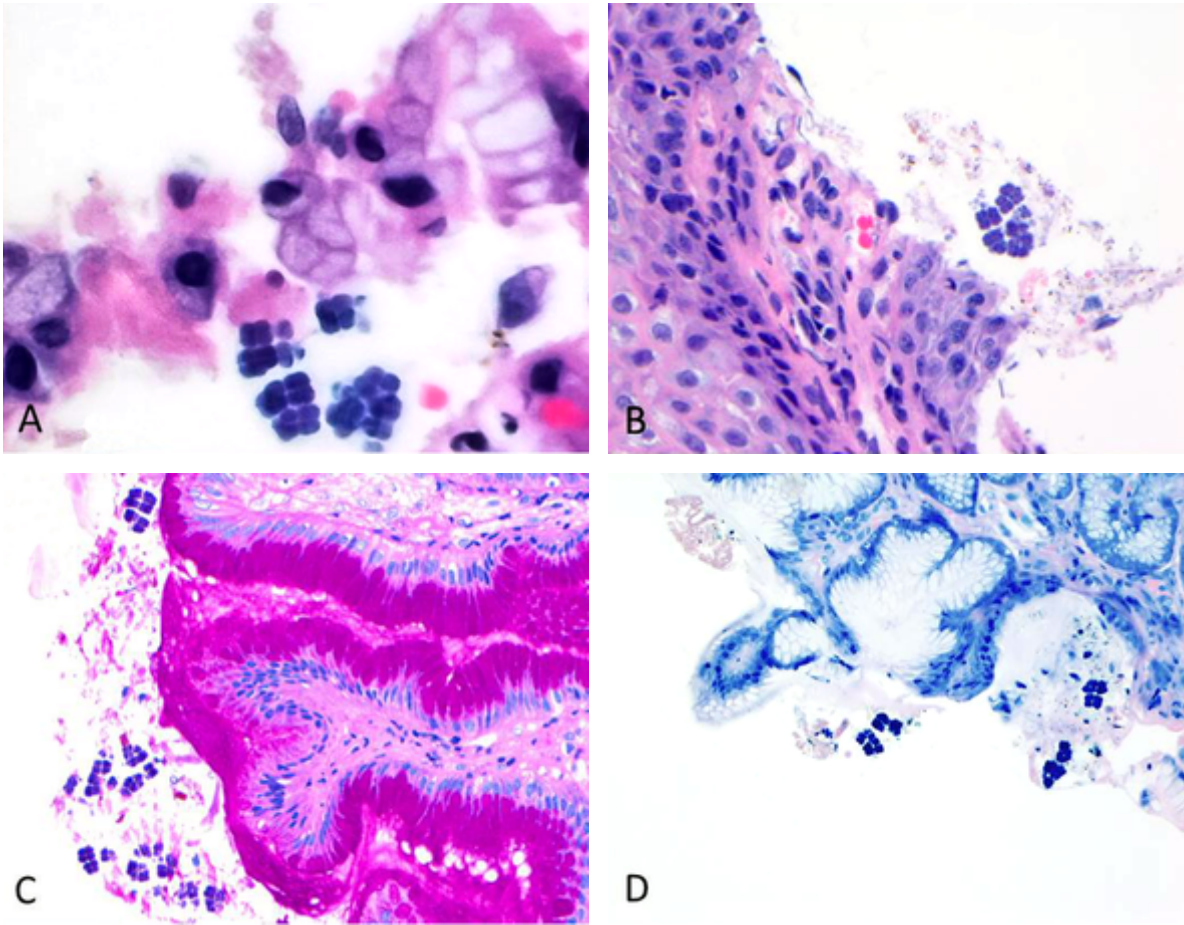


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64-year-old woman with gastroparesis and acute epigastric pain.

What is your diagnosis?



Diagnosis:

Sarcina-associated gastropathy.

Comment:

A 64-year-old woman suffered of gastroparesis and severe abdominal pain with unremarkable physical exam, laboratory data and radiological exams. Endoscopy showed retained food in the stomach but was otherwise normal. Organisms compatible with *Sarcina* were found in the biopsies. Panels A and B show large cocci, in tetrads and octets, on the surface of gastric mucosa and adjacent to esophageal squamous mucosa. Panels C and D show AB/PAS pH25 and Giemsa stains of the same organisms.

Sarcina forms diagnostic clusters of round, relatively large microorganisms (up to 3 microns size), strikingly organized in octets or tetrads on the surface of intact epithelium. *Sarcina*, a gram positive fermentative and anaerobic coccus, survives in highly acidic environments. In humans, it has been found rarely, without sex or age bias, in gastric fundus and body and in esophagus. *Sarcina* is ubiquitous in soil and human feces. It is responsible for animals' abomasal bloat while in humans, it is associated with "frothy" vomit, abdominal pain, nausea, vomiting and signs of gastric obstruction.

The mucosa with *Sarcina* displays no typical histological injury pattern and pathogenicity is not proven. *Sarcina* is a marker of delayed gastric emptying: it can be seen with gastroparesis, stenosis of both benign and malignant origin, colonization of gastric pouch after bariatric surgery, emphysematous gastritis,

emphysematous esophagitis, and gastric perforation. *Sarcina* fermentative capability at low pH may cause perforation in presence of ulceration or stasis. It should be looked for in candidates for bariatric surgery and especially in ulcerated bariatric surgery pouches.

Symptoms abate with elimination of *Sarcina*, still the cause of delayed gastric emptying must be determined not to miss an occult malignancy. Therapy is not standardized: metronidazole and ciprofloxacin have been used most frequently for mild disease. Serious complications require surgery. The mortality is high when emphysematous gastritis is present.

For further reading:

- › Sopa SC, Manjwala A, Boutros CN. *Sarcina*, a new threat in the bariatric era. *Hum Pathol.* 2015; 46: 1405-7.
- › Gaspar BL. The significance of *Sarcina* in routine surgical pathology practice. *APMIS.* 2016; 1-8.

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