

Contrast reduction with vHP 3 phase for Marfan syndrome

"With vHP3 we can combine three separate scans into one enabling us to reduce contrast dose by approximately 20% compared to our previous CT system. This technology makes CT exams safer and quicker for our patients, it is easier to perform for our radiographers and it is more economical for our department."

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Patient history

A follow-up CT scan of the carotids and aorta was performed on a 42-year-old man with Marfan syndrome and known dilatation of the ascending aorta. The previous exam was acquired in two separate scans. Two breath holds and two contrast injections were needed, taking longer time to be performed.

Results

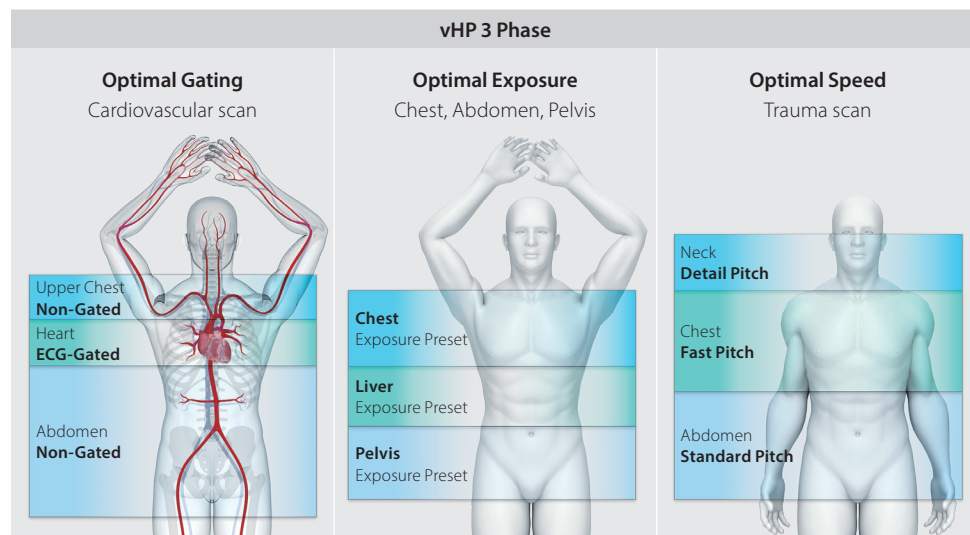


The three phase variable Helical Parameters (vHP3)*¹ scan mode is able to switch seamlessly between non-gated, ECG gated and non-gated scan for faster acquisition and optimal image quality. The scan is acquired within one breath hold and one contrast injection allowing contrast and radiation dose reduction. There is no caliber change in the size of the aorta compared to the previous examination. The carotid arteries have normal appearance and there is no visible thickening of the arterial walls.

The vHP3 scan resulted in total contrast dose savings of 25 ml when compared to the previous examination.

Technology

vHP3 allows three examinations to be performed in a single acquisition, seamlessly transitioning between scan parameter settings, optimal for each body region. Providing the flexibility to vary between ECG gating, scan pitch and exposure control in a single uninterrupted scan, enables patient exams to be performed faster, and with a reduced total scan time. The contrast volume required to maintain peak arterial opacification can be reduced as the overall time required to image the entire anatomy is shorter compared to a traditional start and stop scan protocol.



Conclusion

vHP3 provides an optimized imaging protocol for CTA across multiple regions that is easier to perform for the technologists with faster examination times. In the evaluation of Marfan syndrome, two CT angiography examinations that were previously performed separately could be combined into one examination with a faster acquisition time allowing a reduction in the volume of contrast media dose for improved patient safety.

Acquisition

Scanner Model:	
Aquilion ONE / GENESIS Edition	
Scan Mode:	vHP* ²
Collimation:	0.5 mm × 80
Exposure:	120 kV
	^{SURE} Exposure
	1) Standard Neck
	2) Cardiac
	3) Standard Body
Rotation Time:	0.275 second
Dose Reduction:	AIDR* ³ 3D Enhanced
CTDI:	15.5 mGy
DLP:	1608.8 mGy·cm

*¹ Option

*² Variable Helical Pitch

*³ Adaptive Iterative Dose Reduction

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