#### July 2017 Featured Articles, Volume 225



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#### Article 1: Vascular; General Surgery

Twenty-year experience with aorto-enteric fistula repair: gastrointestinal complications predict mortality. Chopra A, Cieciura L, Modrall JG, et al. J Am Coll Surg 2017;225:9—18

#### **Article 2: Surgical Oncology**

Is pregnancy-associated melanoma associated with adverse outcomes? Jones MS, Lee J, Stern SL, Faries MB. J Am Coll Surg 2017;225:149—158

**Objectives:** After reading the featured articles published in this issue of the *Journal of the American College of Surgeons* (JACS) participants in this journal-based CME activity should be able to demonstrate increased understanding of the material specific to the article featured and be able to apply relevant information to clinical practice.

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# Article 3: Burn, Trauma, Critical Care; General Surgery

Onset of coagulation function recovery is delayed in severely injured trauma patients with venous thromboembolism. McCully BH, Connelly CR, Fair KA, et al. J Am Coll Surg 2017;225:42—51

#### **Article 4: Patient Safety; General Surgery**

Operating room fires and surgical skin preparation. Jones EL, Overbey DM, Chapman BC, et al. J Am Coll Surg 2017;225:160–165

#### Article 5: Colon/Rectal; General Surgery

Diverticulitis diagnosed in the emergency room: is it safe to discharge home? Sirany A-ME, Gaertner WB, Madoff RD, Kwaan MR. J Am Coll Surg 2017;225:21–25

#### **ARTICLE 1**

(Please consider how the content of this article may be applied to your practice.)

# Twenty-year experience with aorto-enteric fistula repair: gastrointestinal complications predict mortality

Chopra A, Cieciura L, Modrall JG, et al J Am Coll Surg 2017;225:9-18

**Learning Objectives:** After studying the article, surgeons should be able to understand the magnitude of the role of gastrointestinal complications on 60-day and long-term mortality after aorto-enteric fistula reconstruction, and recognize the contribution of the enteric repair on the outcomes of this condition.

#### Question 1

Which of the following figures most accurately represents the mortality associated with aorto-enteric fistula repairs?

- a) 30-day, 10%
- b) 30-day, 50%
- c) 60-day, 30%
- d) 60-day, 50%
- e) 60-day, 85%

**Critique:** The majority of other series evaluating outcomes after aorto-enteric fistula repair have focused on 30-day mortality, with reported rates ranging from 14% to 75%. However, when evaluating the 60-day mortality of these patients, this study demonstrates that the mortality rate was nearly 25% per month for the first 2 months. This suggests that 60-day mortality may be a more appropriate outcomes measure in patients treated for aorto-enteric fistulas.

#### **Question 2**

Regarding aorto-enteric fistula repair:

- a) Coronary artery disease was shown to be an independent predictor of mortality.
- b) Diabetes mellitus was shown to be an independent predictor of mortality.
- c) Smoking was shown to be an independent predictor of mortality.
- d) Gastrointestinal complication was shown to be an independent predictor of mortality.
- e) Any complication was shown to be an independent predictor of mortality.

**Critique:** Patients who develop aorto-enteric fistulas commonly have multiple cardiovascular risk factors. Age, chronic renal insufficiency, presence of any complication, and gastrointestinal complications were all shown to be predictors of mortality on univariate analysis. However, only gastrointestinal complications and advanced age were independent predictors of mortality on multivariate logistic regression.

#### **Question 3**

A 60-year-old man with a past medical history of hypertension, hyperlipidemia, and an open abdominal aortic aneurysm repair with good functional status presents with acute onset hematemesis that resolves spontaneously. A CT scan demonstrates an aorto-enteric fistula to the third portion of the duodenum. He is stabilized and taken urgently to the operating room. Regarding enteric reconstruction for this patient, which of the following is most accurate?

- a) Simple, direct, 2-layered, interrupted hand-sewn repair is successful 99% of the time.
- b) Complex repairs, including wide resection and pyloric exclusion, should always be performed, because these never leak.
- c) The specific repair requires adherence to sound surgical principles of wide debridement and tension-free repair with well-vascularized bowel, and may therefore vary from patient to patient.

- d) The enteric defect must be stapled in order to minimize the risk of postoperative leak.
- e) This patient is best managed with an endovascular stent graft without enteric reconstruction.

**Critique:** Several strategies for the management of the enteric repair in aorto-enteric fistulas have been proposed, including both simple primary repairs using stapled and suture techniques, and bowel resection and bypass with or without pyloric exclusion or omental flaps. There were no duodenal leaks in our series after complex gastrointestinal reconstruction. However, in patients with compromised stability or multiple comorbidities, in whom a prolonged reconstruction may not be feasible, simple direct primary repair may be the best option. Alternatively, stable patients with significantly infected and necrotic tissue requiring wide debridement, complex repair with resection, and bypass may be the best to limit future gastrointestinal leaks. Management with endovascular stent graft can be used as an effective bridge therapy in unstable patients until more definitive reconstruction is performed, but is not a durable option in our experience. As a result, there is no single optimal method of enteric repair, which should be individualized to the patient's comorbidities, severity of infection, and hemodynamic stability.

#### **Question 4**

Regarding vascular reconstruction in patients with an aorto-enteric fistula:

- a) Extra-anatomic bypass with aortic ligation is ideal for all patients.
- b) Endovascular stent graft repair represents a definitive treatment modality.
- c) Neoaortoiliac system (NAIS) is best suited for hemodynamically unstable, high-risk surgical patients with multiple comorbidities.
- d) Revascularization method is best individualized to the patient's stability, functional status, comorbidities, and severity of infection.
- e) In situ reconstruction with rifampin-soaked prosthetic graft has the lowest rate of reinfection.

**Critique:** Aortic ligation with extra-anatomic bypass had been considered the gold standard for the treatment of aorto-enteric fistulas. However, literature has since demonstrated that rifampin-soaked prosthetic graft as well as neoaortoiliac system (NAIS) creation can also be used effectively. In a patient who may not tolerate superficial femoral vein harvest for autogenous reconstruction, vascular reconstruction with rifampin-soaked prosthetic may serve as a suitable

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