



Evaluation and Management of a Patient with an Asymptomatic Aortoiliac Aneurysm

Description of the Activity	Vascular surgeons evaluate and treat patients with asymptomatic aortoiliac aneurysms. These surgeons should have a comprehensive understanding of the screening recommendations, diagnostic techniques, and medical and surgical management of this disease process, including selection criteria for intervention, type of intervention, and timing of intervention. Additionally, surgeons should understand perioperative management, including recognition and treatment of complications of surgical intervention, needed follow-up, and surveillance strategies.
Functions	<ul style="list-style-type: none">❖ Nonoperative/Preoperative<ul style="list-style-type: none">➤ Synthesize essential information from a patient’s referring providers, records, history, physical examination, and initial diagnostic evaluation to develop a differential diagnosis.➤ Provide medical optimization, including smoking cessation and blood pressure control.➤ Determine whether intervention is indicated, and consider nonoperative, expectant management in select patients.➤ Synthesize an optimal medical management and surveillance plan for a patient in whom intervention is not indicated.➤ Perform appropriate cardiopulmonary risk stratification, and consider frailty assessments.➤ Select a surgical approach consistent with a patient’s anatomy and comorbidities.➤ Obtain informed consent. Describe the indications, risks, benefits, alternatives, and potential complications of the planned operation, and ensure patient/caregiver understanding.➤ Synthesize an operative plan that demonstrates understanding of the operative anatomy, physiology, indications, contraindications, risks, benefits, alternatives, and potential complications of:<ul style="list-style-type: none">▪ Endovascular abdominal aortic aneurysm repair (EVAR)▪ Fenestrated endovascular abdominal aortic aneurysm repair (fEVAR)▪ Open abdominal aortic aneurysm (AAA) repair via transperitoneal approach▪ Open AAA repair via retroperitoneal approach❖ Intraoperative<ul style="list-style-type: none">➤ Perform the procedures required to manage asymptomatic infrarenal aortoiliac aneurysms.<ul style="list-style-type: none">▪ EVAR▪ fEVAR▪ Open AAA, retroperitoneal▪ Open AAA, transperitoneal➤ Integrate new information discovered intraoperatively to modify the surgical plan or technique as necessary, such as:<ul style="list-style-type: none">▪ Difficult proximal control or inadequate proximal anastomosis▪ Hemodynamically unstable or anuric patient▪ Inability to cannulate the stent graft contralateral gate (or branch vessels during fEVAR)▪ Inadvertent coverage of renal or hypogastric arteries during EVAR/fEVAR▪ Inadvertent iliac rupture during EVAR/fEVAR



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	<ul style="list-style-type: none">▪ Injury to iliac veins during distal control▪ Lack of femoral pulses following repair▪ Need for conversion to open repair▪ Type I/III endoleak➤ Work with anesthesia staff, nursing staff, and other perioperative health care professionals to create and maintain an intraoperative environment that promotes patient-centered care.❖ Postoperative<ul style="list-style-type: none">➤ Initiate and oversee postoperative care, including determining postoperative disposition, performing resuscitation, prescribing appropriate medical therapy, and ordering follow-up imaging.➤ Communicate with the patient/caregiver(s) and members of the health care team to ensure understanding of postprocedure instructions and the patient's ability to carry out the resultant plan within the context of their life (eg, transportation, living situation, insurance, access to a pharmacy).➤ Recognize, evaluate, and manage early and late complications following aortoiliac aneurysm repair.➤ Identify surveillance plan and indications for reintervention.
Scope	<ul style="list-style-type: none">❖ In scope<ul style="list-style-type: none">➤ Endoleak type II➤ Iliac artery aneurysm (including hypogastric)➤ Infrarenal AAA➤ Para-anastomotic aneurysm➤ Penetrating atherosclerotic ulcer➤ Pseudoaneurysm❖ Out of scope<ul style="list-style-type: none">➤ Aortoenteric fistula➤ Dissection resulting in aneurysmal degeneration➤ Endoleak with sac expansion or endoleaks type I/III➤ Mycotic aneurysm➤ Pararenal AAA➤ Pediatric patients➤ Symptomatic or ruptured aneurysm



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1 Limited Participation Demonstrates understanding of information and has very basic skills Framework: What a learner directly out of medical school should know The attending can show and tell.	<ul style="list-style-type: none"> Elicits a history (smoking, family history of aneurysm) and performs a relevant vascular exam (pulsatile abdominal mass, complete pulse exam inclusive of femoral, popliteal, and pedal pulses) Identifies criteria for surveillance and indications for AAA repair (size > 5.5 cm, rapid growth) Identifies the various imaging modalities to diagnose and follow AAA (duplex, CTA, MRA) 	<ul style="list-style-type: none"> Demonstrates understanding of sharps safety, safe use of devices, and surgical field sterility Performs basic surgical tasks efficiently, including suturing and knot-tying Demonstrates basic surgical skills, including making an incision and closure 	<ul style="list-style-type: none"> Demonstrates a basic understanding of the anatomy of the aorta and iliac vessels Recognizes the importance of maintaining wire position Demonstrates understanding of basic ALARA principles; wears lead and a dosimeter at all times; performs basic "driving" maneuvers 	<ul style="list-style-type: none"> Identifies a straightforward postop problem (fever, pain, nausea, anemia) and initiates management with guidance Maintains professional and clear communication with the patient/caregiver(s), the ICU, and other consulting teams Communicates with a patient/caregiver(s) about changing conditions, providing routine information
2 Direct Supervision Demonstrates understanding of the steps of the operation but requires direction through principles and does not know the nuances of a basic case	<ul style="list-style-type: none"> Orders and interprets imaging to establish the presence of an AAA (aortic duplex, CTA) Describes the natural history of AAA and demonstrates understanding of surveillance and timing of repair, citing SVS guidelines 	<ul style="list-style-type: none"> Demonstrates respect for tissues (gentle handling of vessels) and developing skill in instrument handling Performs parts of a distal anastomosis with frequent prompting and assistance 	<ul style="list-style-type: none"> Uses US to obtain vascular access; demonstrates basic catheter and wire-handling techniques Uses fluoroscopy techniques and shielding to decrease radiation exposure to a patient and operator with guidance 	<ul style="list-style-type: none"> Manages a postop problem (eg, chest pain, respiratory distress), including ordering and interpreting additional tests Actively listens to a patient/caregiver(s) to elicit preferences and manage expectations

