Tohoku Univ. Technology

Air Leakage Measurement System

Easy detection of air leaks in the lungs, such as pulmonary fistulas

Overview

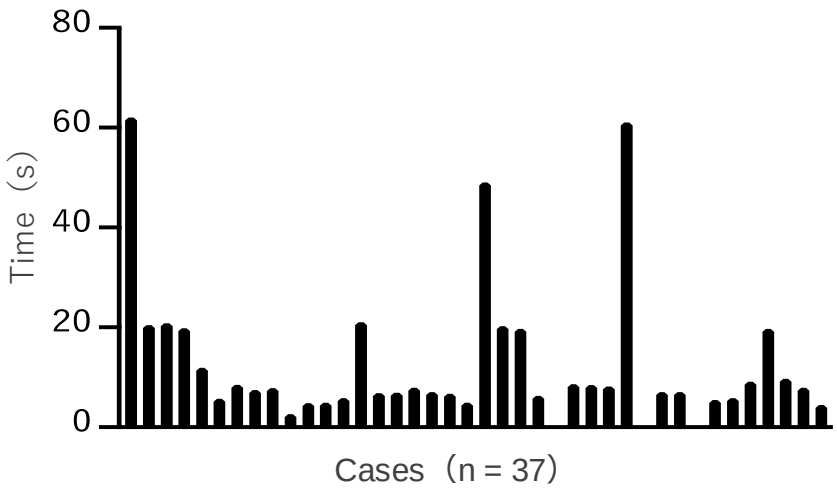
Pulmonary fistula is a frequent complication after pneumonectomy, and the classic water seal test is still the main method of identification and evaluation. However, in the conventional method, it is necessary to remove the fistula by filling it with saline many times for evaluation of the repair, and the saline decreases the adhesion during the repair using the sheet. In recent years, another method has been reported to identify the aerosol of indocyanine green by inhaling it and using a near-infrared camera. However, since the work is complicated and the safety is unknown, a simpler method is required.

Dr. Yui Watanabe of the Department of Respiratory Surgery, Institute of Aging Medicine, Tohoku University, found that monitoring the local oxygen concentration in the thoracic cavity can easily and accurately evaluate a pulmonary fistula in a short time. The present invention relates to a pulmonary fistula evaluation system and a medical device equipped with the system. If the development and implementation of the air leak detection device according to the present invention is realized, the identification and evaluation of a pulmonary fistula can be performed more easily than the conventional method.

Product Application

- ☐ Medical equipment

Detection time average 13.5 sec (94.9%,37/39)



Related Works

[1] Murai S, Watanabe Y, et al. Intraoperative evaluation of pulmonary fistula using a multi-functional respiratory monitor. The 123rd Annual Meeting of the Japanese Surgical Society, Tokyo, April 2023.

IP Data

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