155 to 140 mm. systolic and from 100 to 90 mm. diastolic and the pulse from 120 to 90. The transurethral resection was completed in an hour. No eye symptoms or abnormalities followed the spinal anesthesia and operation.

On July 3, 1947, the patient was given nembutal 0.1 Gm. at 12 noon and morphine 4 mg., scopolamine 0.2 mg. at 1 p.m. The blood pressure was 140 mm. systolic and 90 mm. diastolic, the pulse 80, and respirations were 20. Without prophylactic vasopressor, a spinal puncture was made with a 22-gauge needle. Pontocaine 8 mg. and dextrose 80 mg. (10 per cent) mixed with 1.4 cc. of spinal fluid was administered. The level of anesthesia was established at the sixth thoracic segment. The patient was put in an exaggerated lithotomy position for perineal prostatectomy, which was completed in two hours and twenty-five minutes. During the procedure, he received 500 cc. of blood and 750 cc. of physiologic saline solution. The blood pressure ranged from 135 to 120 mm. systolic and from 85 to 80 mm. diastolic and pulse from 80 to 65. Respirations remained at 20. In this position, the patient was lying on the upper part of his back. He was actually in a Trendelenburg position, although the table top was parallel with the floor. For this reason, the sensory level may have extended higher than the sixth thoracic segment.

On the first postoperative day, the patient noted blurred vision and difficulty in reading. Mild photophobia was present also. On the third postoperative day, he had a frontal headache for several hours which was relieved by emesis of undigested food. About the tenth day after operation he first noted double vision on looking to the right side. Examination revealed partial paresis of the right external rectus muscle. There was binocular diplopia in the field of the right external rectus, indicating involvement of the right abducens nerve. By July 30, diplopia was barely detectable to the patient, and by August 14 it was entirely absent.

SUMMARY

Unilateral paralysis of the abducens nerve was observed in a patient one day after spinal anesthesia, produced by 8 mg. of pontocaine and 80 mg. of 10 per cent dextrose. The patient had received two spinal anesthetics within an eight-day period. This complication was noted following the administration of the second spinal anesthetic agent. The duration of the abducens paralysis was approximately six weeks.

WILLIAM M. PARKE, JR., M.D.,
Department of Anesthesia,
Grasslands Hospital,
Valhalla, N. Y.

ACRYLIC TRACHEOSTOMY ADAPTER FOR INHALATION ANESTHESIA

Battle casualties with severe maxillofacial injuries, especially those with mandibular and mouth involvement, present anesthetic problems at best. In some cases in which the tongue had no support and the airway was inadequate, prophylactic tracheostomy was performed before any further definitive surgical procedure was attempted.

The difficulty of induction and maintenance of anesthesia with a functioning tracheostomy has been solved by Holinger and Cassels by removing the tracheostomy tube and inserting an anode tube directly into the trachea (1). Another method is to use the adapter as described by Sanders (2).

Neither of these methods was available at the front, so rubber and metal tubes between the tracheostomy tube opening and the anesthetic machine were used. All proved to be unsatisfactory. This was owing to the narrow lumen, increased dead space, leakage and physical instability of the system. These factors led to the idea of incorporating the tracheostomy insert into an acrylic adapter.

This adapter accommodates the tracheostomy tube to a short, wide-bore rubber tube leading to the machine. It is

desirable to have an adapter for each size tube, but when this is not feasible, a number 5 insert can be used. This will fit other adult sizes well enough that the system is airtight and the diameter of the lumen still not sacrificed.

The procedure for producing this acrylic adapter is as follows:

Wax a 2 inch piece of glass tubing (straight or with a 90 degree curve) to the external aspect of the inner tube. This size tubing is conveniently obtained by using a discarded dental anesthetic carpule, which, if desired, can be bent by heating over a Bunsen burner. Mold pink dental baseplate wax around the glass to conform to the size and shape desired. Incorporate the flanges of the inner tube for increased strength of the junction. Invest the wax-up in plaster in a denture flask, with approximately one-half of the cross-sectional contour of the wax extending into each half of the denture flask. Allow one-half inch of the glass tubing to protrude from the distal end of the finished wax-up to insure good anchorage in

the plaster. Boil out the wax after the plaster hardens, pack in clear acrylic material and process. Cut off the excess glass tubing and buff the end flush with the acrylic. Since the bore of the glass tubing obtained from a dental carpule is about the same as that of a number 5 tracheostomy inner tube, the glass may be left in place. After polishing, the adapter is ready for use.

The clinical use of the adapter was found to be quite satisfactory by those of us who worked in the 39th Evacuation Hospital in the European Theater of Operations.

REFERENCES

1. Holinger, P. H., and Cassels, W. H.: Endotracheal Anesthesia for External Laryngeal Surgery, Anesthesiology 5: 583–588 (Nov.) 1944.
2. Sanders, R. D.: New Endotracheal Instruments, Anesthesiology 8: 57–61 (Jan.) 1947.

LLOYD A. GITTELSON, M.D.,
Chicago, Ill.
HARVEY A. STONE, D.D.S.,
New York, N. Y.

CORRESPONDENCE

To the Editor:

A reprint (by Mallinckrodt) of the article "Anesthesia for the Patient in Shock" by R. B. Gould in *Anesthesiology,* 5: 129 (Mar.) 1944 brought to my attention this statement:

"Postoperative pulmonary complications, which many physicians attribute to irritation of the alveolar mucosa by ether, may occur if the vapor administered to the patient is saturated with ether at a temperature much higher than that of the body, when cooling of the vapor in the lungs might cause condensation of ether in liquid drops."

The first point I wish to bring up in the above statement is that it is impossible to deliver ether to the face piece of any machine at a higher temperature than the room temperature (about 20 C.) because of the low specific heat* of ether vapor (.0016 cals.); the usual 10 per cent ether vapor has a specific heat of only 0.004 cals. In other words we know that the temperature of ether is easily raised and conversely it is easily lost. It is just impossible to deliver it above room temperature.

The second point I wish to bring out is that the boiling point of ether is about 35 C. and the temperature in the alveoli is 37 C., so that even if you could accomplish the first point how much more impossible would be the latter.

EDWARD B. MACON, M.D.,
701 East Capitol Street,
Washington, D. C.

* The specific heat of a substance is the number of calories required to raise the temperature of 1 Gm. of that substance by 1 C.

To the Editor:

In this country adjustable metal armboards are not provided for operating room tables either for intravenous anesthesia or supportive therapy. An improvised ordinary wooden armboard, inserted under the mattress of the table and kept in place by the patient's own weight, will be satisfactory in quite a number of general surgical cases. I have been embarrassed several times, however, while using the continuous drip method of natrium pentothal combined with curare, particularly in gynecologic cases when steep Trendelenburg position has been employed. In such cases the armboard instead of being placed horizontally (flat) is turned sideways to an angle approximately 75° which makes the arm hang down without support being fixed only by bandage. After a considerable time the arm becomes blue due to venostasis. Apart from this there is constant danger of the needle slipping out or even of the arm being knocked by the surgeon's leg.

The brief report by Dr. Searles and Dr. Guest which appeared in Volume 8 of ANESTHESIOLOGY (Sept.) 1947, does not give the solution in cases of steep Trendelenburg.

The Adams-Rogers arm or leg board described in Lundy's Clinical Anesthesia and in Adams' Intravenous Anesthesia is adjustable mostly for either abduction or adduction of the board with the fixed arm, but it hardly provides a satisfactory solution for rotating the board about its own axis.