**Sarcina ventriculi** in a Patient With Slipped Gastric Band and Gastric Distention

Li Liu* and Purva Gopal*

*Department of Pathology, University of Texas Southwestern Medical Center, Dallas, Texas; ‡Department of Pathology, Mercy Medical Center, Baltimore, Maryland

A 43-year-old woman with an open nonadjustable gastric band insertion in 1997 presented to the emergency room for sudden onset of severe abdominal pain, dry heaving, and tachycardia. Imaging revealed massive stomach distention spanning from the xiphoid process to umbilicus with pneumatosis of the gastric wall concerning for gastric ischemia and slipped band (Figure 1A). The patient was taken to the operating room where 75% of the stomach was necrotic. A subtotal gastrectomy with Roux-en-Y gastrojejunostomy was performed. Microscopic examination of the stomach showed ischemic pattern injury and transmural necrosis with a necroinflammatory exudate. Within the exudate near the surface epithelium, scattered tetrad packets of bacteria morphologically consistent with *Sarcina ventriculi* were identified (Figure 1B and C).

*S. ventriculi* are gram-positive, obligate anaerobic bacteria that are acid tolerant and able to survive in low-pH environments. *S. ventriculi* was first observed and documented by John Goodsir in 1842.1 The natural habitat of *S. ventriculi* is the soil, and detection of these organisms was predominantly reported in veterinary literature. However, there has been a sudden surge of reports documenting human *S. ventriculi* infection.2–5 Recent literature reviews of *S. ventriculi* involving the gastrointestinal tract reported presentations ranging from asymptomatic to life-threatening, including emphysematous gastritis and perforation.4–6 Approximately half of the patients have a history of gastroparesis, gastric outlet obstruction, or prior gastrointestinal surgery.4,5 Endoscopically, the most consistent finding is retained food or food bezoar due to delayed gastric emptying, often accompanied by associated mucosal injury including gastric ulcer, erosion, mucosal necrosis, or stricture.4–5 *S. ventriculi* can be easily recognized on routine hematoxylin and eosin slides by their unique organization in tetrad packets, their refractile nature, and their size (1.8–3 µm individually); therefore, confirmatory molecular testing is rarely necessary.3,6

Any cause of impaired gastric emptying or gastric outlet obstruction, including a slipped gastric band as seen in our case, could potentially lead to the growth of *S. ventriculi* in the stomach. It is speculated that the presence of the organism, although not believed to be causative, could result in progression of a pre-existing gastric injury or ulcer and potentially increase the risk of perforation. Therefore, recognition and awareness of *S. ventriculi* may be important to reduce risk of these serious complications, particularly if the organism is identified in association with an ulcer or mucosal injury. Although standard treatment regimens for *S. ventriculi* have not yet been established, a combination of metronidazole and another antibiotic often along with a proton pump inhibitor or H2 blocker resulted in symptom resolution in a number of reported cases.4,6

Clinical Gastroenterology and Hepatology 2018;16:xxv–xxvi
References


Conflicts of interest
The authors disclose no conflicts.