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Monitoring during Cardiopulmonary Bypass

To the Editor:—Complications resulting from aortic cannulation, although infrequent,¹ lead to devastating consequences, as in the case described by Ross *et al.*²

Malposition of the cannula can occur either during its insertion¹ or in the subsequent manipulation of the heart. Consequently, in our institution, we continuously monitor both the arterial line pressure and the perfusion pressure, the latter via the monitoring/perfusion cannula described by Phillips *et al.*³

When the perfusion cannula is inserted and before initiating bypass, we look for significant differences between the two pressures. If the aortic cannula is displaced, the pressure registered in the aortic cannula will be lower than the peripheral and the tracing displayed is "damped." If the malposition occurs during cardiopulmonary bypass, there is a sudden decrease in the arterial pressure, with an increase of perfusion line pressure and accentuation of the oscillatory pattern produced by the pump, as displayed in the oscilloscope.

We feel that simultaneous display and monitoring of both perfusion line and arterial blood pressures is essential to determine adequacy of cardiopulmonary

bypass. By its design, the Phillips cannula is a simple and accurate monitor of the perfusion line pressure. Constant attention should be paid by the anesthesiologist to discrepancies in pressures, as well as morphologic changes in the pressure displayed on the oscilloscope. In this way, serious complications secondary to cannula malposition can be avoided.

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