April 2017 Featured Articles, Volume 224

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Article 1: Vascular; General Surgery
Management of immediate post-endovascular aortic aneurysm repair type Ia endoleaks and late outcomes. AbuRahma AF, Hass SM, AbuRahma ZT, et al. J Am Coll Surg 2017;224:740–748

Article 2: Liver, Biliary, Pancreas; General Surgery
Protocol-driven management of suspected common duct stones. Manning A, Frazee R, Abernathy S, et al. J Am Coll Surg 2017:224:645–649

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
Persistent fibrinolysis shutdown is associated with increased mortality in severely injured trauma patients. Meizoso JP, Karcutskie CA, Ray JJ, et al. J Am Coll Surg 2017:224:575–582

Article 4: Gallbladder; General Surgery
Outcomes in older patients with grade III cholecystitis and cholecystostomy tube placement: a propensity score analysis. Dimou FM, Adhikari D, Mehta HB, Riall TS. J Am Coll Surg 2017;224:502–511

Article 5: Surgical Oncology
Patient symptoms are the most frequent indicators of recurrence in patients with American Joint Committee on Cancer stage II melanoma. Berger AC, Ollila DW, Christopher A, et al. J Am Coll Surg 2017;224:652–659

Article 6: Pediatric Surgery
Identifying children at very low risk for blunt intra-abdominal injury in whom CT of the abdomen can be avoided safely. Streck CJ, Vogel AM, Zhang J, et al. J Am Coll Surg 2017;224:449–458

ARTICLE 1
(Please consider how the content of this article may be applied to your practice.)

Management of immediate post-endovascular aortic aneurysm repair type Ia endoleaks and late outcomes
AbuRahma AF, Hass SM, AbuRahma ZT, et al
J Am Coll Surg 2017;224:740–748

Learning Objectives: Immediate post-endovascular aortic repair (EVAR) type Ia endoleaks are associated with higher rates of early intervention and late endoleaks and reintervention. Therefore, strict post-EVAR surveillance is necessary.

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Question 1

Type Ia endoleak after endovascular aortic repair refers to:

a) Flow from patent lumbars or inferior mesenteric artery into the aneurysmal sac outside the endograft
b) Inadequate seal of the distal end of the endograft with leak into the aneurysmal sac
c) Inadequate seal of the proximal attachment of the endograft with leak into the aneurysmal sac
d) Modular disconnection of 2 segments of the aortic graft
e) Flow visualized from unidentified source

Critique: Several types of endoleak have been described after endovascular aortic repair. These are usually classified as type I endoleak: which can be either Ia, reflecting inadequate seal of the proximal attachment of the endovascular graft; or Ib, reflecting inadequate seal of the distal end of the endograft. Type II endoleak is defined as back flow from patent lumbar arteries, inferior mesenteric artery, middle sacral, and hypogastric arteries, accessory renal or other visceral vessels. Type III endoleak is a fabric disruption, tear, or disconnection between 2 modules of the endovascular grafts. Type IV endoleak is a flow from fabric porosity, which is usually observed less than 30 days after graft placement. An endoleak of undefined origin is a flow visualized from an unidentified source.

Question 2

Which of the following types of endoleaks after endovascular aortic repair is usually observed and does not require further intervention?

a) Type I endoleak
b) Type II endoleak
c) Type III endoleak
d) Type IV endoleak
e) Endoleak of undefined origin

Critique: Management of endoleaks varies according to the type of endoleak. Generally speaking, type I endoleaks usually require some form of intervention, such as proximal aortic cuffs, Palmaz stents at the proximal attachment site, reballooning, embolization techniques, anchoring devices, fenestrated or chimney/snorkel techniques, and, rarely, open conversion (open repair). Most type II endoleaks can be observed, particularly if found early, and many resolve spontaneously. However, if they persist or are associated with increasing aortic sac diameter, these would be treated either with coil embolization, glue, or in casual cases, open conversion. Type III endoleaks usually require secondary endografts, cuffs, or, in rare cases, conversion to open repair. Type IV endoleaks are usually observed.

Question 3

The initial step in treating immediate post-endovascular aortic repair type Ia endoleaks seen on a completion angiogram should include:

a) Use of a proximal aortic cuff extension
b) Use of Palmaz stent
c) Conversion to open repair
d) Use of anchoring devices
e) Reballooning

Critique: Several techniques have been described for treating patients with type Ia endoleaks that are observed immediately on the post-endovascular aortic repair completion angiogram, with various success rates. These include use of a proximal aortic cuff extension, use of Palmaz stent, conversion to open repair, use of anchoring devices, or reballooning. However, reballooning may be adequate as the initial step in abolishing this endoleak, particularly if it is a mild endoleak. If reballooning is not successful, other modalities, as described, may be necessary to treat these proximal endoleaks. These should be taken seriously.

Question 4

When describing the aortic sac size after endoleak, the following terms are applicable:

a) Expansion is defined as a significant increase of >5 mm in abdominal aortic aneurysm (AAA) sac size, compared with preoperative sac size.
b) Significant AAA sac expansion is defined as ≥ 10 mm increase in sac size, compared with preoperative sac size.
c) Significant AAA sac expansion is defined as ≥ 15 mm increase in sac size, compared with preoperative sac size.
d) Significant AAA sac expansion is defined as >20 mm increase in sac size, compared with preoperative sac size.
e) The term *migration* is used when the endovascular graft moves caudally more than 20 mm.

Critique: Significant abdominal aortic aneurysm sac expansion is usually defined as ≥ 5 mm increase in sac size in comparison to the preoperative sac size, and significant shrinkage is defined as a decrease of ≥ 5 mm from the preoperative size. The term *migration* is used by