an inverted 500-cc bottle, we measured the flow of gas that actually came through the flowmeter. With the flowmeter set at 250 cc/min the measured flow was approximately 1,500 cc/min. This would have delivered roughly six times as much volatile anesthetic agent as the flowmeter indicated. Early recognition of the problem probably prevented serious anesthetic overdosage. Following subsequent repair we verified calibration of the new system with a bubble flowmeter, finding it accurate.

The anesthesiologist must continually be on guard for the situation in which an anesthesia machine does not do what it is supposed to be doing.

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Obstetrics and Pediatrics

NEWBORN O_2 CONSUMPTION Oxygen consumption ($\dot{V}_{O_2}$) was measured in 68 infants during the first ten to 35 days of life by recording changes in circulating gas volume in a metabolic chamber. In infants weighing more than 2.5 kg, when environmental temperature (T_E) was 35 to 38 C, $\dot{V}_{O_2}$ increased from five to seven ml O_2/kg/min during the first two days of life. Physical activity and $\dot{V}_{O_2}$ both increased when T_E decreased below 33 C. The increase in $\dot{V}_{O_2}$ appeared to be related linearly and inversely to T_E, but the increase in heat production was seldom enough to prevent a decrease in rectal temperature. In infants weighing 2.5 kg or more, mean increase in $\dot{V}_{O_2}$ was 0.56 ml O_2/kg/min for each 1 C decrease in T_E when the infants were four to 12 hours old and 1.27 ml O_2/kg/min when they were between four and 20 days old. The maximum $\dot{V}_{O_2}$ in infants over 2.5 kg at birth and over two days old was about two and a half times the minimum $\dot{V}_{O_2}$. In seven infants who were motionless and apparently asleep after sedation with chloral hydrate, increases in $\dot{V}_{O_2}$ at low T_E were reduced but still significant. The newborn responds to a cool environment with a considerable and immediate increase in heat production. Visible muscular activity appears to account for only part of this increase. (*Hey, E. N.: The Relation Between Environmental Temperature and Oxygen Consumption in the Newborn Baby, J. Physiol. 200: 589 (Feb.) 1969.*)

SHUNT IN RDS Respiratory distress syndrome (RDS) is associated with total venous admixture (shunt) of up to 80 per cent of the cardiac output. This occurs at three sites: 1) in unventilated but perfused alveoli, 2) through a patent foramen ovale, and 3) through a patent ductus arteriosus. The arterial O_2 content difference above and below the ductus was determined by right radial artery puncture and descending aortic catheterization in 33 newborns with RDS. Serial studies of 17 newborns were done. Calculated shunt across the ductus proved to be less than 10 per cent of cardiac output in 30 infants. The maximum shunt was 21 per cent. Serial studies showed decreasing ductal shunt with advancing age, and no correlation of ductal shunt with *p*H, radial artery Pa_{O_2}, or survival. The data indicate that the ductus is not a major site of venous admixture in RDS. (*Murdock, A. J., and Swyer, P. R.: The Contribution to Venous Admixture by Shunting Through the Ductus Ateriosus in Infants with Respiratory Distress Syndrome of the Newborn, Biol. Neonat. 13: 194 (No. 3–4) 1969.*)