Barium Plus Food Elicits GI Symptoms on Exam

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CHICAGO — Adding food provocation to a standard upper GI series may better characterize alimentary tract dysfunction and guide therapy, compared with use of liquid barium alone, according to a study presented at the annual meeting of the Radiological Society of North America.

"While a food provocation study may be overkill for the typical reflux patient, it may be a useful adjunct to a standard upper GI series in patients who have severe symptoms when they eat specific foods and who have otherwise unremarkable prior exams," Dr. Ashraf Thabet said.

He and his associates reviewed the medical records for all provocative food studies requested by surgeons and gastroenterologists that were performed from 1997 to 2005 at Massachusetts General Hospital, Boston.

The study group included 29 patients with a mean age of 56 years. All had severe symptoms after meals and unremarkable upper GI exams or cross-sectional imaging or gastric emptying studies, said Dr. Thabet, who is an interventional radiologist.

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DR. THABET

Patient histories detailed the food type and amount that elicited symptoms and described prior GI surgery. Symptoms caused by food ingestion included dysphagia, abdominal pain, odynophagia, nausea, vomiting, heartburn, weight loss, and recurrent aspiration. Two-thirds of the patient cohort had histories of upper GI surgery, most commonly esophagectomy, fundoplication, and gastric bypass.

The provocative food study began with a standard upper GI exam using liquid barium alone. Then the patient was asked to eat food brought from home and was reexamined fluoroscopically. The researchers looked at whether symptoms were elicited when the food was eaten and whether fluoroscopy detected an abnormality.

One 62-year-old man who had undergone esophagectomy for esophageal cancer had complained of postprandial nausea and abdominal pain. A work-up at an outside institution included negative findings from a standard upper GI barium exam and unremarkable right upper-quadrant ultrasound findings. When the patient came to Massachusetts General for a second opinion, a surgeon recommended a provocative study, Dr. Thabet said.

"The barium study produced no symptoms, but when the patient ate a muffin he developed nausea and abdominal pain, and it was observed fluoroscopically that there was a delay in propagation of food from the intrathoracic stomach distally to [the] small bowel. The patient's surgeon then performed an endoscopic [dilation] of the pylorus, and the patient's symptoms improved," he said.

Liquid barium alone reproduced symptoms in only 3 of the 29 patients; after the addition of food provocation, 2 of those 3 patients had worsening symptoms. Of the remaining 26 patients, 13 reported symptoms after food provocation.

About half of the patients (14 of 29) had a fluoroscopic abnormality (FA) with barium only. Of those 14, all but 1 had an additional or more prominent FA with food. Of the 15 patients in whom barium alone did not result in an FA, 7 had an FA after food provocation. Abnormalities included altered peristalsis (20 patients), luminal narrowing (3), reflux alone (2), and a grapefruit-sized epiphrenic diverticulum (1).

Surgical therapy (esophagectomy, gastroplasty, and fundoplication) was pursued in 40% of the patients. Endoscopic therapy (dilation and/or botulinum toxin therapy) was pursued in 20%, and 40% had medical therapy or continued observation.

"Of all of the patients who had no symptoms with liquid barium alone, symptoms were provoked with food in half of them, and almost all of them had a fluoroscopic abnormality. Of the other 50% who had no symptoms even after food provocation, a fluoroscopic abnormality was still demonstrated in 54%," Dr. Thabet said, adding that referring physicians appeared to be more confident about treatment decisions after a food study was performed. ■