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**VASCULAR TECHNOLOGY
PROFESSIONAL PERFORMANCE GUIDELINES**

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 abdominal 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

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.

GUIDELINE 2: PATIENT ASSESSMENT

Obtain a pertinent history documenting any vascular related risk factors, such as aneurysmal or atherosclerotic disease; 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 to 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
 - 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. minimum hardcopy capabilities should include color static images or electronic color hardcopy storage. Videotape or electronic video clip storage should be available.
- 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:
 - a. obtain transverse image of the abdominal aorta at its greatest diameter

GUIDELINE 4: REVIEW OF THE DIAGNOSTIC EXAM FINDINGS

The 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); 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 2 or 3). Recommended time allotment is 5-10 minutes.

GUIDELINE 7: CONTINUING PROFESSIONAL EDUCATION

The RVT (ARDMS) or RVS (CCI) credential is 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.

AORTIC DUPLEX REFERENCES:

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6. Payne DF; Rosenthal D; Lamis PA; et al: Infrarenal aortic aneurysms asymptomatic vs. symptomatic. *Amer Surg* 1985; 51:94-96.
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