
A MODIFIED CIRCLE BREATHING SYSTEM

Sir,—It is more than 60 years since circle breathing systems were first described. They offer the advantages of economical use of inhalation anaesthetic agents, humidification of gases and reduction in pollution of the operating theatre. Their disadvantages are that the circuit is often cumbersome and the inspired concentrations of both oxygen and anaesthetic agents are not known precisely unless they are measured in the inspiratory limb of the system. Doctors are under constant pressure to reduce the costs of patient care. This is a laudable objective, but it must not be achieved at the expense of safety.

We have designed a modified circle breathing system which is safe, efficient and less cumbersome than traditional circle systems. A soda-lime canister is attached directly to the gas outlet of the anaesthetic machine. Thereafter the components are: a 2-litre reservoir bag; a 1.5-m length of 22-mm diameter breathing tubing and a transparent Ambu E valve. A further 1.5-m length of 22-mm tubing connects the Ambu E valve to the soda-lime canister via an exhaust valve attached directly to the canister (fig. 1). After induction of anaesthesia, relatively high fresh gas flows are used to obtain surgical anaesthesia with spontaneous ventilation. Thereafter flows are reduced to 500 ml min\(^{-1}\) of oxygen and 800 ml min\(^{-1}\) of nitrous oxide.

There is a major reduction in the amount of inhalation anaesthetic agent used. In order to be sure that the patient is being oxygenated adequately, both the inspired oxygen concentration and the arterial oxygen saturation should be monitored. It is useful also to measure end-tidal carbon dioxide concentration.

Although this breathing system does not conform to the most efficient arrangement for a circle system [1] its advantages are that it is lightweight; it attaches directly to the gas outlet of the anaesthetic machine; and it is inexpensive both to buy and to use. We have used it for the past year for spontaneous ventilation as a satisfactory alternative to other breathing systems in common use.

The breathing system is marketed as "The MIE Exeter Breathing System" and may be obtained from: MIE Dentsply, Falcon Road, Sowton Industrial Estate, Exeter EX2 7NA.

F. P. F. MARSHALL
B. W. PERRISS
V. J. RODRIGUEZ-GOMEZ
J. F. SEARLE
Exeter

REFERENCES