Abdominal Aorta Guidance

Understanding the Exam

An abdominal aorta exam is performed to evaluate blood flow through the aorta in the abdomen and extending to the CFA (Common Femoral Artery) in the groin. A doctor might order an Abdominal Aorta scan for a patient who has a family history of Abdominal Aortic Aneurysm (AAA) or experiencing symptoms of an aneurysm e.g. pain in abdomen, passing out, nausea and vomiting. Also, it can be ordered to evaluate if there is a stenosis in the aorta or CFA.

The exam typically lasts around 30 - 45 minutes.

Performing and Approving Users

		Required Credentials	Common Additional Credentials
Performed by	Vascular Sonographer	One of the following: • RVT (Registered Vascular technologist) • RVS (Registered Vascular Specialist) • RPhS (Registered Phlebology Sonographer)	• Registered Diagnostic Vascular or Cardiac Sonographer (RDCS): Certified by the American Registry for Diagnostic Medical Sonography (ARDMS) • Registered Cardiac Sonographer (RCS): Certified by Cardiovascular Credentialing International (CCI) • Registered Vascular Technologist (RVT) • Vascular-Interventional Radiography RT(VI)

			• Cardiovascular-Interventional Radiography RT(CV)
Read by	Cardiologist	Typically, board certified by the American Board of Internal Medicine (ABIM) or the American College of Cardiology (ACC) in internal medicine and at least one cardiac sub specialty	RPVI certified by APCA
	Radiologist	ABR (American Board of Radiology) certified radiologists hold certifications in DR (diagnostic radiology) or IR/DR (interventional radiology/diagnostic radiology).	RPVI
	Vascular surgeon	VSB-ASB certified	RPVI

Facility Types

This type of study is performed in these facility types:

- Non-invasive cardiac and/or vascular lab, private practice
- Non-invasive cardiac and/or vascular lab, hospital-based
- Mobile imaging providers
- Imaging centers
- Office-based lab (OBL)
- Ambulatory surgery center (ASC)
- Office interventional suite (OIS)
- Hospital Cath labs/interventional suites

Worksheet

Measurements and Observations

Abd Ao-Iliac Tab

- Represent the scans of the Abdominal Aorta as well as the Right and Left segments of the CIA, EIA, and IIA.
- Velocity measurements transfer from the ultrasound machine to their respective fields on the Studycast Abdominal aorta worksheet. The diastolic/systolic velocity ratios will be calculated automatically. By default, these ratio fields are read only. However, a Studycast configuration option is available that can set velocity ratio fields to read/write.
- Artery dimension measurements transfer from the ultrasound machine to the respective dimension fields of the aorta, CIA, EIA and IIA.
- Waveform observations document flow direction, resistance, and phasicity..
- Drop-downs allow the user to select observations to document plaque and stenosis.
- If AAA is observed the measurements will populate their respective field and the Max. Aorta Diameter will be calculated automatically.
- At the bottom of the worksheet, the techs can record their observations using the dropdown menus if applicable.
- MyChoices form options
- Waveform, Stenosis and Plaque Morphology can each be excluded from observations.
- Set default vessel configuration.
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ABI Tab
- Techs record measurements from the ankle brachial index test
- Measurements are either entered or transfer from ABI machine when DICOM SR is available on equipment.

MyChoices form options
- Options for ABI ranges and waveforms are available in a separate MyChoices ABI form.
- Selections made on the ABI form will be applied to ABI, Segmental Pressures, Arterial LE, and Abdominal Aorta worksheets.

Graft Tab

- Only present when Graft is the selected protocol.

Techs record measurements and interact with the iDiagram to describe the graft.

Interventions Tab

- Can document up to 4 stents, 2 atherectomies, and 2 balloon angioplasties.

EVAR Protocol

- Document the endovascular aortic repair EVAR graft including the location and the blood flow velocity through the graft.

- **iDiagram**
- Present on the Abd Ao-Iliac and Graft tab.
- Annotations and notes can be made on the diagram and will appear on the report.

MyChoices form options
- Can include/exclude the diagram by default per protocol

Conclusions

- Will Generate statements of the positive findings in the observations section

Report

Accreditation

Reports are designed to meet requirements from

- **SVU:** Society for Vascular Ultrasound
- **IAC-vascular:** Intersocietal Accreditation commission
- **ACR:** American College of Radiology

Demo Path

The Studycast Abdominal Aorta worksheet allows you to document velocity, waveforms, stenosis, and plaque observations as well as the presence of an abdominal aortic aneurysm. ABI results, grafts, and interventions can also be documented. Ratios are automatically calculated on the Abd Ao-Iliac tab.

Waveforms default to normal.

Velocities and aorta measurements populate automatically from the ultrasound machine. You'll use the dropdowns to document plaque and stenosis. And for the waveforms, you'll document flow direction, resistance, and phasicity.

The Abdominal Aorta stenosis criteria can be customized by account, and based on the criteria set up, velocities and/or ratios will automatically set the stenosis observation.

Note that any segment considered to be aneurysmal is displayed on the diagram [enter 3.4 cm and show diagram]. Studycast can be configured to automatically consider any aortic segment above 3 cm (or a client defined threshold) to be aneurysmal, as well as any aortic segment > 1.5x the size of the proximal segment. The diagram can be included/excluded from the report by protocol.

[If the client performs interventions at their facility, demo the Interventions tab.]
Here, on the interventions tab, you can document multiple stents and multiple endarterectomies.
[Demonstrate by selecting from the observations, including location, waveform, and velocity.]

Stents and endarterectomies can also be documented directly on the interactive diagram. [Show how to click and drag to place a stent or endarterectomy.] Note that the corresponding observations update when you document on the diagram and vice versa.

[Generate the findings and conclusions to show that the intervention is documented there.] You can see that all observations you have made on both tabs, are reflected in the findings. A summary of abnormalities are generated in conclusions.

[If relevant for the facility, set the protocol to Graft.] Select the Graft protocol and note that a Graft tab appears where you can document information for multiple grafts, including location, type, and the velocity. You can see that this functionality is similar to documenting interventions.

Like all vascular interactive diagrams in Studycast, you can annotate on the diagram as well. [Show how to add annotations. Then open the report and note the that the annotations appear on the diagram.]
Of course you can access the Studycast report 3 ways: the preview
report button, the report tab within the worksheet, or (if your monitor is at least 1920 pixels Wide), the worksheet + report tab.

Go back to the worksheet and note that you can generate a procedure statement by selecting the type of procedure and clicking the informed consent box.

SWOT Analysis

Strengths	Weaknesses
1. Ability to report on all segments of on this worksheet.. 2. Options to report graft placement and enter Doppler values. 3. Interactive diagram to display placement of grafts and material used. 4. Include ABI in report findings. 5. Areas for reporting vascular interventions and stents. 6. Interactive diagram that includes vascular interventions and stents.	1. No graft analysis finding statements generated on the worksheet, other than presence of graft. 2. Drop down options for waveform include stent and this changes to triphasic once a value is entered in the PSV. IAC required proximal and distal stent values reported when stent is identified. Finding statement for stents simply says stent observed. 3. Reporting for Abdominal Aorta interventions is important to vascular surgeons. Not having a complete graft interrogation option could be a disadvantage for SC.
Opportunities	**Threats**
1. Add procedures for graft imaging to procedure box in study quality box. There will be at least 4 options for graft identifiers. 2. Create finding statements specific for Abdominal Aorta grafts.	