procedures or those involving patients in the prone position has not been advocated by our study. In view of the paucity of research regarding this topic in the recent literature prior to this study, the use or non-use of ocular ointments during anesthetic procedures is left to the discretion of the anesthesiologist, depending on the circumstances surrounding each individual case. Still, it appears that, in short-term procedures, the elimination of the routine use of ophthalmic ointments is cost effective and allows for better postoperative patient satisfaction without compromising safety.

PATRICIA A. SIFFRING, M.D.
Resident in Radiology
Creighton University School of Medicine
601 No. 30th Street
Omaha, Nebraska 68131

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Modification of an Anesthesia Machine for Use during Magnetic Resonance Imaging

To the Editor:—Magnetic resonance imaging (MRI) is a non-invasive diagnostic imaging process that utilizes powerful electromagnetic field and radio frequency pulses to produce images. In order to obtain optimal studies, it is mandatory that the patient be absolutely still inside the scanner, which, if not possible, may dictate a need for general anesthesia. The adminstration of general anesthesia for MRI is complicated by the fact that the magnetic field interferes with the function of conventional anesthesia machine and electronic monitoring devices. Conversely, electronic monitors may interfere with the function of the scanner and degrade the image quality.[1,2]* We describe the modification of a conventional anesthesia machine rendering it suitable for administering general endotracheal inhaled anesthesia within 2 feet of a 1.5 tesla MRI magnet. We also described the monitoring devices which we utilized in the MRI suite.

The commercially available anesthesia machines contain varying amounts of ferromagnetic substances and electronically controlled regulators making them unsuitable for use in the proximity of an MRI magnet. A Foregger®, Model BC anesthesia machine was modified and converted to a non-ferromagnetic machine. An examination of the machine using a small permanent magnet demonstrated the actual gas delivery portions of the machine to be non-ferromagnetic. The only ferromagnetic portions of the machine were the support structures, castors, oxygen and nitrous oxide tanks, and portions of the tank supports. Under the direction of our bioengineers, a support cart with castors was manufactured using stainless steel and aluminum. Aluminum oxygen and nitrous oxide tanks were used instead of steel tanks. After inspection and certification for use by our bioengineering department, the unit was tested in the proximity of the magnet. It could be located within 2 feet of the magnet without magnetic attraction of the machine or degradation of the quality of the image. The total cost of the conversion was about $1600.

Narco Air-Shields® ventilator (Model VC 20-1) is non-ferromagnetic, and was found compatible with the MRI magnet. We tested several monitors of different brands in the MRI suite, and found that physiologic monitoring for these procedures can be accomplished with the following monitors. Ohmeda® 5120 oxygen analyzer, plastic precordial and esophageal stethoscopes, blood pressure cuff, Parks Medical Electronics® (model 811) Doppler flow probe, Biochem (The microspan® 1040) pulse oximeter, and fibroptic ECG (Astro-Med® Model Dash II). To prevent image degradation, the Doppler box and the pulse oximeter box must be placed approximately 20 feet away from the magnet. Therefore, Doppler probes and pulse oximeters must be used with approximately 20-feet-long cords.

We have successfully used this modified machine with the previously described monitors in several children and adults.

CHALAPATHI C. RAO, M.D.
Associate Professor

WILLIAM L. MCNIECE, M.D.
Assistant Professor

JOHN EMHARDT, M.D.
Assistant Professor

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GOPAL KRISHNA, M.D.
Professor
Department of Anesthesia
ROY WESTCOTT
Design and Fabrication Engineer
Department of Clinical Engineering
Indiana University School of Medicine
Indianapolis, Indiana 46223

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A Presumed Case of Dextran-induced Anaphylactoid Reaction

To the Editor:—The article by Bernstein *et al.*[1] presents a severe reaction to dextran. However, the authors do not provide sufficient evidence that this reaction was a case of dextran-induced anaphylactoid reaction (DIAR). By virtue of his previous exposure to dextran, the patient described certainly was at risk of developing dextran reactive antibodies, and sustaining an allergic reaction to dextran on subsequent exposure. The temporal relationship between the dextran 40 infusion and the precipitous fall in arterial blood pressure was typical of DIAR.[2] Clinically, what mitigates against DIAR, in this instance, is the reported absence of skin manifestations (flush, erythema, urticaria) and bronchospasm.

Ljungstrom *et al.*[3] stated that the diagnosis of DIAR was dependent on circulatory symptoms being preceded by, or occurring in combination with, cutaneous symptoms or bronchospasm. Furthermore, for diagnosis of reactions of grade III and IV, dextran reactive antibody titers should be elevated in serum drawn before the reaction (obtainable from blood drawn preoperatively for cross-matching), and considerably reduced after the reaction.[4] Bernstein *et al.* did not do this. Examining this report by these criteria, a factor other than dextran would be judged to be the probable causative agent, and the reaction to dextran, in this instance, would be designated as non-likely.[3] Lacking the ability to measure dextran reactive antibody titers, the simple presence of an allergic reaction may be elicited through an abrupt rise in serial plasma histamine levels, and a sudden fall in serial plasma complement proteins C_3 and C_4 levels.[5] Unfortunately, these latter tests fail to elucidate the agent responsible for the reaction.

Large series of patients have shown that it is possible to confirm DIAR with a reasonable degree of certainty on the basis of specific clinical observations combined with laboratory investigations.[2,3] Bernstein *et al.* have made a presumptive diagnosis of a dextran-induced anaphylactoid reaction, without either of these.

JAMES A. JANZEN, M.D.
Resident in Anaesthesia
Department of Anaesthesia
University of British Columbia
Vancouver General Hospital
910 West 10th Avenue
Vancouver, British Columbia, Canada
V5Z 4E3

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In Reply:—We have, unfortunately, witnessed numerous episodes of DIAR. Severe hypotension without cutaneous manifestations or bronchospasm was common. While one might anticipate these to occur, Lungstrom's