



VASCULAR TECHNOLOGY PROFESSIONAL PERFORMANCE GUIDELINES

Screening for Abdominal Aortic Aneurysms (AAA)

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VASCULAR PROFESSIONAL PERFORMANCE GUIDELINE

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PURPOSE

To determine the presence or absence of aneurysmal disease in the abdominal aorta using duplex ultrasound

INDICATIONS

- Patients between the ages of 65 and 75 with a current or previous history of smoking
- Patients between the ages of 65 and 75 years old who have never smoked
- Family history of AAA
- Hypertension
- Hyperlipidemia
- Coronary artery disease
- Peripheral arterial disease
- Cerebrovascular/carotid disease
- Palpable, pulsatile abdominal mass or abdominal bruit on physical examination
- Unexplained abdominal, flank or back pain
- Known or newly diagnosed peripheral arterial aneurysm

CONTRAINDICATIONS AND LIMITATIONS

- A patient with a known abdominal aortic aneurysm
- Limited acoustic windows secondary to:
 - Patient body habitus / large abdominal girth
 - Presence of a large hiatal hernia
 - Overlying bowel gas
 - Excessive abdominal scarring
 - Status-post abdominal surgery
 - Abdominal wounds
 - Abdominal drains
 - Presence of peritoneal dialysis catheters

PATIENT PREPARATION

- Patients should be NPO for a minimum of 8 hours prior to testing
- Explain the procedure to the patient
- Initial testing is to be performed with the patient positioned supine. Alternative acoustic windows may be used, but must be documented as this may produce erroneous diameter measurements

INSTRUMENTATION

- Duplex ultrasound instrumentation with the minimum capabilities:
 - Color, power and spectral Doppler
 - Adjustable imaging/Doppler frequencies
 - Range-gated spectral Doppler
 - Doppler angle

- Visual display
- Digital storage for static images or cine-loops
- Acoustic coupling gel
- Exam linens
- Disinfectants or cleaning solutions that adhere to facility infection prevention and control policies/procedures

ELEMENTS OF PROPER TECHNIQUE

- Anatomy
 - Aorta: The aorta lies to the left of the inferior vena cava (IVC), beginning at the level of the diaphragm and terminating at the bifurcation of the common iliac arteries, typically at the level of the umbilicus. Initial evaluation is to be performed in grayscale, in the transverse scan plane
 - Suprarenal aorta (Proximal): The suprarenal aorta is designated for the abdominal aorta above the level of the renal arteries. When imaging at this level, the celiac trunk or the superior mesenteric artery may be visualized coursing anterior
 - Juxtarenal aorta (Mid): The juxtarenal aorta is located at the level of the renal arteries. In the transverse plane, the left renal vein is visualized coursing anterior to the abdominal aorta as it conflues with the inferior vena cava. Just inferior to this, the right or left renal artery should be visualized coursing lateral to the vessel wall towards each kidney
 - Infrarenal aorta (Distal): The infrarenal abdominal aorta is measured just proximal to the iliac bifurcation or at the largest site of dilatation below the level of the renal arteries
 - Technique: When evaluating the aorta in the transverse plane, the transducer is to be kept perpendicular to the vessel. Oblique sections or alternative windows may produce erroneous diameter measurements
 - Measurements: Anteroposterior and transverse dimensions are to be recorded and measured at the site of maximum widening of the vessel in the transverse plane. Measurements are taken from the outer wall to the outer wall and at the same location
 - Scan planes: The examination should include both transverse and longitudinal views. Alternative scan planes may be used if technical difficulties are encountered throughout the examination
 - Image optimization: Image optimization should be made throughout the length of the examination
 - Aneurysm: if an aneurysm or area of ectasia is detected, additional transverse images of the aorta are to be capture and measured within a non-dilated segment for comparison. Documentation of aneurysms (if present) must include the widest size of the aorta measured outer wall to outer wall
 - Pathology/abnormality/incidental findings: Additional images should be recorded to support abnormalities detected during the examination. There is no standard protocol to document pathological findings during the examination; however, presence of abnormalities should be displayed in various planes and applications as needed.

DOCUMENTATION

- The following represents the minimum images to be collected during the examination:
 - Grayscale:
 - Transverse plane: with AP and Transverse measurements with calipers set outer wall to outer wall
 - Aorta at widest diameter
 - Abnormal examination:
 - Transverse plane: with AP and Transverse measurements with calipers set outer wall to outer wall
 - Aorta at widest diameter
 - Aorta at a non-dilated segment for comparison

REPORTING

- A preliminary report is generated by the technologist
- A final report is signed by the interpreting provider in adherence with facility standards and guidelines

CRITICAL RESULTS

- Refer to individual facility standards and guidelines for critical findings criteria and notification recommendations

EXAM TIME RECOMMENDATIONS

High-quality, accurate results are fundamental elements of an abdominal aortic aneurysm screening. A combination of indirect and direct exam components is the foundation for maximizing exam quality and accuracy.

- Indirect exam components include:
 - Pre-exam activities: obtaining previous exam data, initiating exam worksheet and paperwork, equipment and exam room preparation, patient assessment and positioning, patient communication
 - Post-exam activities: exam room cleanup, compiling and processing exam data for preliminary and/or formal interpretation, and exam billing activities.
- Direct exam components include:
 - Equipment optimization and the actual hands-on examination process.
- While study times may vary depending on testing protocols, patient condition, and clinical complexity of the evaluation being performed, these are the times necessary to provide a quality diagnostic evaluation. Listed are the recommended examination times for performing each CPT related to this guideline, which were derived from the direct time inputs from the Resource Based Relative Value Scale (RBRVS).
 - 76706 48 minutes

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