Cardiac Surgery: Greater Complexity and Greater Safety Alike for the Patients

Dante Pazzanese Cardiology Institute in São Paulo installs Brazil’s first hybrid operating room in a surgical center, equipped with the Artis zeego from Siemens.

Founded in 1954, Dante Pazzanese Cardiology Institute (IDPC) is a public hospital specializing in heart diseases. It is being recognized as one of the most innovative cardiovascular centers in Brazil and abroad. The hospital performs diagnosis and therapy of cardiovascular disease, including heart and kidney transplantations.

In addition, IDPC also holds cardiology and cardiovascular surgery residency programs, training roughly 200 professionals per year.

Over the last decades, the institute has also stood out for pioneering research that has resulted in important techniques such as open-heart surgery to correct dextro-transposition of the great arteries (‘Jatene Procedure’) and geometric reconstruction of left ventricular aneurysms, developed by Professor Adib Domingos Jatene, M.D. Another technique pioneered at the institute by Professor José Eduardo M. R. Sousa, M.D., was the use of sirolimus-coated stents to prevent restenosis in coronary arteries.

In March 2012, IDPC inaugurated Brazil’s first hybrid OR. In an area of 130 m², the room combines the equipment of a conventional OR with state-of-the-art interventional imaging. The Artis zeego, Siemens’ robotic angiography system, was chosen mainly for its outstanding flexibility and high image quality in both 2D and 3D imaging, thanks to syngo DynaCT. It helps guide complex heart surgeries, as well as vascular operations. Patients already attended to include both individuals with degenerative diseases, and pediatric cardiac patients.

IDPC cardiologist Alexandre Abizaid, M.D., explains that the hybrid OR allows for a new surgical concept – multidisciplinarity – and expands the treatment potentials. “Before, we basically had two possibilities for treating a patient: percutaneous procedures, and open-heart surgery. With the hybrid room, we can perform both in the same room, even at the same time. If we decide for a percutaneous approach and the patient suffers a complication, such as an obstruction, it is possible to convert immediately to open surgery without the need to transfer the patient to another room,” said the specialist.

Now being used full-time, IDPC’s hybrid room has proven especially beneficial in four fields: coronary surgeries with the introduction of mammary grafts followed by the placement of stents; valve substitutions; birth defects (such as hypoplasia of the left ventricle), and aortic diseases.

“The resources of a hybrid OR allow specialists to operate very complex cases while at the same time providing greater patient safety,” said Dr. Abizaid. Artis zeego represents a significant advancement thanks to its high quality images and ergonomic features.

“During the procedure, a surgeon can resort to CT-like images produced intraoperatively by the system and verify the extension of lesions or the correct placement of stents, for example,” described Dr. Abizaid. “As soon as the machine is no longer necessary for the procedure, the robotic arm is placed in a corner of the surgical room, freeing up space for the other stages of the procedure,” said the specialist.
Excellent Fit for the Hybrid OR

The new product range of Artis Q* also is an excellent fit for hybrid operating rooms. Hybrid ORs feature an angiography system along with all the equipment of a standard operating theater, allowing for new procedures and a wider patient range to be treated. Artis zeego and Artis Q ceiling systems are now available fully integrated with different configurations of the MAQUET MAGNUS OR table. It comes with a one-piece carbon top for artifact-free imaging with full body coverage and different configurations of a segmented tabletop for superior patient positioning. The benefit of the combination of an angiography system with a surgical table is that the OR can be used in a truly multi-disciplinary fashion, allowing for minimally invasive treatment, hybrid operations, and open surgery. Furthermore, the requirements of a multitude of surgical disciplines can be catered to – be it a sitting patient position with a segmented tabletop in neurosurgery or head-to-toe coverage in vascular procedures with a long, fully radiolucent carbon fiber table. In addition, Artis zeego and ceiling-mounted systems are also integrated with different versions of the TRUMPF TruSystem 7500 OR tables which offer similar benefits. The tried-and-proven Siemens Artis OR table, featuring a fully free-floating tabletop, also remains an essential part of the available portfolio. All tables are now also available with a wireless footswitch, giving the user more flexibility and hygienic advantages compared to the wired version. This selection of three fully integrated table families represents the widest portfolio of integrated surgical tables on the market, allowing Siemens to respond best to very specific customer needs and preferences.

* The Artis Q and Artis Q.zen is under FDA Review and not available for sale in the USA.