Screening For Abdominal Aortic Aneurysms (AAA)

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Screening For Abdominal Aortic Aneurysms (AAA)

PURPOSE
Evaluation of the abdominal aorta to screen for an aortic aneurysm using duplex ultrasound technology.

COMMON INDICATIONS
Familial history of abdominal aortic aneurysm

CONTRAINDICATIONS AND LIMITATIONS
Contraindications for duplex evaluation of the abdominal aorta are few; however, limitations do exist and may include the following:

- Large firm abdomen
- Significant amount of overlying bowel gas

PATIENT PREPARATION
There is no specific prep required however, performing the screening in the morning allows for a more optimal exam. A six to eight hour fast may facilitate visualization.
GUIDELINE 1: PATIENT COMMUNICATIONS AND POSITIONING

1.1 Respond to questions and concerns about the abdominal aortic examination.

1.2 Refer specific diagnostic, treatment or prognosis questions to the patient’s physician.

1.3 The exam is performed with the patient in a comfortable position with the head slightly elevated to a level of comfort. The patient is usually examined in the supine position.

1.4 The examiner should utilize as ergonomically comfortable a position as possible to avoid fatigue and injury.

GUIDELINE 2: PATIENT ASSESSMENT

2.1 Obtain a pertinent history documenting any vascular disease, such as aneurysm or atherosclerotic disease;

2.2 Obtain information regarding risk factors: hypertension; peripheral vascular disease; family history of aneurysmal disease, age; and smoking.

GUIDELINE 3: EXAMINATION GUIDELINES

Throughout each exam, sonographic characteristics of normal and abnormal tissues, structures, and blood flow must be observed so that scanning technique can be adjusted as necessary to optimize image quality and spectral waveform characteristics. The patient’s physical and mental status is assessed and monitored for changes in the patient’s clinical status during the procedure.

The technologist/sonographer/examiner:

3.1 Uses appropriate duplex instrumentation, which includes display of both two-dimensional structures and motion in real-time and Doppler ultrasonic signal documentation with:
   a. spectral analysis and color Doppler imaging, to include:
      1. proper sample volume size and positioning
      2. an angle of 60 degrees or less with respect to the vessel wall and/or direction of blood flow
      3. proper measurement of spectral velocities
   b. imaging carrier frequency between 2.25 and 4.0 MHz as needed for penetration
   c. Doppler carrier frequency of 2.5 to 4.0 MHz as needed for penetration
   d. Digital storage of static images and/or cineloop.

3.2 Follows a standard exam protocol for Screening for Abdominal Aortic Aneurysm (AAA) Evaluation.

3.3 Examines the native aorta with 2-D ultrasound beginning at the diaphragm.
   a. documents the maximal transverse AP diameter measurement.

3.4 Color duplex may be used to demonstrate the lumen and to document patency of the abdominal aorta and to obtain transverse image of the abdominal aorta at its greatest diameter.

3.5 Gray scale image of the aorta at the largest diameter, noting intraluminal echoes, should be obtained.

3.6 Digital storage of static images and/or cineloop. (Add this)
GUIDELINE 4: REVIEW OF THE DIAGNOSTIC ULTRASOUND EXAM FINDINGS

The technologist/sonographer/examiner:

4.1 Reviews data acquired during the examination to ensure that a complete and comprehensive evaluation has been performed and documented.

4.2 Explains and documents any exceptions to the routine examination protocol (i.e., study limitations, omissions or revisions).

4.3 Records all technical findings required to complete the final diagnosis on a worksheet so the measurements can be classified according to the laboratory diagnostic criteria (these criteria may be based on published or internally validated data) (see references).

4.4 Documents the exam date, technologist performing the exam and a summary of the exam results in a vascular laboratory log.

4.5 When indicated alert the medical director and or referring physician that immediate medical attention is warranted. This is noted appropriately by the technologist.

GUIDELINE 5: PRESENTATION OF EXAM FINDINGS

5.1 Provides preliminary results when necessary as determined by individual department guidelines.

5.2 Presents record of diagnostic images, data, explanations, and technical worksheet to the interpreting physician for use in rendering a diagnosis and for archival purposes.

GUIDELINE 6: EXAM TIME RECOMMENDATIONS

High quality and accurate results are fundamental elements of the aortic examination. A combination of indirect and direct exam components is the foundation for maximizing exam quality and accuracy.

6.1 Indirect exam components include pre-exam procedures: completion of pre-exam paperwork; exam room and equipment preparation; patient undressing and preparation (Guideline 1); and, post-exam procedures: i.e.; cleanup; review exam data for preliminary and/or formal interpretation (Guidelines 4 and 5); patient communication (Guideline 1 & 2); exam charge and billing activities. Recommended time allotment is 10 minutes.

6.2 Direct exam components include equipment optimization and the actual hands-on time. (Guideline 3). Recommended time allotment is 5-10 (10) minutes.

GUIDELINE 7: CONTINUING PROFESSIONAL EDUCATION

The RVT credential (ARDMS) or RVS credential (CCI) are considered the guideline of practice in vascular technology. All Vascular Technologists must keep current with:

7.1 Advances in diagnosis and treatment of abdominal aortic aneurysms.

7.2 Changes in abdominal aortic evaluation protocols and published laboratory diagnostic criteria.

7.3 Advances in ultrasound technology used for the assessment of abdominal aortic aneurysms.