

for abdominal surgery was used. Curare was used to provide relaxation when the duration of the spinal anesthetic was not sufficient to complete the operation. General anesthesia was induced and maintained in a light plane. Curare was then given five to fifteen minutes before closure of the peritoneum or earlier if the surgeon required further relaxation. Few changes in circulation followed the use of curare in either of the first two groups of patients.

The third group of patients were poor-risks and required abdominal surgery. Light premedication was used, intravenous fluids were started and cyclopropane anesthesia was induced and maintained in the first plane of the surgical stage. Abundant oxygenation was provided. Small doses of curare were used until satisfactory relaxation was produced. Less than 50 mg. and as much as 150 mg. of curare was required. Although some of the patients in this group were moribund before the operation, there was no death during the operation or during the immediate postoperative period.

The fourth group was made up of patients who required endotracheal anesthesia. Cyclopropane or pentothal sodium was induced and curare was simultaneously administered in doses of 20 to 50 mg. Further doses were given every three or four minutes. Within eight to ten minutes the intubation was done with ease. There were some cases in which rhythmic breathing stopped, and there was cessation of breathing, interrupted with occasional jerky inspirations. Resistance to inflation of the lungs during this period indicated the presence of bronchial spasm.

The recovery period for all of the cases of all of the groups was generally brief and uneventful. Two patients showed postoperative respiratory de-

pression, probably due to hypoxia during periods of shallow breathing. In one patient postoperative depression was followed by a fatal outcome. references.

F. A. M.

THOMPSON, S. A., AND ROCKEY, E. *The Effect of Mechanical Artificial Respiration upon Maintenance of the Circulation.* Surg., Gynec. & Obst. 84: 1059-1064 (June) 1947.

A method for determining the effect of mechanical artificial respiration upon the circulation when the heart is no longer beating is described. Oxygen (used as a tracer substance) was introduced into the vascular system of animals immediately after death and movement of the tracer observed during inflation and deflation of the lungs.

It was shown that mechanical inflation and deflation of the lungs produces an actual movement of the blood column and that the blood can be circulated over the whole body without benefit of any heart action whatever. The use of heparin prevents clotting and keeps the blood in a fluid state. As a result, blood can be more effectively circulated and this increases possible survival time.

Those mechanical resuscitators employing positive and negative pressure were more efficient in circulating blood than were those employing only positive pressure and release or negative pressure and release.

M. F. P.

GRAY, T. C.: *d-Tubocurarine in Caesarean Section.* Brit. M. J., (April 5) 444-445, 1947.

Fifty caesarean operations were done with anesthesia supplemented with d-tubocurarine. Atropine 1/100 gr. (0.65 mg.) was given one hour before operation. When the surgeon is ready the induction is carried out by an in-