Somnoforme: A Century After the Introduction of the “Ideal” Anesthetic Gas

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ABSTRACT

Since the introduction of ether as a general anesthetic, there has been a continuous quest to develop the “ideal” anesthetic gas. The problem of the ideal anesthetic gas has revolved over time. In the beginning of the 20th century, the search for the ideal anesthetic gas was focused upon finding an anesthetic gas with rapid inhalational induction and rapid emergence that could be delivered without cumbersome equipment and would have limited potential for toxicity.

Somnoforme was a mixture of ethyl chloride, methyl chloride, and ethyl bromide designed to provide considerable efficiency with the potential for low toxicity. Somnoforme was developed by Dr. George Rolland, Director of the Dental School and first formally presented to the Congress of the French Dental Association for the Advancement of Sciences on September 10, 1901.

The major American distributor for Somnoforme, E. de Trey & Sons of Philadelphia, advertised the Somnoforme inhaler as depicted by Dr. William H. de Ford: ‘The de Ford inhaler as described by Dr. William H. de Ford. The de Ford inhaler was the preferred delivery device since it was light-weight, simple, and resistant to damage. Clinical enthusiasm for somnoforme was short-lived. It received a period of enthusiasm, Somnoforme saw limited use until it was totally abandoned in 1931.

In retrospect, the proclamation of the formulation of an “ideal anesthetic” was premature as that search continues to this day. However, even some contemporary physicians were skeptical and offered sage wisdom which endures a century later. In response to claims of new “safe” anesthetics, an editorial in the Journal of the Medical Times from January 1908 came to this astonishingly modern conclusion.

CONCLUSIONS:

The Rise of Somnoforme:

Somnoforme was developed by Dr. George Rolland, Director of the Bordeaux Dental School and first formally presented to the Congress of the French Dental Association for the Advancement of Sciences on September 10, 1901. Somnoforme was a mixture of ethyl chloride (60%), methyl chloride (35%), and ethyl bromide (5%) designed to provide powerful efficacy with low potential for side effects by blending of several volatile vapors. Somnoforme was conveniently packaged in small ampoules (figure 2) and was irreparably tarnished when an American distributor was discovered to be selling the apparatus and would have limited potential for toxicity.

In fact, Dr. Rolland allowed himself to be anesthetized with somnoforme while his radial artery pulse was monitored with a sphygmograph. The resultant pre-anesthesia and intra-anesthesia pulse tracings (figure 2) were published in the Journal of the British Dental Association in 1902 and demonstrated an increased amplitude of the arterial waveform under anesthesia. This made somnoforme remarkably different than ether or chloroform.

In patients receiving somnoforme by inhalation, blood pressure increased without significant change in heart rate or respiratory function (figure 4). Rapid inhalational induction without excitation was viewed as an important advantage over contemporary anesthetics. The de Ford inhaler was the preferred delivery device since it was light-weight, simple, and resistant to damage. Clinical enthusiasm for somnoforme was short-lived. It received a period of enthusiasm, Somnoforme saw limited use until it was totally abandoned in 1931.

The demise of Somnoforme:

Somnoforme was well-received by patients. Although disinclination from emergence from anesthesia was common, patients rarely reported dysphoria. The sensation was typically described as “gaiety, joy, rapture, angel or religious ecstasy.”

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In part, this was because somnoforme failed to meet the contemporary definition of an ideal anesthetic gas since it had significant potential toxicity. In patients receiving somnoforme by inhalation, blood pressure increased without significant change in heart rate or respiratory function (figure 4). Rapid inhalational induction without excitation was viewed as an important advantage over contemporary anesthetics. The de Ford inhaler was the preferred delivery device since it was light-weight, simple, and resistant to damage. Clinical enthusiasm for somnoforme was short-lived. It received a period of enthusiasm, Somnoforme saw limited use until it was totally abandoned in 1931.

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