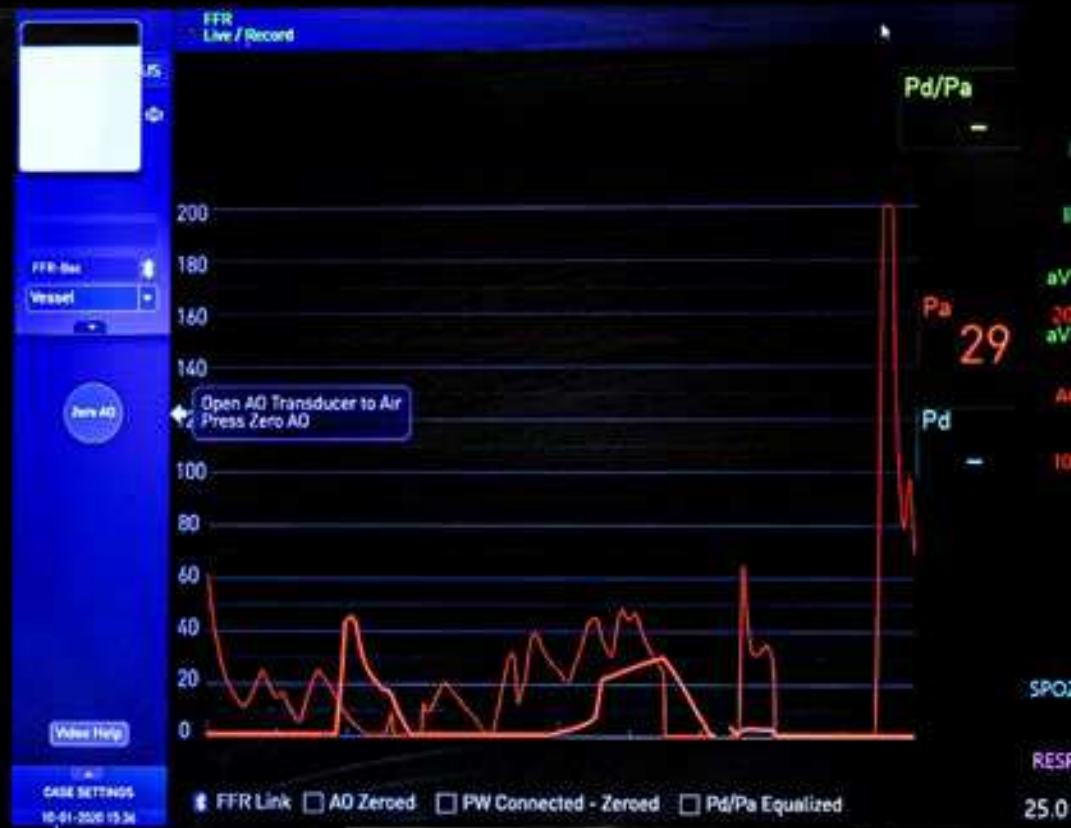




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*Interview with Prof. Laurent Feldman,
Cardiologist at Paris University and
Director of the Coronary Cathlab at
Bichat Hospital in France.*

Leading Solutions for Your Interventions

Prof. Laurent Feldman, professor of Cardiology at Paris University and director of the coronary cathlab at Bichat Hospital in France, is struck by the numerous benefits brought by the Alphenix Core + that was recently installed at his practise. Canon's cardiovascular intervention system enables to significantly reduce dose with game changing features like Spot ROI and Live Zoom, and to ease procedures while smoothly integrating with the hospital's digital workflow.

Bichat Hospital belongs to the Assistance Publique Hôpitaux de Paris (APHP), a large network of 30+ public hospitals in the Paris area, and is the lead interventional cardiology center of APHP in the northern part of Paris. The cardiac intervention team comprises ten physicians and eight nurses, who perform 2,500 annual coronary procedures, including 900 percutaneous coronary interventions (PCI), 25% of which in an emergency setting.

