accuracy. It can serve as a routine technique when the arm cannot be used, or whenever the blood pressure in the leg must also be determined.

REFERENCES
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Tracheostomy Obstruction Secondary to a T-Adapter

Roger C. Millar, M.D.,* and Alfred S. Ketcham, M.D.†

T- adaptors or T-tubes are frequently used by inhalation therapy and intensive care personnel. They are designed to deliver humidified, oxygen-enriched gases to a patient with an endotracheal or tracheostomy tube. This communication reports a potentially lethal defect in a disposable T-adaptor.

REPORT OF A CASE
A 37-year-old Caucasian man had Stage II-A Hodgkin’s disease, which was diagnosed in January 1968. Initial treatment consisted of radiation therapy to the cervical, axillary, and mediastinal nodal areas (dose = 4,000 rads). After irradiation, he developed bilateral pleural effusions which necessitated periodic thoracocentesis. No evidence of Hodgkin’s disease was found either in the pleural fluid or by pleural biopsy. Because of increasing shortness of breath and an entrapped right lower lobe, a right thoracotomy was performed. A thick, fibrous peel was removed from the right lower lobe and from the chest wall. Postoperatively, the patient needed prolonged intubation and respiratory support. His endotracheal tube cuff was deflated for 5-10 minutes every two hours, during which time the tube was attached to a T-adaptor (fig. 1). A tracheostomy was performed on the twelfth postoperative day. By the twentieth postoperative day, the patient tolerated 30 minutes of every two hours off the respirator on the T-adaptor. At 4:00 AM on that day, the T-adaptor fell on the floor and was changed.

At noon, the patient was not tolerating being on the T-tube very well and was able to talk around

* Clinical Associate, Surgery Branch, National Cancer Institute, National Institutes of Health, Bethesda, Maryland 20014.
† Clinical Director and Chief, Received from the Surgery Branch, National Cancer Institute, National Institutes of Health, Bethesda, Maryland 20014. Accepted for publication October 12, 1972.
his tracheostomy tube. Examination revealed intraluminal build-up of inspissated mucus in the tracheostomy tube. The tube was changed, with improvement in respiration. However, when the T-adapter was reconnected, the patient could again plunxate. Inspection of the T-adapter revealed an imperforate sidearm.

**DISCUSSION**

Fortunately, the patient survived this insult. The potential life-threatening implication needs to be stressed. When this defective T-adapter is used on an endotracheal tube with the cuff inflated, complete airway obstruction occurs. With the cuff deflated, partial airway obstruction results from the occluded tube. Partial obstruction of this type in a patient who is thought to be receiving humidity and oxygen-enriched gases could lead to hypoxia, cardiac arrhythmia, and possibly cardiac arrest. This series of events could occur rapidly in a patient with marginal reserve.

This defective T-adapter was not as apparent as one might think. Our patient had been placed on the T-adapter as illustrated four times over an eight-hour period before the flaw was discovered. We recommend that the forced expired tidal volume of any patient who has an endotracheal tube in place and is breathing spontaneously be measured. Although the measured tidal volume is not accurate, it indicates that a functional airway is present. Periodic measurements may also be of help in evaluating a patient's ability to be weaned from a respirator. The defective T-adapter reported in this case would have been detected much sooner had expired tidal volume been measured.

Defective equipment such as this T-adapter should be found prior to being used on patients. Careful inspection of our hospital stock of T-adapters turned up two more T-adapters with imperforate sidearms. Physicians, nurses, and inhalation therapy personnel must be alerted to inspect disposable T-adapters prior to their use. The era of disposable medical equipment may introduce an added risk of defects in rapidly-made items, such as the T-adapter described in this communication.