

basis, verapamil is 1/50 as potent as nitroprusside in producing hypotension. Like nitroprusside, verapamil had a very short duration of action. Hypotensive responses to single injections of nitroprusside had largely dissipated within 2–3 min of injection, and those to verapamil, within 4 min. When the two agents were compared after 30-min infusions, using three different infusion rates of each, the hypotensive potency of nitroprusside relative to verapamil was found to be greatly decreased, nitroprusside being only four to five times more potent than verapamil. This was due to the fact that nitroprusside, but not verapamil, caused tachyphylaxis. Hypotensive responses to both agents were still rapid in onset, commencing within 30 sec of starting the infusion. However, the effects of nitroprusside (0.005–0.01 mg/kg/min) became maximal within 2 min, and thereafter showed a progressive and significant diminution throughout the course of infusion, while verapamil (0.02–0.1 mg/kg/min) took approximately 10 min to exert a full hypotensive effect, and thereafter blood pressure values remained remarkably stable (fig. 1).

In all experiments using nitroprusside, the hypotensive effects demonstrable after 20–30 min of constant infusion were significantly less ( $P < 0.001$ ) than those recorded shortly after commencing. Thus, for example, nitroprusside infused at 0.01 mg/kg/min

produced an initial decrease in blood pressure of  $62 \pm 9$  (SEM) torr, but despite the maintenance of a constant infusion rate of the drug, this dwindled within 30 min, to  $34 \pm 10$  torr. In contrast, verapamil 0.1 mg/kg/min, maintained the 60-torr decrease in blood pressure throughout the duration of the infusion. In our study, verapamil proved to be a potent and effective hypotensive agent, with a rapid onset and offset of action. When administered by intravenous infusion, its hypotensive effects were dose-related ( $r = 0.99$ ,  $P < 0.02$ ), well-maintained, unaccompanied by tachycardia, and had a somewhat less precipitous onset and offset than did those of nitroprusside. Verapamil appears to offer a possible advantage over nitroprusside in that it does not cause tachyphylaxis.

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### A Simple Pressure-infusion System for Blood

*To the Editor:*—Drs. Waldman and Rebane<sup>1</sup> suggest a Condflow regulator and high-pressure tubing to facilitate rapid, constant-pressure blood infusion using the Fenwal pressure-infusion system. May I suggest a readily available alternative? Our operating room uses the orthopedic tourniquet system driven by oxygen "E" cylinders. When massive, rapid infusion of blood is necessary, I simply ask for the tourniquet and connect it to the Fenwal pressure bag line with a double male luer adaptor. This provides the same advantage as the Condflow regulator, plus pressure indication, an on-off valve, and most importantly, no additional equipment expense.

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### Difficulty in Endotracheal Intubation Associated with Obstetric Anesthesia

*To the Editor:*—Although our several sources of information and statistical data cannot be disclosed at present, there has been an alarmingly high incidence

in the greater New York metropolitan area of difficulty performing endotracheal intubation, with consequent maternal and fetal complications, in women

undergoing general anesthesia for emergency cesarean section because of fetal distress. Being familiar with the specific case problems in our locale, we recommend that several actions be incorporated into the routine management of the obstetric patient. First, as with any patient about to undergo general anesthesia, assessment of the difficulty of endotracheal intubation should be part of the preoperative evaluation. When difficulty is anticipated, awake placement of the tube or regional anesthesia should be considered. Second, operation should not begin until adequate aeration of both lungs has been confirmed. When a difficult intubation is encountered without forewarning, anesthesia should be discontinued and the mother be permitted to awaken so that a different anesthetic method can be employed. Unless the section need be performed for an urgent maternal reason, such postponement may be lifesaving for the mother. Third, a means of instituting transtracheal ventilation, including a

sterile tracheostomy tray and a tube device such as that described by Stinson,<sup>1</sup> should be instantaneously available in every delivery room.

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### Consorts in the Delivery Room

*To the Editor:*—Observing the polarity of opinion expressed by Drs. Abouleish and DeVore/Asrani concerning husbands in the delivery room<sup>1</sup> brings to mind our own experiences where we have been called upon to minister to a variety of consorts (boyfriend, mother, or husband). It is our policy to ascertain what the consort's expectations are for this delivery. These may range from hostility engendered by nature not always being kind, to profound relief that the situation may soon come under control. If the consort wishes to be present during labor and delivery, we treat the consort much as we would a third-year medical student. By explaining to the consort everything we are doing for the mother/infant, we find that the consort either becomes an active member of the birth process or electively retreats to a position where viewing the procedure is impossible.

We do take the precaution of requesting the con-

sort to lie on the floor if he (she) feels ill and not to try to leave the delivery room. I cannot argue with the perception that there is an element of inconvenience in these situations. However, within teaching institutions, anesthesiologists are attuned to the inconvenience of observers by regular exposure to students and other faculty at their sides.

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### Another Cause of Gas-scavenging-line Obstruction

*To the Editor:*—Since the introduction of anesthesia waste-gas scavenging, there have been case reports of harm and potential harm resulting from mechanical obstruction of the scavenging line.<sup>1,2</sup> A hitherto unre-

ported cause of scavenging-line obstruction is here presented.

The scavenging system in use was a 15-foot length of plastic tubing connecting the circuit pop-off valve