

REFERENCES

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An improved technique for the continuous measurement of arterial blood pressure in the conscious unrestrained cat

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Hall, Gomersall & Heneage (1967) described a one-way valve made from perspex and screwed into the skull which, after connection to a carotid artery, could be used for repeated periods of blood pressure measurement in the conscious, unrestrained cat. These workers used an identical valve for connection to a vein to enable drugs to be injected.

We found this method had several disadvantages which suggested that further development of the system was desirable. The main problems we encountered using the method of Hall *et al.* (1967) were: (1) Drilling of the skull for insertion of the valve bodies lengthened the operative procedure and was a potential source of failure.

(2) Some cats were bothered by the position of the valves and attempted to remove them.

(3) The valves tended to leak after several weeks in use and this led to blood clotting in the catheters.

(4) Skin surrounding the valve base frequently became necrotic and this led to unsightly weeping wounds which often became infected.

We have modified the arterial valve in several ways. Our valve is mounted on a base which is inserted beneath the skin at the back of the neck thus allowing some sideways movement. The valve and base are now made from a single piece of tetrafluoroethylene (P.T.F.E.) which has virtually abolished the skin necrosis. The height of the valve body has been increased and flat grooves added to each side so that it may be firmly held whilst making or breaking the connection to the recording device. The tendency for the valve to seep has been prevented by increasing the length of the internal stainless steel spring and by replacing the steel ball and rubber washer by a nylon ball and a neoprene washer.

The valve for the venous side has been dispensed with and replaced by a length of fine polyethylene tubing (pp 30) closed with a pin.

The valve arrangement has been used for periods up to 6 months without trouble and thus allows long-term changes in cardiovascular responses to be measured. The valve, together with connector and dust cap, all of which are now commercially available, will be demonstrated in use.

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