

# Setting New Standards in Computed Tomography

## Clinical Experience with the Discovery™ CT750 HD

*An interview with Jean-Louis Sablayrolles, MD, Chief of the CT and MRI Department, Centre Cardiologique du Nord (CCN)*

Centre Cardiologique du Nord (CCN) in Paris was the first hospital in Europe to install GE's new generation Discovery CT750 HD. Jean-Louis Sablayrolles, MD, Chief of Cardiovascular CT and MRI, spoke with GE Healthcare about his clinical experience with the new scanner.

**Q: How long have you been using the Discovery CT750 HD scanner?  
How many and what type of studies have you performed?**

Within the first five months of clinical use, we have scanned more than 2,500 patients. For an evaluation system, the new CT750 HD has been extremely reliable from day one of service. Right from the start, we scheduled all of our cardiac and vascular exams on the CT750 HD. However, we have performed routine diagnostic procedures on the system with excellent results, including neuro, abdomen, pelvis, virtual colonoscopy, etc.

**Q: Can you describe your experience with the scanner?**

Our hopes have become reality with this new generation of high-definition CT imaging. The extensive redesign of the image chain from generator, tube, detector, and new reconstruction algorithm has resulted in a new standard in imaging excellence. We can confirm that image quality is improved across the whole body, while at the same time we are continuously reducing dose.

With the improved spatial resolution, we see more details than we have seen previously. For example, stents are imaged with more detail due to less blooming artifacts; higher contrast and spatial resolution enables us to visualize fine vessels and structures that we could not analyze with previous multi-slice CT systems.

Remarkably, using Adaptive Statistical Iterative Reconstruction (ASIR), dose reduction is achieved at the same time by lowering acquisition parameters such as 100 kVp with reduced mA as a standard protocol for heart imaging. Yet even with these dose reductions, we see improved image quality versus non-HDCT exams.

**Q: Based upon your experience, are you able to see more and know more about the patient's condition? And if so, how does this impact your clinical confidence/decision-making?**

Clearly we can see more detail of the lesions, which improves our diagnostic confidence. In the example of stent visualization, we can analyze these challenging elements with more confidence than before. Coronary CTA has a strong negative predictive value, and we have high hopes that with this new generation of CT we may see improvements in regard to sensitivity and specificity. Better visualization of plaque will also have an increased role for treatment planning, such as coronary stenting of complex lesions. We already started using the CT750 HD for this purpose in our institution with good results.

**Q: What in your opinion is the most important benefit of this new scanner? What previously unmet clinical needs has it fulfilled?**

I can comfortably say this is the most versatile system I have ever used in my practice. Currently, I have benefited from the vast improvement in image quality and my patients have benefited from the lower radiation exposure compared to previous scanners.

The outstanding performance of the CT750 HD has already shown us in a short time the great potential of this platform. HDCT imaging will set new standards across applications and extend diagnostic confidence in computed tomography, whether that be in cardiology, oncology, neurology, or other clinical disciplines.



Jean-Louis Sablayrolles, MD, is a radiologist at Centre Cardiologique du Nord (CCN) in Saint-Denis, France, where he has been chief of the CT and MRI Department since 1988.

**About the facility**

CCN is a private clinic created by a cardiology group in 1973 in Saint-Denis, North of Paris, France, that is dedicated to the treatment of cardiovascular pathologies. With more than 180 beds, CCN performs over 1,000 cardiac interventions each year and is considered one of the finest cardiovascular centers in the world. The facility has performed CT cardiac exams since March 2000, and acquired a LightSpeed® VCT in December 2004, the LightSpeed XT configuration in October 2006 and the Discovery™ CT750 HD in July 2008.

**“HDCT imaging will set new standards across applications and extend diagnostic confidence in computed tomography..”**

– Dr. Jean-Louis Sablayrolles

## Clinical images

### CCN case studies

A 51-year old man was diagnosed with an occlusion of the femoral arteries. Figures 1 to 3 demonstrate full body high-resolution imaging capabilities with a 39 sec acquisition time and 163 cm of coverage on the Discovery™ CT750 HD. Note the outstanding high resolution detail of the peripheral vessels.



