Chapter 7-1: FLUTE - Carotids

1. Prep the power injector unit to administer the main bolus of contrast followed by saline. Dosage and rate will be determined by the Radiologist.

2. Place the NV coil on the table along with Table Pad A. If your site does not have the NV coil, the C-Spine Coil can be used; however, coverage of the Aortic Arch and Circle of Willis may be sub-optimal.

3. Place the patient on the table within the coil, as shown.

4. Align the laser to the sternal notch of the patient.

5. Press and hold the SET button to advance the patient to isocenter.

Caution: The volume and rate of the contrast agent and saline should be equal. By doing this, the vessels will be at their highest contrast. Varying the volume and rate will alter the time the contrast reaches the target vessel which will reduce the contrast of the vessel.

For detailed safety information, please refer to Chapter 1, Safety, in the Echelon Reference Manual.
Chapter 7-1

**FLUTE - Carotids**

Select the **Scanogram SCA** task, then click **7**.

Load your site’s FLUTE Carotids protocol. If your site does not have one, select the FLUTE Carotids protocol from the System library.

Select the **Scanogram SCA** task, then click **START**.

Select the **S-Map** task.

Load the Scanogram SCA images.

Position the slice slab as displayed at left.

Click **START**.
Select the **Scanogram 2D TOF Sag w/ MIP** task.

Load the Scanogram SCA images.

Position the slice group as displayed at left.

Click [START].
Chapter 7-1

**FLUTE - Carotids**

10. Select the **Pre/Post FLUTE Carotids** task.

11. Load the Scanogram SCA and Scanogram 2D TOF Sag w/ MIP images.

12. Position the slice group as displayed, ensuring coverage of the carotid and vertebral arteries.

13. Select the **Fluoro Scan** task.

14. Position the slice group as displayed, centering on the carotid arteries and low enough to cover the pulmonary arteries.

15. Click **START** to begin the pre-contrast (mask) scan. After completing the pre-contrast (mask) the system will pause. Ensure good image quality before continuing.
Chapter 7-1  FLUTE - Carotids

16 Arm the power injector unit.

17 Click **CONTINUE** to begin the Fluoro Scan.

18 Begin the contrast injection of the entire contrast bolus, followed by saline.

19 As soon as the contrast is seen in the carotid arteries, select **NEXT**.

**HINT:** Shortly after the pulmonary arteries (C) are seen, the aortic arch (D) will enhance and then the carotid arteries (E).
In the Acquisition No. box, enter or select 2. In the Acquisition Scope list, click Current.

Perform MIP functions.

Refer to Chapter 5, Post Processing, for MIP steps.
Chapter 7-2

FLUTE - Renals

1. Prep the power injector unit to administer the main bolus of contrast followed by saline.
   
   **Dosage and rate will be determined by the Radiologist.**

2. Place the Torso coil on the table on top of Table Pads A and B.

3. Place the patient on the table within the coil as shown.

4. Align the laser to the center of the Torso coil and press and hold the **Set** button to advance the patient to isocenter.

---

**Caution**

The volume and rate of the contrast agent and saline should be equal. By doing this, the vessels will be at their highest contrast. Varying the volume and rate will alter the time the contrast reaches the target vessel which will reduce the contrast of the vessel.
It is recommended that all sequences in this protocol be performed using breath-holding techniques.

5 Load your site’s FLUTE Renals protocol. If your site does not have one, select the FLUTE Renals protocol from the System library.

6 Select the **Scanogram SCA** task, then click **START**.

7 Select the **S-Map BH** task.

Load the Scanogram SCA images.

Position the slice slab as displayed at left.

Click **START**.
Chapter 7-2  

**FLUTE - Renals**

8. Select the **Shim Axial** task, then click **START**.

9. Select the **Cor BASG BH** task.

Load the Scanogram SCA images.

Position the slice group as displayed at left.

Click **START**.
Chapter 7-2: \textit{FLUTE - Renals}

10) Select the \textbf{Axial BASG BH} task.

Load the Scanogram SCA images.

Position the slice group as displayed at left.

Click \textcolor{green}{START}.

11) Select the \textbf{Scanogram 2D TOF Sag w/ MIP} task.

Load the Scanogram SCA images.

Position the slice group as displayed at left.

Click \textcolor{green}{START}.
Chapter 7-2

**FLUTE - Renals**

12 Select the Pre/Post FLUTE Renals task.

13 Load the Cor BASG, Sag BASG and Scanogram 2D TOF Sag w/ MIP images. Position the slice group as displayed at left, ensuring coverage of the anterior aorta and at least half of the kidneys.

