Oxygen and nitrous oxide tanks were replaced with aluminum tanks. The machine can also accommodate pipeline hoses for oxygen, nitrous oxide, and air. Two Tec-4 vaporizers, gas management system (GMS) absorber, a waste-gas-scavenging interface valve assembly, an oxygen monitor (5120), and a GMS-PEEP valve, all manufactured by Ohmeda®, can be used with this machine with optimal function in the 1.5-tesla magnetic field. This machine is also equipped with the recommended safety features, including hypoxic guard, oxygen supply pressure alarm, pin-indexed cylinder hanger yokes, and a recessed oxygen flush valve (fig. 1).

We evaluated the MRI-compatible anesthesia machine on several children and adults. We found the machine to perform satisfactorily in close proximity to the 1.5-tesla magnet, within the MRI suite. The output of the Ohmeda® vaporizers was checked with a mass spectrometer and found to be accurate.² Alternatively, the presence and use of the anesthesia machine in the proximity of the magnet did not disturb the image quality. The machine is approved by the Food and Drug Administration and is now commercially available.

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We hope that these comments help further elucidate Dr. Brain's observations on our paper, and we remain grateful to him for the invention, which has been such an advance in anesthetic practice.

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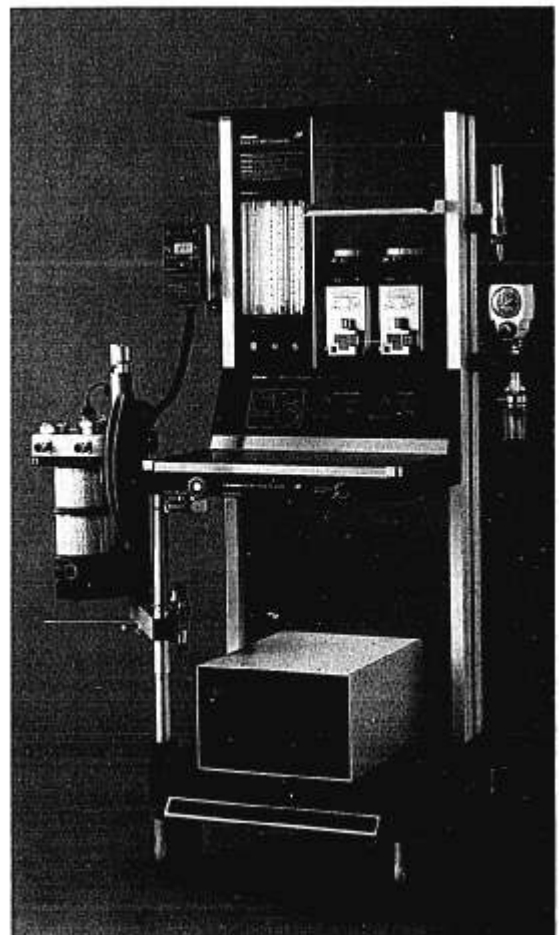


FIG. 1. Commercially available, MRI-compatible Ohmeda® Excel 210 anesthesia machine.