CORRESPONDENCE

Circulatory Isolation of the Head

To the Editor.—The article by Price, Linde and Morse \(^1\) in your journal provides an interesting new approach towards solving the problem of the cause of halothane induced hypotension. However, there is one point which appears to have been overlooked in the technique that was used.

Perfusion of the cephalic circulation was obtained by retrograde perfusion through the ligated axillary artery, whilst the flow in the brachiocephalic and omocervical arteries was obstructed. Blood flow through the left vertebral artery was prevented by obstructing the left subclavian artery. Blood was then flowing from the perfusion apparatus through both carotid arteries and the right vertebral artery to the head. No mention was made of the right internal thoracic and the right costocervical arteries,\(^2\) both of which are particularly difficult to approach (in my experience) without removing the first rib. These arteries were probably also receiving blood from the perfusion. As the right costocervical artery supplies blood to the right stellate ganglion it seems likely that this ganglion was being perfused, and it is possible that the left stellate ganglion also received blood from the perfusion by retrograde flow through the left vertebral and left costocervical arteries, and possibly the anastomosing intercostal arteries as well.

In a series of experiments in this laboratory in which the stellate ganglion was perfused by a technique remarkably similar to that described by Price and his colleagues, it was possible to show that halothane can produce ganglionic block in the stellate ganglion of cats. It is possible that stellate ganglion block occurred in the experiments described by Price and his colleagues.

Consequently the effects they describe (namely a reduced heart rate, a reduction in myocardial contractile force and mean arterial blood pressure) could still be the result of ganglionic block uncomplicated by central effects or a combination of both.

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To the Editor.—Dr. Purchase’s comment emphasizes the problems involved in attempting to secure circulatory isolation of the head. Our technique was not described in full detail in the original publication because of its complexity. A further description is given below.

After the sternum was split the internal thoracic arteries were ligated bilaterally. The numerous branches of the brachiocephalic artery beyond the origin of the right vertebral artery, including the costocervical, omocervical, and internal thoracic arteries, were ligated under direct vision, using both a thoracic and an axillary approach. It was not necessary to remove a rib. The left vertebral artery was identified and a ligature passed around it. This artery was clamped in several cases after head perfusion had begun, but in most experiments the left subclavian artery was ligated instead just beyond the origin of the vertebral artery, thus eliminating the access of blood to the costocervical, omocervical, axillary, and internal thoracic arteries on the left. Subsequently, the left subclavian artery was also clamped below the origin of the vertebral artery. For these reasons the stellate ganglia were not perfused in the manner suggested by Dr. Purchase.