

# REVERSE PERISTALSIS ASSOCIATED WITH NAUSEA

JOHN H. FITZGIBBON, M.D.

PORTLAND, ORE.

Recent contributions by Alvarez<sup>1</sup> and Keeton<sup>2</sup> have presented interesting and valuable evidence as to the cause of nausea. Both find the bowel to be an important factor in nausea production. For a number of years, Alvarez has considered it "very probable that it is brought about by reverse peristalsis, particularly in the bowel."<sup>3</sup>

Clinical evidence has not been abundant, because of evident difficulties in human experimentation. A case recently observed, however, demonstrates very definitely the association of reverse peristalsis and nausea.

## REPORT OF CASE

Mrs. E. M., aged 61, referred to me by Dr. H. M. Greene, July 27, 1925, gave a history of intermittent abdominal distress for several months up until two years ago. A diagnosis of peptic ulcer was made by the family physician. After treatment, she was comfortable until three weeks before I saw her, when pain in the epigastrium reappeared. At times, it came on from thirty minutes to one hour after meals, and was relieved by food. The patient frequently was awakened at midnight by distress and by regurgitation of the gastric contents. Nausea was marked when pain was present, but she usually kept from vomiting.

A physical examination gave negative findings, except for tenderness along the colon and in the epigastrium. The Wassermann examination was negative. Three specimens of vomitus showed free hydrochloric acid, 60; total acidity, 83, and occult blood, strongly positive. The urine was normal; the stools contained a large amount of occult blood in five specimens.

Fluoroscopy revealed a constant defect of the lesser curvature, about 1 inch from the pylorus. Vigorous peristaltic waves were seen, but, at times, reverse waves took their place and passed completely and forcibly from the pylorus to the cardia. If, however, a downward wave was met, both faded out. At one time barium had just entered the duodenum, when reverse waves began, and it was seen to pass backward to the pylorus with a sudden rush. It was not possible to tell

1. Alvarez, W. C.: Reverse Peristalsis in the Bowel, A Precursor of Vomiting, *J. A. M. A.* **85**: 1051 (Oct. 3) 1925.

2. Keeton, R. W.: Nausea and Related Sensations Elicited by Duodenal Stimulation, *Arch. Int. Med.* **35**: 687 (June) 1925.

3. Alvarez, W. C.: *The Mechanics of the Digestive Tract*, New York, Paul B. Hoeber, 1922.

whether or not some of it entered the stomach from the duodenum.

Whenever reverse waves began, the patient experienced nausea; when the waves were vigorous, vomiting was prevented with difficulty. As the waves subsided, nausea disappeared and normal peristalsis was resumed for a short time, followed by another period of reverse waves and nausea.

An operation, performed by Dr. Rockey, revealed an indurated ulcer, of questionable appearance, involving the lesser curvature and posterior wall. Pyloric resection was done, and microscopic examination confirmed the suspicion of malignancy.

#### COMMENT

In this case, definite reverse waves of the stomach and of the duodenum were seen. Nausea accompanied the reverse peristalsis and seemed to vary with the force of the waves. Because of the rapidity with which barium passes through the duodenum, it was difficult to see reverse waves in that organ, except in one instance, when barium was rapidly forced backward along the duodenum to the pylorus.

Stevens Building.

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