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Evacuation of the Gall Bladder in Patients with Pernicious Anemia.*

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This is the third of a series of studies analyzing the rate of emptying of the gall bladder in patients with lesions of the stomach.

In the first series[1] it was observed that peptic ulcer patients displayed a significantly faster rate of emptying than controls of comparable age. Since the mean curve of emptying for this group could be virtually reproduced in normal individuals merely by injecting one egg-yolk directly into the duodenum (Fig. 1, left) and since the initial discharge of food into the duodenum is known to be more rapid in individuals having gastric and duodenal ulcer, the faster rate of emptying of the gall bladder in such patients was attributed to a greater food stimulus rather than to an increased production of gastric juice.

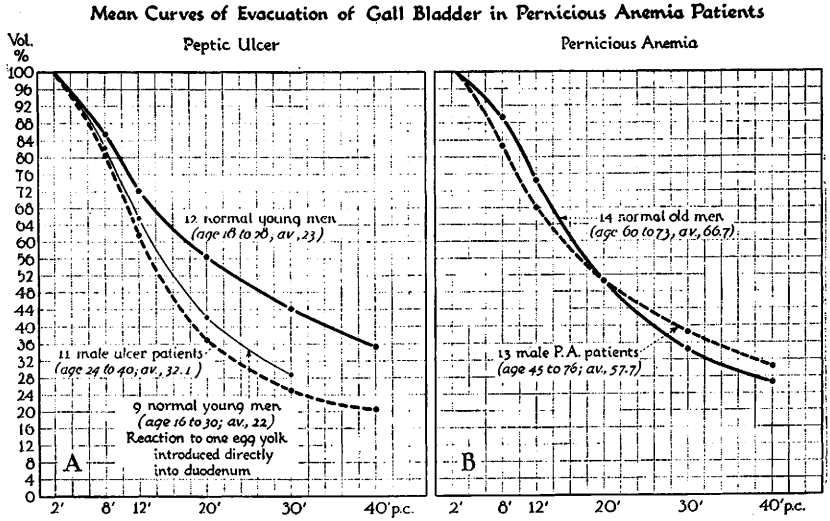

FIG. 1.

Mean curves of the evacuation of the gall bladder in patients with lesions of the stomach. Ordinates, percentage volume of bile in the gall bladder; abscissæ, minutes after a standard meal.

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1 Boyden, E. A., and Berman, T. M., *Radiol.*, 1937, **28**, 273.

This interpretation was strengthened by the second study.[2] This dealt with patients having carcinoma of the stomach. In this group, marked reduction of the amount of free HCl failed to retard the emptying of the gall bladder.

The present report is based upon cholecystographic studies of 22 consecutive, unselected male patients for whom a clinical as well as hematological diagnosis of pernicious anemia had been established. All of the patients were receiving treatment with liver extract. The hemoglobin content of the blood had either reached normal levels or was responding to treatment. The histamine test had disclosed complete absence of free acid in all patients, and only minimal amounts of total acids.

Of special interest was the fact that the gall bladder could not be visualized in 40% of these individuals, notwithstanding the use of the intravenous method of introducing the dye and the absence of any history suggesting gall bladder disease. In the other groups visualization had failed in only 9% of ulcer patients and in 22.7% of those with carcinoma.

In the remaining 13 of the 22 patients, the mean curve of emptying of the gall bladder approximated that of the controls (Fig. 1, right), being a little faster in the first 20 minutes after a standard meal† and a little slower in the last 20 minutes, but not significantly so.

Since there was complete absence of free HCl in all 22 patients, even after stimulation by histamine, one must conclude that free HCl in the stomach is not an essential factor in the evacuation of the human gall bladder.

The final report will include a comparable study of female patients.

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[2] Ritchie, W. P., and Boyden, E. A., PROC. SOC. EXP. BIOL. AND MED., 1937, **36**, 815.

† The modified Boyden meal, consisting of 4 egg-yolks mixed with an equal amount of milk to which a pinch of sugar and a drop of vanilla extract has been added.