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**Early Reports of Pulmonary Aspiration during General Anesthesia**

*To the Editor:*—In his editorial "NPO after midnight for children— a reappraisal," Coté refers to the first reported pediatric anesthetic death, in April 1848. This was the well-documented case of Hannah Greens. The frightened 15-year-old girl died less than 2 min after starting to inhale chloroform, while sitting in the operating chair, when the incision was made for removal of a great toenail. There is no evidence that aspiration of gastric contents occurred. No vomiting was observed by her medical attendants and, because of the sitting position, silent regurgitation of gastric contents into the pharynx was physiologically impossible. Autopsy revealed that the stomach was distended with food, but none was found in the bronchial tree, which contained bloody froth mixed with mucus. Simpson did not suggest that death was caused by aspiration of gastric contents; he claimed that it was the result of inhaling the brandy that was given for resuscitation, although the anesthesiologist stated that the brandy was administered after the girl had collapsed.

Snow's opinion, after reviewing the sequence of events, was: "From the lips becoming suddenly blanched, there is every reason to conclude that the heart was suddenly paralyzed." He documented 40 similar cases and concluded that the cause of death in every case was cardiac
syncope, and not overdose of chloroform. The exact cause of this type of sudden death—fear combined with light chloroform anesthesia producing ventricular fibrillation—was elucidated by Levy in 1912.6 By September 1848, 6 months after Hannah Greener’s death, Simpson7 had collected 743 cases of chloroform administration in his own and his colleagues’ obstetric practices. There had been no deaths from any cause. This could have been due to underreporting, although, in view of religious and medical opposition8 to the use of anesthetics in obstetrics in 1847–1848, it would be surprising if a maternal death under chloroform escaped notice. The first detailed description of death from inhalation of gastric contents was published in 1862,9 14 yr after Hannah Greener’s death. Even with untrained anesthesiologists, therefore, and in the absence of tracheal intubation, death from inhalation of gastric contents was uncommon. It is now a very rare occurrence, and Coté is right to question the enormous amount of time and effort that has been expended to prevent a problem which, in healthy elective patients, may not be clinically important.

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In Reply—Dr. Maltby is certainly correct that Hannah Greener did not aspirate gastric contents.1 This case is an indication for how many years anesthesiologists have been concerned with pulmonary aspiration, whatever the etiology. As I wrote, the patient may have aspirated Brady, since that was suggested by the words used by Simpson; my reference to this case was a clarification of what has been reported as pulmonary aspiration.2,3 It is always interesting to follow-up index cases such as that of Hannah Greener. She apparently also could have been the victim of ventricular fibrillation associated with light chloroform anesthesia.

In the original report, Simpson quoted Mr. Meggison, “I gave her some brandy, a little of which she swallowed with some difficulty.” Her father testified that “she moaned after the nail was off; he (Mr. Meggison) afterwards put some brandy in her mouth, and she ratted in her throat.” Simpson went on to state, “The attempt at swallowing was . . . I have no doubt an attempt at breathing . . . but it was impossible . . . in her weak and torpid state . . . to inspire through a medium of water and brandy . . . and . . . the liquid would be partially drawn into the larynx (she ratted in her throat).”10 The autopsy reported “lungs in a high state of congestion . . . bronchi filled with bloody froth . . . mixed with mucus, and a reddened larynx and epiglottis.” These findings could be consistent with either aspiration of the brandy or pulmonary edema secondary to attempts at inspiration against an obstructed airway.4 The true cause of death in the Hannah Greener case still remains speculative. The bottom line is that anesthesiologists have been appropriately concerned with airway-related events for over 100 years. However, many of our best lessons are learned by reexamining previous experience.

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Linear Regression Is a Poor Descriptor of Accuracy

To the Editor—Urbanowicz and colleagues erroneously conclude that transesophageal echocardiography (TEE) provides a reasonable estimate of ejection fraction (EF) after cardiac surgery.1 This incorrect conclusion is based primarily on the common yet mistaken impression that good association implies good accuracy. Linear regression is a poor descriptor of accuracy.2,4 Its proper uses