14 Select the Fluoro Scan task. Position the slice group as displayed, centering on the aorta.

15 Click **START** to begin the pre-contrast (mask) scan.

After completing the pre-contrast (mask), the system will pause. Ensure good image quality before continuing.
Chapter 7-2

FLUTE - Renals

16. Arm the power injector unit.

17. Click **CONTINUE** to begin the Fluoro Scan task.

Do not breath-hold the Fluoro Scan task.

Live images will be generated in the Fluoro viewports.

18. Begin the contrast injection of the entire contrast bolus, followed by saline.

19. As soon as the contrast is seen in the descending aorta, click **NEXT**.

**Note:** After clicking **NEXT**, there will be a three to five second pause when using Auto Voice. The amount of time depends on the Auto Voice settings.
Chapter 7-2

FLUTE - Renals

Select the **MIP Renals** task.

Load the FLUTE Renals images into the MIP task.

In the **Acquisition No.** Box, enter or select 2. In the **Acquisition Scope** list, click Current.

Perform MIP functions.

Refer to Chapter 5, *Post Processing*, for MIP steps.
Chapter 7-3

TRAQ - Renals

1. Prep the power injector unit to administer the main bolus of contrast followed by saline.
   
   **Dosage and rate will be determined by the Radiologist.**

2. Place the Torso coil on the table on top of Table Pads A and B.

3. Place the patient on the table within the coil as shown.

4. Align the laser to the center of the Torso coil and press and hold the **Set** button to advance the patient to isocenter.

---

Caution

The volume and rate of the contrast agent and saline should be equal. By doing this, the vessels will be at their highest contrast. Varying the volume and rate will alter the time the contrast reaches the target vessel which will reduce the contrast of the vessel.
Chapter 7-3  

**TRAQ - Renals**

It is recommended that all sequences in this protocol be performed using breath-holding techniques.

5. Load your site’s TRAQ Renals protocol. If your site does not have one, select the TRAQ Renals protocol from the System library.

6. Select the **Scanogram SCA** task, then click **START**.

7. Select the **S-Map BH** task.

Load the Scanogram SCA images.

Position the slice slab as displayed at left.

Click **START**.
Select the **Shim Axial** task, then click .

Select the **Cor BASG BH** task.

Load the Scanogram SCA images.

Position the slice group as displayed at left.

Click **START**.
Select the **Axial BASG BH** task.

Load the **Scanogram SCA** images.

Position the slice group as displayed at left.

Click **START**.

Select the **Scanogram 2D TOF Sag w/ MIP** task.

Load the **Scanogram SCA** images.

Position the slice group as displayed at left.

Click **START**.
Select the **CE-MRA Renals TRAQ** task.

13 Load the Cor BASG, Ax BASG and Scanogram 2D TOF Sag w/ MIP images.
Position the slice group as displayed, ensuring coverage of the anterior aorta and at least half of the kidneys.

14 Arm the power injector unit.

15 Click **START** and wait for the prescan to complete. The continue button will appear.

16 Click **CONTINUE** and the INJECT button on the power injector at the SAME time. 
**The patient should be instructed to hold their breath as long as possible.**
In the Acquisition No. box, enter or select the number of the best image group. In the Acquisition Scope list, click Current.

Perform MIP functions.

To create a dynamic MIP series, set Acquisition Scope list to Whole. Perform routine MIP functions, then click START.

Refer to Chapter 5, Post Processing, for MIP steps.
Chapter 7-4

Time Bolus - Renals

1. Prep the power injector unit to administer the main bolus of contrast followed by saline. Dosage and rate will be determined by the Radiologist.

2. Place the Torso coil on the table on top of Table Pads A and B.

3. Place the patient on the table within the coil as shown.

4. Align the laser to the center of the Torso coil and press and hold the Set button to advance the patient to isocenter.

The volume and rate of the contrast agent and saline should be equal. By doing this, the vessels will be at their highest contrast. Varying the volume and rate will alter the time the contrast reaches the target vessel which will reduce the contrast of the vessel.

ECHELON

Copyright 2013 by Hitachi Medical Systems America, Inc. All rights reserved.
Chapter 7-4

Time Bolus - Renals

- It is recommended that all sequences in this protocol be performed using breath-holding techniques.

