

reduction in gas flow was least at 35 psi and greatest at 20 psi.

DISCUSSION

This model demonstrates the relative impairment of gas flows during instrumentation through the bronchoscope. It suggests that there may well be an optimum pressure gauge setting for each type of instrument utilized. For example, when the telescopic lens or Roberts forceps is used, the proper pressure gauge setting is 35 psi or higher but less than 50 psi, since the greater degree of reduction of gas flow at the latter setting, using the aforementioned instruments, might cause turbulence.

Since the instruments studied are invariably used during bronchoscopy, proper attention to pressure gauge settings on the Sanders ventilating attachment is mandatory. Changes should be made to compensate for impairment of gas flow. The anesthesiologist will then be assured

of greater efficiency of the Sanders ventilating attachment in maintaining adequate ventilation of the patient.

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Neonatology

UMBILICAL-VESSEL CATHETERIZATION Umbilical-vessel catheterization is associated with serious complications: intravascular thrombosis, organ infarcts, infection, perforation, hemorrhage. This study is a review of umbilical-vessel catheterization in 143 newborns. Included in the group catheterized were: 1) all acutely ill infants requiring blood gas determinations; 2) all infants who needed inspired oxygen concentrations higher than 40 per cent for longer than an hour (to monitor Pa_{O_2}); 3) all infants weighing less than 1,200 g (to provide a stable route of infusion and to facilitate blood sampling).

Using sterile technique, umbilical-artery catheters were passed in 112 infants and umbilical-vein catheters in 31 infants. The tips of the arterial catheters were placed above the diaphragm in the descending aorta; the tips of the venous catheters were placed either in the right atrium or in the thoracic segment of the inferior vena cava. The locations of the catheter tips were ascertained immediately by x-ray and the catheters were attached to a constant-infusion pump.

The complication rate associated with umbilical-vein catheterization was 35 per cent, compared with 17 per cent for arterial catheterization. Although the passing of a catheter into the umbilical vein is technically easier, the anatomy of the venous system is such that unless the ductus venosus is properly aligned with the umbilical vein, misdirection of the catheter is possible—in this series, the catheter tip was placed in the right atrium or in the thoracic segment of the inferior vena cava in only 13 of 31 infants. The higher complication rate, together with the potential long-term complication of portal hypertension, makes the venous route less desirable than the arterial route. The arterial catheter complication rate, however, increased with increasing duration of catheterization, while the venous route showed no such correlation. The authors believe the risk of umbilical-vein catheterization outweighs its clinical usefulness except when the arterial route cannot be used. (Symansky, M. R., and Fox, H. A.: *Umbilical Vessel Catheterization: Indications, Management, and Evaluation of the Technique*, *J. Pediatr.* 80: 820-826, 1972.)