### RIH – CAROTID AND BRAIN CTA
#### GE LIGHTSPEED VCT PROTOCOL

**Indications:** carotid/cerebral artery stenosis or aneurysm; non-trauma

| Position/Landmark | Supine head first or feet first  
|                  | Zero at sternal notch. |
| Topogram Direction | Craniocaudal |
| Scan Type | Helical |
| KV / mA / Rotation time (sec) | 120kV / smart mA (50-210) / 0.7 sec  
| Pitch / Speed (mm/rotation) | 0.531:1 , 10.62mm  
| Noise Index / ASiR / Dose Reduction | 7.0 / 30 / 30%  
| | 0.969:1 , 19.37mm  
| | 13.0 / 20 / 20%  
| Detector width x Rows = Beam Collimation | 0.625mm x 32 = 20mm |
| Average Tube Output | nc brain  
| | cta neck brain  
| | ctdi – 35.0 mGy  
| | ctdi – 10.4 mGy  
| | dlp – 600 mGy.cm  
| | dlp – 365 mGy.cm  
| First Helical Set | body  
| Slice Thickness/ Spacing | thickness/cm  
| Algorithm | recon  
| Recon Destination | part  
| | spacing  
| | algorithm  
| | destination  
| 1 | thin brain  
| | .6mm x .6mm  
| | standard  
| | for dmpr  
| Second Helical Set | body  
| Slice Thickness/ Spacing | thickness/cm  
| Algorithm | recon  
| Recon Destination | part  
| | spacing  
| | algorithm  
| | destination  
| 1 | cta carotid/brain  
| | .6mm x .6mm  
| | soft  
| | for dmpr  
| 2 | carotid cta  
| | 1.25mm x 1.25mm  
| | standard  
| | pacs  
| 3 | brain cta  
| | .6mm x .6mm  
| | soft  
| | pacs  
| Scan Start / End Locations | nc brain  
| DFOV | cta neck brain  
| | 1cm inferior to skull base  
| | 1cm inferior to aortic arch  
| | skull vertex  
| | skull vertex  
| | 23cm  
| | 23cm  
| | decrease appropriately  
| IV Contrast Volume / Type / Rate | 90mL Iohexol (Omnipaque 350) / 4mL per second  
| Scan Delay | Smart Prep at Aortic Arch  
| 2D/3D Technique Used | Non Con: 5mm x 5mm axial brain reformats in the glabella-meatal plane (auto-batch off), average mode, auto transferred to PACS  
| | CTA: Axial reformats, 10.0mm x 3.0mm, mip mode (auto-batch off)  
| | Sagittal and coronal reformats 1mm x 1mm, mip mode (auto-batch off)  
| | Right and left sagittal/oblique reformats, 1.0mm x 1.0mm, average mode (auto-batch off), average mode, auto-transferred to PACS  
| Comments: | For the cta, Recon 1 is a thin soft algorithm for reformats. Axial reformats 10.0mm thick x 3.0mm, mip mode, and sagittal and coronal 1mm thick x 1mm, mip mode, right and left sagittal/oblique reformats, 1.0mm x 1.0mm, average mode using DMPR are routine for this protocol.  
| | Recon 2 is from the aortic arch to the circle of willis only. Recon 3 is from C2 through the skull vertex only.  
| Images required in PACS | Scouts, 5mm x 5mm axial nc brain, .6mm x .6mm axial brain cta, 10mm x 3mm axial brain cta mip, 1mm x 1mm sagittal brain cta mip, 1mm x 1mm coronal brain cta mip, 1.25mm x 1.25mm axial carotid cta, 1mm x 1mm right sagittal oblique carotid, 1mm x 1mm left sagittal oblique carotid, Dose Report  

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