

RIH - BRAIN PERFUSION GE LIGHTSPEED VCT PROTOCOL

Scan Type	brain helical	cta neck brain helical	brain perfusion axial												
KV / mA / Rotation time (sec) Pitch / Speed (mm/rotation) Noise Index / ASiR / Dose Reduction	brain 120kv/smart mA(50-350) .8 sec 0.531:1 , 10.62mm 6.5 / 20 / 20%	cta neck brain 120kv/smart mA(100-700) .8 sec .984:1 , 39.37mm 10 / 20 / 20%	brain perfusion 80kv/475mA 0.4 sec 8i none / 20 / 20%												
Detector width x Rows = Beam Collimation	0.62mm x 32 = 20mm	0.62mm x 64 = 40mm	5mm x 8i = 40mm 33 – 190 mAs exposures												
Average Tube Output	ctdi – 51.1 mGy dlp – 872 mGy.cm	ctdi – 10.4 mGy dlp – 365 mGy.cm	ctdi – 285 mGy dlp – 1189 mGy.cm												
First Helical Set Slice Thickness/ Spacing Algorithm / Recon Destination	body recon part 1 nc brain	thickness/ spacing .6mm x .6mm	recon destination . dmpr												
Second Helical Set Slice Thickness/ Spacing Algorithm Recon Destination	body recon part 1 thin cta neck/brain 2 cta neck/brain	thickness/ spacing .6mm x .6mm 2.5mm x 2.5mm	recon destination . for dmpr pacs												
Third Helical Set Slice Thickness/ Spacing Algorithm / Recon Destination	body recon part 1 contrast brain	thickness/ spacing .6mm x .6mm	recon destination . dmpr												
Axial Set Slice Thickness/ Spacing Algorithm / Recon Destination	body recon part 1 brain perfusion	thickness/ spacing 5mm x 5mm	recon destination . for maps/pacs												
Scan Start / End Locations DFOV	nc brain / contrast brain 1cm inferior to skull base skull vertex 25cm	cta neck brain 1cm inferior to aortic arch skull vertex 25cm	brain perfusion just superior to sella tursica 40mm above start point 25cm												
IV Contrast Volume / Type / Rate Scan Delay	cta neck brain/contrast brain 80mL Iohexol (Omnipaque 350) 3mL/sec smart prep at aortic arch	brain perfusion 40mL Iohexol (Omnipaque 350) 6mL/sec use chart													
2D/3D Technique Used	NC and C+ Brain: DMPR 5mm x 5mm axial brain reformats in the glabello-meatal plane (auto-batch off), average mode, auto transferred to PACS CTA: DMPR Axial reformats, 10.0mm x 3.0mm, mip mode (auto-batch on, auto send on) Sagittal and coronal reformats 1.0 mm x 1.0, mip mode (auto-batch on, auto send on)														
Comments: The study is done in four parts. The sequence is: non con brain – cta neck and brain – post contrast brain – and ct perfusion. (23 exposures over a 70 sec duration) The smart prep screen save time to peak at the arch will determine the scan delay for the perfusion. It is OK to angle the gantry on the Perfusion scan only.	<table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">Arch Time to Peak</td> <td style="text-align: center;">Perfusion Scan Delay</td> </tr> <tr> <td style="text-align: center;">18 seconds</td> <td style="text-align: center;">2 seconds</td> </tr> <tr> <td style="text-align: center;">21 seconds</td> <td style="text-align: center;">3 seconds</td> </tr> <tr> <td style="text-align: center;">24 seconds</td> <td style="text-align: center;">7 seconds</td> </tr> <tr> <td style="text-align: center;">27 seconds</td> <td style="text-align: center;">10 seconds</td> </tr> <tr> <td style="text-align: center;">30 seconds</td> <td style="text-align: center;">14 seconds</td> </tr> </table> <p style="text-align: center;">Do not use a delay greater than 16 sec.</p>			Arch Time to Peak	Perfusion Scan Delay	18 seconds	2 seconds	21 seconds	3 seconds	24 seconds	7 seconds	27 seconds	10 seconds	30 seconds	14 seconds
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Images required in PACS	scouts, axial nc brain, axial carotid/brain cta, axial neck brain 10.0mm x 3.0mm mips, sagittal and coronal neck brain 1.0 mm x 1.0 mips, post contrast brain, color brain perfusion maps of time to peak, volume, flow and permeability, Dose Report														