Figure 1

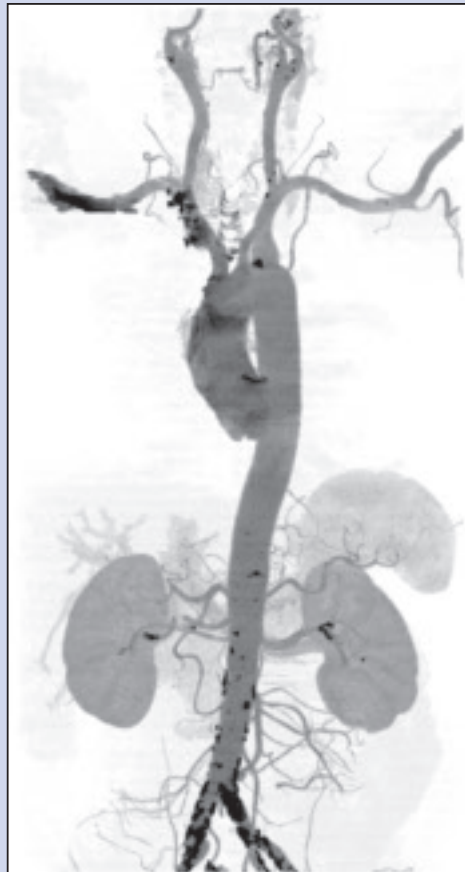


Figure 2

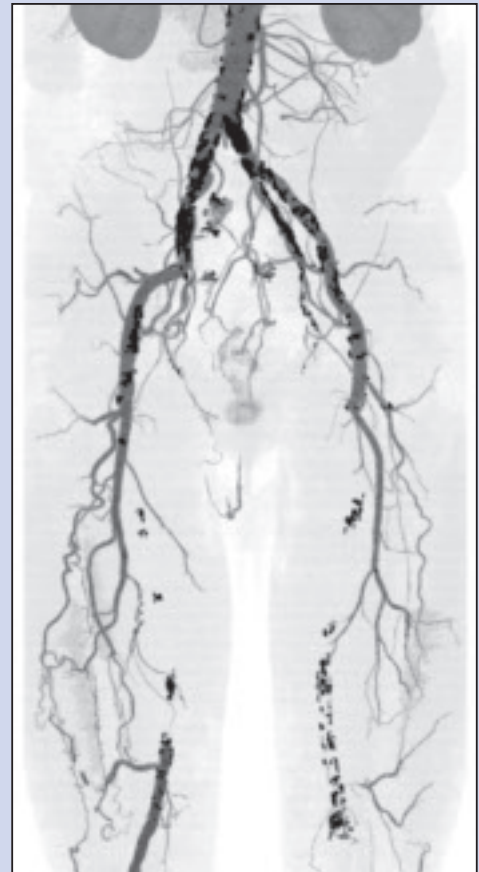


Figure 3

“I can comfortably say this is the most versatile system I have ever used in my practice. Currently, I have benefited from the vast improvement in image quality and my patients have benefited from the lower radiation exposure compared to previous scanners.”

– Dr. Jean-Louis Sablayrolles

A 62-year old man had a follow-up scan after several interventions in the left coronary artery. Low dose acquisition with prospective gating (SnapShot™ Pulse mode) delivered outstanding high resolution detail of the vessels along with instant visualization using only 1.9 mSv\* (Figures 4 and 5).



Figure 4



Figure 5

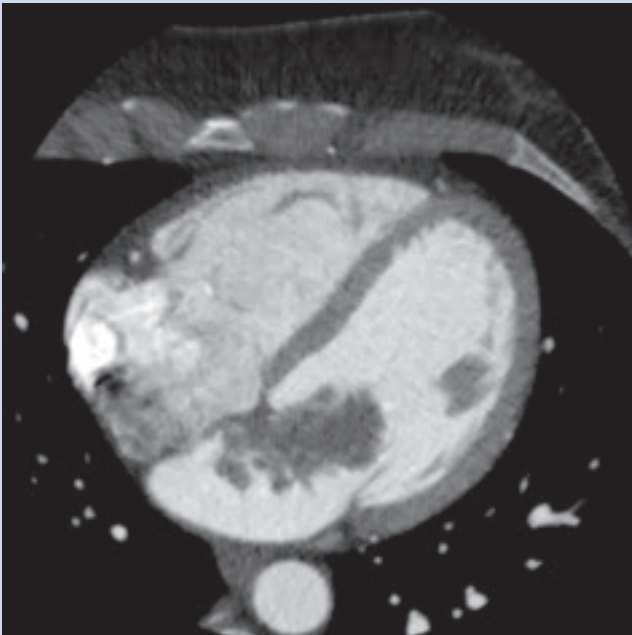


Figure 6

A 52-year old woman was referred after a transthoracic ultrasound exam detected an abnormal mass in the left atrium. A retrospective-gated helical exam using the High Definition acquisition with ASIR reconstruction delivered high resolution detail of the coronary arteries along with complete functional and morphologic information of the myxoma using only 5 mSv\* (Figures 6 to 8).

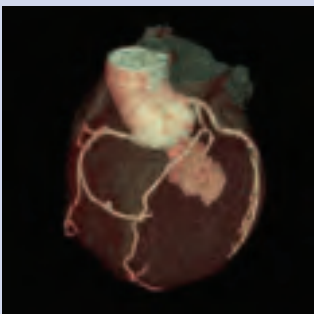


Figure 7

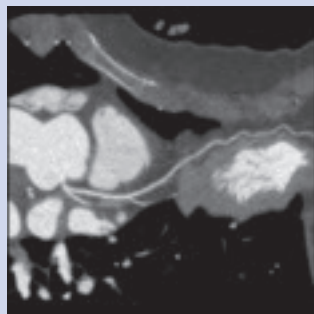


Figure 8

A 65-year old man had a follow-up scan after bypass surgery. Low dose acquisition with prospective gating (SnapShot™ Pulse mode) delivered outstanding high resolution detail of the bypass for a coverage of 240 mm using only 4.5 mSv\* (Figure 9). ■



Figure 9

\*Obtained by EUR-16262 EN, using a chest factor of 0.017\*DLP.