Intraoperative Circuit Leak Likely Caused by Surgical Prep

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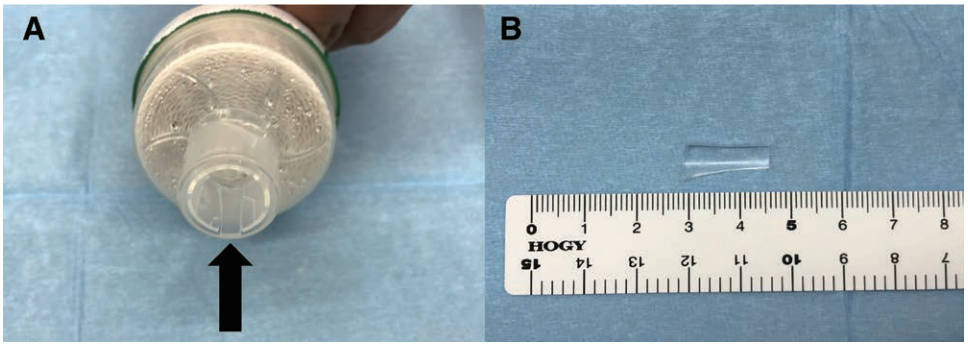

Five hours after intubation, a circuit leak was noticed. The care team checked the tracheal tube, respiratory circuit, and cuff pressure for potential leaks and found that there was a large crack on the heat and moisture exchanger (Japan Medicalnext, Japan) and a piece of debris beside the patient's head (fig. 1). After replacing the heat and moisture exchanger with a new one, no leak was detectable and surgery was completed uneventfully. This happened to an adult patient under general anesthesia with a nasal endotracheal tube for tongue resection. Preoperatively, the breathing circuit was checked and no circuit leak was found. The surgeon prepared the neck, face, proximal end of the endotracheal tube, and the distal portion of the circuit including the heat and moisture exchanger with 0.5% hexizac alcohol solution (usually disinfected with iodine solution in our hospital). The manufacturer reported that alcohol caused damage to the heat and moisture exchanger. However, the anesthesia and surgical team were not aware of this possibility and an alcohol-based disinfection prep was used. We believe that the heat and moisture exchanger damage (similar to other reports[1,2]) was caused by alcohol-based disinfection, and we were able to reproduce the damage (Supplemental Digital Content, video 1, http://links.lww.com/ALN/C397). The prevention of such damage is key and can be achieved by (1) using a non–alcohol-based disinfection prep, (2) covering the tube and the distal portion of the circuit with a sterile sheet, and (3) placing a heat and moisture exchanger at the proximal end of each limb of the circuit.[3]

Competing Interests

The authors declare no competing interests.

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Published online first on May 20, 2020. From the Department of Anesthesiology, Asahi General Hospital, Asahi City, Japan.

 Anesthesiology 2020; 133:426. DOI: 10.1097/ALN.0000000000003382