Reviewer’s report

Title: Postprandial fullness correlates with gastric barium excretion but not with chronic gastritis.

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Reviewer: Greger Lindberg

Reviewer’s report:

The authors have studied barium meal findings and their relation to reported symptoms from a group of apparently healthy persons who have undergone a routine medical check-up at a Japanese steel company. In order to understand the merits of this study it is necessary to think a little about the experimental set-up. Barium meal with a spasmolytic agent is presumably done to increase the likelihood of detecting gastric cancer. This is how I interpret the multitude of projections for the barium meal. I don't think that this technique has been applied for the study of functional disturbances in the upper gut before. However, it does allow the radiologist to determine with good sensitivity and specificity the presence or absence of chronic gastritis (refs 9 & 10). The position of the head of a barium meal is more difficult to interpret and I don't think there is data to show that the head of barium has any clear relation with gastric emptying as assessed by scintigraphy or breath testing. However, I think the position of the head of barium during a barium meal examination might be an indicator of an underlying mechanism that could be involved in the pathogenesis, or be an indicator of post-prandial fullness. This is highly speculative but for example an open-standing pylorus might represent a corresponding endoscopic finding or the group with rapid filling of the duodenum could be similar to those with an early rapid gastric emptying reported by Delgado-Aros et al. (ref 23). In all, I think this study reports new information about a symptom that is quite common but still puzzles us as to its underlying pathophysiology. If I were to give an advice to the authors it would be to try to avoid mirroring their findings with findings from other techniques, i.e. the head of the barium meal does not mirror gastric emptying at least not that of solid food. I think this confuses the reader.

Now to the points raised by dr Sadik in his primary verdict on this manuscript.

#1. Not met, but the authors should not report the position of the head of barium as a measure of gastric emptying, as long as the latter term has universal acceptance for another finding using another technique.

#2 Adequately met (refs 9 & 10)

#3 Adequately met (builds on a validated questionnaire)

#4 Adequately explained, could be amended by informing the reader about the reason for including barium meal using this technique in a routine medical check-up.
#5 Adequately met.

**Level of interest:** An article whose findings are important to those with closely related research interests