Aspiration during Vaginal Delivery

To the Editor:—The conclusion drawn by Krantz and Edwards (ANESTHESIOLOGY 39:359, 1973) that the incidence of clinically significant aspiration during vaginal delivery under light general anesthesia may be less than generally assumed should not mislead other practitioners into relaxing their vigilance.

During the years 1962–65, by Krantz and Edwards' own figures, the true incidence of aspiration was 1 in 3,200. The improvement to 1 in 11,000 since 1965 may, in part, be attributed to the difficulty in actually anesthetizing patients by inhalation of methoxyflurane, with its low volatility. An aspiration rate of 1 in 430 together with a mortality rate from acid aspiration of 1 in 3,076 for cesarean sections is certainly not acceptable, since all of these should be preventable.

TABLE 1. Times between Last Meal and Onset of Labor and Volumes Aspirated from Maternal Stomachs at Delivery in 92 Patients Selected at Random

Time between Last Meal and Onset of Labor		Mean Volume Aspirated and Range (ml)	
0–4 hours	(n = 8)	41	(2–210)
4–8 hours	(n = 26)	40	(3–250)
8–12 hours	(n = 31)	26	(2–100)
>12 hours	(n = 9)	30	(2–100)
After onset of labor	(n = 8)	112	(3–350)

TABLE 2. Volumes of Maternal Gastric Contents at Delivery in 92 Patients in Labor Selected at Random

Time between Last Meal and Delivery		Mean Volume Aspirated and Range (ml)	
0–8 hours	(n = 9)	65	(3–350)
8–12 hours	(n = 18)	60	(5–210)
12–16 hours	(n = 28)	33	(2–250)
16–20 hours	(n = 26)	24	(3–100)
>20 hours	(n = 11)	53	(5–220)

TABLE 3. Times since Last Meal and *p*H's of Maternal Gastric Contents at Delivery Following Labor in 47 Patients Selected at Random

Time since Last Meal		Mean *p*H ± SD and Range	
0–8 hours	(n = 5)	2.0 ± 0.6	(1.4–2.9)
8–12 hours	(n = 11)	3.5 ± 1.5	(1.4–6.6)
12–16 hours	(n = 16)	3.7 ± 1.9	(1.4–7.9)
16–20 hours	(n = 10)	3.7 ± 1.3	(2.1–6.6)
>20 hours	(n = 5)	2.9 ± 2.0	(1.3–6.1)

That many of the patients in the reported series had eaten within 4 hours of the onset of labor is irrelevant. As table 1, based on 92 patients in labor, shows, the volume of maternal gastric content during delivery is greatest when the patient has eaten *after* the onset of labor. There is some correlation between increasing time from the last meal and decreasing gastric content volume at the time of delivery, at least up to 20 hours (table 2). In view of the wide range of volumes encountered in all groups, this correlation is of little clinical significance.

Acid pneumonitis develops only when the *p*H is below 2.5. Irrespective of the interval between the last meal and delivery, a gastric *p*H below 2.5 can exist in any patient (table 3). If a patient is to be anesthetized, as contrasted to being rendered analgesic only, we believe endotracheal intubation is mandatory but is only one of several precautions necessary to prevent this horrendous complication.

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