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<p>Framework: The learner can use the tools but may not know exactly what, where, or how to do it.</p> <p>The attending gives active help throughout the case to maintain forward progression.</p>	<ul style="list-style-type: none"> • Uses imaging findings to support a differential and preop plan (abdominal US, CTA, MRA) • Identifies the indication for open AAA repair (> 5.5 cm, short/angulated neck, poor iliac access) and synthesizes why open repair would be preferred • Synthesizes clinical data to decide on EVAR vs open repair 			<ul style="list-style-type: none"> • Communicates relevant operative events and the postop care plan to the ICU
<p>3</p> <p>Indirect Supervision</p> <p>Can do a basic operation but will not recognize abnormalities and does not understand the nuances of an advanced case</p> <p>Framework: The learner can perform the operation</p>	<ul style="list-style-type: none"> • Synthesizes patient data such as imaging to arrive at a differential, including primary and secondary treatment options • Interprets physical exam findings, pertinent history, and imaging to determine a plan for surveillance or endo/open treatment of an asymptomatic AAA • Recognizes the impact of disease progression (aneurysm growth) on a 	<ul style="list-style-type: none"> • Safely exposes aortoiliac anatomy with attention to preservation/management of critical structures (ureter, left renal vein, IMA) • Appropriately sizes and configures an aortoiliac graft for reconstruction and pelvic flow preservation • Performs clamping for vascular control (and unclamping) with 	<ul style="list-style-type: none"> • Performs a diagnostic angiogram, places stiff wires, and safely delivers a main body device to the correct level • Appropriately sizes and configures an aortoiliac endograft for reconstruction and pelvic flow preservation • Accesses resources to determine exam-specific radiation dose information; independently manages the fluoroscopy system; uses radiation protection devices and techniques 	<ul style="list-style-type: none"> • Recognizes and manages a complex vascular critical care complication, identifying the need to return to the OR • Delivers difficult information to a patient/caregiver(s) using shared decision-making • Communicates with the team efficiently and adapts to different team members' styles; provides feedback to the team, peers, and learners



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<p>in straightforward circumstances.</p> <p>The attending gives passive help. This help may be given while scrubbed for more complex cases or during a check-in for more routine cases.</p>	<p>longitudinal care plan and surveillance</p> <ul style="list-style-type: none"> • Uses available imaging to support a differential and preop plan for a complicated asymptomatic AAA (abdominal US, CTA, MRA) • Develops a specific operative plan for open repair (transperitoneal vs retroperitoneal), demonstrating understanding of alternative options • Develops an EVAR plan and recognizes device limitations based on a patient's anatomy and device instructions for use 	<p>appropriate sequence (outflow before inflow)</p> <ul style="list-style-type: none"> • Demonstrates efficient instrument handling and safe exposure, dissection, and control of vessels • Performs complete proximal and distal anastomoses with minimal prompting and passive assistance 		
<p>4</p> <p>Practice Ready</p> <p>Can manage more complex patient presentations and operations and take care of most cases</p>	<ul style="list-style-type: none"> • Synthesizes patient data such as imaging (CTA) to arrive at a differential; discusses primary and secondary treatment options and continued surveillance vs intervention with a patient with advanced comorbidities and AAA 	<ul style="list-style-type: none"> • Proficiently handles instruments and equipment, uses assistants, and guides the conduct of the operation; makes independent intraop decisions; anticipates when assistance is needed 	<ul style="list-style-type: none"> • Performs EVAR/IBE independently; troubleshoots and treats an endoleak • Ensures colleagues and staff practice ALARA principles 	<ul style="list-style-type: none"> • Leads the team and provides supervision in managing a postop problem • Facilitates a caregiver meeting or end-of-life discussion and negotiates a care management plan when interventions may be ineffective

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<p>Framework: The learner can treat all straightforward appendicitis cases and has a strong understanding of surgical options and techniques for less common scenarios.</p> <p>The attending is available at the request of the learner but is not routinely needed for common presentations, though input may be needed for more complex presentations.</p>	<ul style="list-style-type: none">Independently alters the longitudinal care plan and aneurysm surveillance based on imaging findings (aneurysm growth)Independently uses 3D reconstruction to identify abnormal findings and plan repair (size the endograft and troubleshoot difficult anatomy [accessory renal, small iliac vessels, large IMA])Independently chooses the graft size for an open repair and uses available imaging to plan the operative approach, including where to clamp and other adjuncts needed (renal flush, need for hypogastric jump grafts)Adapts a management plan based on a change in a patient's condition, including from endo to open			<ul style="list-style-type: none">Coordinates a caregiver meeting with the various health care teams for a goals-of-care or end-of-life discussion or transition of care