- Load your site’s Timed Bolus Renals protocol. If your site does not have one, select the Timed Bolus Renals protocol from the System library.

- Select the Scanogram SCA task, then click START.

- Select the S-Map BH task.

- Load the Scanogram SCA images.

- Position the slice slab as displayed at left.

- Click START.
Select the **Shim Axial** task, then click **START**.

Select the **Cor BASG BH** task.

Load the Scanogram SCA images.

Position the slice group as displayed at left.

Click **START**.
Select the **Axial BASG BH** task.

Load the **Scanogram SCA** images.

Position the slice group as displayed at left.

Click **START**.

Select the **Scanogram 2D TOF Sag w/ MIP** task.

Load the Scanogram SCA images.

Position the slice group as displayed at left.

Click **START**.
Select the **Test Injection** task. Load the Cor BASG, Ax BASG and Scanogram 2D TOF Sag w/ MIP images. Position the slice group as displayed at left, between the renal arteries and the aortic bifurcation.

Click **START**. The system will perform a prescan, then the system will pause and the **START** button will change to **CONTINUE**.

Prep and arm the power injector unit to administer the test bolus, followed by saline. The amount of contrast and saline is predetermined by the radiologist. This test injection rate should be the same as the main bolus rate from Step 1.

Select **CONTINUE** and the inject button on the power injector at the **SAME** time. Fluoro images will be displayed in the lower-left viewport. Click **STOP** after contrast has passed through the aorta.

The Aorta will appear dark at first, then will become bright as contrast passes through it. Once the aorta is dark again, click Abort.
Chapter 7-4

**Time Bolus - Renals**

15. Select the **Timing Graph** task. Load the Test Injection images.

16. On the **Overlays** menu, point to **Add ROI**, then click **Ellipse** to add an elliptical-shaped ROI.

17. Draw an ellipse over the aorta. Click **Apply to All**.

A graphical representation of the bolus is displayed, allowing visualization of the bolus arrival.

18. For additional confirmation of the bolus arrival time, point to and then click **Dynamic Data Table**. The Dynamic Analysis Table window is displayed.

Select the highest ROI value and the corresponding Acquisition Time.

19. Add four seconds to the bolus arrival time. This is the time that will be used as the **Travel Time**.

**ECHELON™**
Select the Renals task.

Load the Cor BASG, Ax BASG and Scanogram 2D TOF Sag w/ MIP images.
Position the slice group as displayed at left, ensuring coverage of the anterior aorta and at least half of the kidneys.

In the Travel Time box, under the Scan Control area in the Scan Parameters window, enter the Travel Time from Step 19.

Click START to begin the pre-contrast scan (mask).

Note: The use of Auto Voice is recommended when performing Breath-Hold instructions for the main scan.
Chapter 7-4

Time Bolus - Renals

Caution
In both test injection and the main scan, the total volume of the contrast agent and saline as well as injection rate should be equal. By doing this, the vessels will be at their highest contrast. Varying the total volume and its injection rate will alter the time the contrast reaches the target vessel which will reduce the contrast of the vessel.

24 After the pre-contrast (mask) scan has been performed, review the images to ensure proper coverage and good image quality.

25 Prep and arm the power injector unit to administer the main bolus of contrast, followed by saline. The amount of contrast and saline is predetermined by the radiologist.

26 Select **CONTINUE** and the inject button on the power injector at the **SAME** time.
Chapter 7-4

**Time Bolus - Renals**

Select the **MIP Renals** task. Load the Timed Bolus Renal images into the MIP task.

In the **Acquisition No.** box, enter or select 2. In the **Acquisition Scope** list, click Current.

Perform MIP functions.

Refer to Chapter 5, *Post Processing*, for MIP steps.

**MIP Renals**

- **MIP Setting**
  - **Share Clipping**
  - **NI Annotation Mode Clipping**
  - **Full Rotate**
  - **Renal Tumble**
  - **Renal Rotate**

- **Projection Clipping**
  - **Projection Mode**

- **Setting Parameter**
  - **StartAngle**
  - **Increment**
  - **Rotate**
  - **Tilt**

- **Slice**
  - **Number**
  - **Active Slice**
  - **Only View Direction**
    - **TopView**
    - **BottomView**

- **Acquisition**
  - **Acquisition No.**
  - **Acquisition Scope**

- **Image Quality**
  - **Adaptive Filter**
  - **Sharp/Smooth**
  - **3DAI**
  - **Image Quality**