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Aortobifemoral Graft Infection: Is Unilateral Limb Excision Definitive?

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Objectives: Aortobifemoral graft (ABFG) infections presenting with single-limb involvement can be managed with unilateral limb excision or complete graft removal. This study aimed to identify factors predictive of subsequent contralateral limb infection in patients initially undergoing unilateral limb excision.

Methods: A retrospective review of patients treated for infected ABFGs from 2001 to July 2014 was performed. Endovascular and aortic tube graft infections were excluded. Primary outcomes were freedom from contralateral graft limb excision, overall survival, and factors potentially predictive of subsequent contralateral limb infection.

Results: Fifteen patients underwent unilateral graft limb excision with retroperitoneal exploration of the affected ABFG limb and revascularization for unilateral graft limb infection. Original indication for placement of the ABFG was aortoiliac occlusive disease in 11 patients and aneurysm in four. No patients had clinical or radiographic evidence for contralateral limb infection at initial presentation. Seven patients, all of whom underwent initial operation for aortoiliac occlusive disease developed contralateral limb infection at a median follow-up of 23.2 months. The remaining eight patients had no evidence of contralateral limb infection at median follow-up of 38.8 months. Patient demographics were similar between the two groups. Five of the seven patients who developed contralateral limb infection had imaging evidence of ipsilateral graft infection above the inguinal ligament at the time of initial graft infection. Operative exploration during unilateral excision in this group revealed a well-incorporated graft without extension to the bifurcation. There was no dominant organism cultured in either group, and duration of targeted antibiotic therapy was similar in both groups (≥6 weeks). For the series, there were no amputations, and overall mortality was 40% with median follow-up of 44.7 months.

Conclusions: Unilateral infection of an ABFG can be managed with single-limb excision; however, 50% of patients will return with contralateral limb infection at a median of 2 years. Clinical assessment of graft incorporation lacks specificity and does not indicate freedom from contralateral limb infection. Factors predicting contralateral involvement include initial operation for aortoiliac occlusive disease and initial imaging or operative findings suspicious for infection above the inguinal ligament of the unilateral limb.

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Percutaneous Endovascular Aortic Repair of Complex Aneurysms Using Large-Diameter Sheaths for Thoracic, Fenestrated, and Branched Endografts

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Objectives: This study reviewed the outcomes of percutaneous endovascular aortic repair (PEVAR) of complex aortic aneurysms using large-diameter sheaths for thoracic, fenestrated, and branched stent grafts.

Methods: We reviewed the outcomes of all consecutive patients who underwent PEVAR of descending thoracic (DTA), thoracoabdominal (TAAA), pararenal (PRA) or aortoiliac aneurysms (AIAs) using large-diameter sheaths for placement of thoracic, fenestrated, or branched stent grafts. Patients treated by fenestrated and branched stent grafts were enrolled in prospective physician-sponsored investigational device exemption protocols. A percutaneous approach was selected in patients with <50% posterior, minimal anterior, or no calcification in the common femoral artery using standardized preclosure technique with two Perclose devices (Abbott Vascular Inc., Redwood City, Calif) in each femoral puncture site. End points were technical success, conversion to open femoral artery repair, 30-day mortality and major adverse events, and freedom from femoral access-site complications.

Results: There were 102 patients treated for 48 PRAs, 27 TAAAs, 19 DTAs, and 8 AIAs. A total of 171 femoral arteries were closed using preclosure technique. Transfemoral sheath size was 18F in four vessels (3%), 20F in 120 (70%), and ≥22F in 47 (27%). Eighty-three patients (81%) had visceral branch incorporation, which required brachial artery access using small incision in 48. Technical success for percutaneous transfemoral closure was 95% (162 of 171). Nine intraoperative failures were managed by open femoral conversion using primary repair in six, interposition graft in two, and patch angioplasty in one. Mean estimated blood loss was 444 ± 569 mL. There were no patients with uncontrolled puncture-related hemorrhage, retroperitoneal hematoma, or intra-operative hypotension. The 30-day mortality was 0.9% (one of 101) and 30-day rate of major adverse events was 15% (16 of 102). Spinal cord injury occurred in one patient (0.9%). Five (3%) access-related complications occurred, including femoral artery occlusion in three and hematoma or pseudoaneurysm in one each. Wound-related complications occurred in one patient (0.5%) who required open femoral artery conversion for exposure and repair. After a mean follow up of 1-year, freedom from femoral access-site complication was 97% ± 2%.

Conclusions: PEVAR using the preclosure technique is safe and effective in select patients with complex aortic aneurysms who have minimal or no femoral calcifications and require large-diameter sheaths for thoracic, fenestrated, and branched stent grafts. Rate of puncture (3%) and wound-related complications (0.5%) is low, and no uncontrolled puncture-related hemorrhage, retroperitoneal hematoma, or systemic hypotension occurred in this series.

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Left Subclavian Artery Occlusion During Thoracic Endovascular Aortic Repair in the Elderly Is Associated With Significant Morbidity

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Objectives: Covering the left subclavian artery (LSA) during thoracic endovascular aortic repair (TEVAR) for proximal seal is generally safe and well tolerated. The purpose of this study was to determine if this practice is safe in elderly patients.

Methods: The National Surgical Quality Improvement Program (NSQIP) database was queried, from the years 2005 to 2011, to identify patients who underwent TEVAR. Octogenarians were separated into two groups, one where the LSA was covered (C-SA) and another where it was not covered (U-SA). Patient demographics, comorbidities, perioperative data, and outcomes were compared.

Results: There were 392 patients aged >80 who underwent TEVAR, 128 patients in the C-SA group and 264 in the U-SA group. There was no significant difference in demographics or baseline cardiovascular or pulmonary comorbidities between groups. There was also no difference in emergency procedures between C-SA and U-SA groups (27% vs 21%; $P = .18$). The C-SA group had significantly more intraoperative cardiac arrest (4% vs 1%; $P = .03$) and significantly more received intraoperative blood transfusions (32% vs 21%; $P = .02$). There was also a higher postoperative rate of stroke (9% vs 3%; $P = .03$) and sepsis (9% vs 3%; $P < .01$) in the C-SA group compared with the U-SA group.

Conclusions: Covering the LSA in octogenarians is associated with significantly increased perioperative morbidity. We recommend caution when considering coverage of the LCA during TEVAR. These patients may benefit from elective revascularization when possible.

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Development of New Acute Dissection in the Ascending Aorta After Type B Dissection: Intramural Hematoma Is Not Benign

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Objectives: Aortic dissection is a dynamic process that can extend distal to the entry tear or proximally in a retrograde fashion. We sought to determine associations for development of new acute type A aortic dissection (ATAD) after type B dissection (TBAD).

Methods: We reviewed our aortic dissection database for cases of ATAD from 2002 to 2013 that had known TBAD. Imaging and intraoperative reports were used to determine presence of entry tear with dissection