is an excellent holder for a venous or intraarterial pressure manometer. A right-angle hook can be fitted into the one end. This is a convenient holder for an aneroid manometer and stethoscope. The whole assembly can be adjusted to the desired height. These devices have been in use for over five years. The simplicity of quick multiple drug administration and circulatory monitoring has been gratifying.

CASE REPORTS

Delayed Postanoxic Encephalopathy

Dr. Philip Toker *

The immediate neurological effects of cerebral anoxia are very well known. A form of encephalopathy that may follow, after complete clinical recovery from anoxia, has so far attracted little attention.

Dr. Philip Toker believes, in view of the scarcity of reports on the subject, the following case is of interest.

Report of Case

A 7 year old healthy, male child was admitted for repair of a small umbilical hernia. Atropine, 0.4 mg., was given as premedication. Induction of anesthesia was with 150 mg. thiopental sodium 2½ per cent followed by 20 mg. succinylcholine chloride. The lungs were inflated with oxygen and the trachea intubated without difficulty. Anesthesia was maintained with oxygen, nitrous oxide, and ether, using an absorber with an intentional leak. The anesthetic and operation which lasted approximately one-half hour were uneventful. Frequent palpation of the radial pulse and the color of the patient gave no cause for alarm. There was practically no shock attached to the operation, bleeding was minimal, and the blood was of good color. As the operation was almost finished, the normal pink color of the patient's face changed to extreme pallor, the radial and carotid pulses were absent and on auscultation of the chest, no heart beat was audible. The surgeon immediately opened the chest and found the heart in asystole. After the heart was massaged 3 or 4 times, it resumed a normal rhythm and a radial pulse of 80/min. returned and the systolic blood pressure was 116 mm. of mercury. An intravenous drip of 5 per cent glucose in water was started and 15 ml. of 50 per cent sucrose given intravenously and the patient was returned to the ward. When seen in the ward shortly after, he was still unconscious. It was then decided to cool the patient, and his rectal temperature was brought to and maintained at 35°C. On the third postoperative day the patient's condition had improved and cooling was discontinued. A short while after the temperature returned to normal the patient began to speak and answered questions rationally. He made continued progress—both physically and mentally, had many toys with which he occupied himself, ate his food, slept well, was happy, and considered to be out of danger and well on the way to recovery.

* Baltimore City Hospitals, Baltimore.
Three days after regaining consciousness, his mental condition deteriorated suddenly. Although his physical condition remained satisfactory, he lost all interest in his surroundings, had a vacant gaze, did not utter a word, did not recognize his parents and became incontinent. When food was placed before him he ate only when fed slowly and laboriously by members of the nursing staff. Four days later a psychiatrist expressed the opinion that the child had regressed to babyhood and would require re-education. This state of affairs lasted one week. The patient again began to speak, ask for things, but still took little interest in his surroundings. At the same time he became emotionally unstable. He frequently cried bitterly with tears rolling down his cheeks and appeared to be most unhappy. He did however regain control of his sphincters and would climb out of his cot and go to the lavatory when necessary. His mental condition slowly improved. He gradually, again, began to take an interest in his toys, the ward, the other children and his parents. Fourteen days after the relapse he had sufficiently recovered both physically and mentally to be discharged from hospital. When seen again three months later the child was well and back at school.

Discussion

Shillito and associates\(^1\) reported 13 cases of delayed postanoxic encephalopathy among 21,000 cases of carbon monoxide poisoning, from which one might infer that the condition was uncommon.

Plum and co-workers,\(^2\) in a carefully prepared and detailed examination of the condition, reported on five cases. They believe that the “problem is not rare, and that the diagnosis is often overlooked and many patients are originally thought to have psychiatric disease.” The cause of the condition is unknown—nor can one forecast which cases will relapse. Furthermore they state “that although there are no satisfactory validated measures which will prevent postanoxic encephalopathy, avoiding early physical activity may be prophylactic.”

In our case, physical activity was certainly not a precipitating cause—as the patient was confined to bed, because some cardiac damage was at one time suspected. Only when the cause or causes of this condition are understood will we be able to follow some rational line of prophylaxis.

I wish to thank Dr. R. L. Retief, acting Superintendent, for permission to publish, and Drs. J. J. Jacobs, L. Shubitiz, L. Kaplan, M. Kleyhnans and U. F. McKenzie for valuable advice and assistance in treating the case.

References


Halothane Anesthesia in the Paraplegic Patient

Anne S. Drinker, M.D.,
Martin Helrich, M.D.*

Drs. Drinker and Helrich, submit the following case report.

The phenomenon of a mass autonomic reflex during anesthesia in paraplegics characterized by severe hypertension, headache, bradycardia, nasal congestion, cutis anserina, and blushing associated with manipulation of the pelvic viscera, especially distension of the bladder and rectum, has been studied by many authors.\(^1\), \(^2\) It is more commonly observed in patients with cord lesions of the fifth thoracic segment or above. In the series reported by Ciliberti, Goldfein and Rosenstine,\(^1\) 42 per cent had hypertensive crises with a rise in systolic blood pressure of over 50 mm. of mercury, the highest being 160 mm. of mercury. Bilateral thoracic-lumbar sympathetic block neither prevented nor controlled the hypertension, but control was possible with ganglionic blocking agents such as hexamethonium. Spinal anesthesia was also effective in blocking the reflex. This report deals with a hypertensive crisis occurring during a transurethral resection on a paraplegic and is pre-