A service of this magnitude requires a 24/7 access to the cathlab and on call hospital staff. Due to strenuous financial constraints, our staff is relatively small.

Most of the PCI – even emergent PCI – are performed by a single operator; also, we share our nurses with the structural intervention team, a situation that often leads to only one coronary cathlab running for half days.

Personnel involvement has been key to face these constraints. “I am blessed with a team of wonderful people who work in concert for the community. The functioning of our cathlabs during the recent COVID-19 epidemics is a testimony of that. Altogether, it is a pleasure to work here,” he said.

Another great help to meet the increasing demand in cardiology interventions is high quality equipment and Prof. Feldman’s team has recently purchased two Alphenix Core + rooms.

A huge progress in challenging settings

The difference the system has brought in cardiac workflow is massive, especially after years using ageing equipment, Prof. Feldman explained. “We had been working for more than ten years with two old cathlab rooms

and had become particularly frustrated for the past two or three years. Our old system reached its obsolescence limits, with very frequent breakdowns and long periods spent working in only one room. Besides, the feeling that we were missing most of the technological breakthroughs of the last decade in the field of X-ray imaging, such as large monitors, X-ray dose reduction tools, stent enhancement and multi-modality imaging, was becoming more and more frustrating,” he said.

The cardiology team also wanted to better integrate the cathlab in the hospital information system and connect the equipment more fluidly to the reporting system and PACS.

“We were longing for a major strategic breakthrough that would facilitate our long hours spent in the cathlab, improve

safety for caregivers and patients, and altogether be more gratifying for the team and the institution,” he added.

The Alphenix Core + has brought all these advances and enables to quickly and safely perform all kinds of diagnostic and interventional coronary procedures, from basic coronary angiography to the most complex programmed or emergent PCI. Even cardiac surgeons perform cardiac biopsies with Canon’s system every day.

Bichat Hospital is a leading centre for heart and lung transplantation, performing a lot of right heart catheterizations and cardiac biopsies. To relieve the strain put by the shortage of anaesthesiologists, the team has also started to perform structural interventions that do not require general anaesthesia, e.g. patent foramen oval



Cardiology team, Bichat Hospital, Paris, France.



Biography

Prof. Laurent Feldman is a professor of Cardiology at Bichat Hospital (Paris University) and the director of the coronary cathlab. He did his cardiology internship in Paris, then spent four years doing experimental research in vascular biology at Tufts University in Boston and at INSERM in Paris. He has been working at the cardiology department of Bichat Hospital since 1998.

His field of expertise is coronary interventions and he is very much involved in teaching and tracking innovations and implementing them in daily practice.

“The Alphenix Core + Provides Great Features and Lower Dose.”

Prof. Laurent Feldman, Bichat Hospital, Paris, France.

closure under intracardiac echocardiography guidance or percutaneous mitral valve balloon commissurotomy in the Alphenix Core + rooms.

Prof. Feldman started working in the first Alphenix Core + room in November last year. The second room opened in March 2020, as the COVID-19 epidemics broke out in France, affecting particularly the northern east part of the country and Paris.

At Bichat Hospital, non-emergent coronary procedures were almost completely stopped as a result. “We have been very lucky that both Alphenix Core + rooms were almost completely installed in due time before the outbreak. As we emerge only now from this standstill, I think we still haven’t had enough time to enjoy all the potentials of the Alphenix Core + technology. It is still a work in progress,” Prof. Feldman said.

Great features that ease procedures and lower dose

Many features of the equipment have positively struck the team, starting with the equipment’s design. “When you enter the rooms, what strikes you most is the beauty of the design. It is compact, which was a prerequisite at Bichat since our rooms are rather small, in the 70m² range, and have low ceiling. The equipment is also elegant, with only few visible cables, including the wireless footswitch,” he said.

The team has adopted many features right away, for example the table side-controls that are adaptable to one or two-operator procedures, being both redundant and intuitive.

“When an operator works alone, he or she may choose to use the hyperhandle commands or the tablet, depending on his/her preference. When two operators work together, the lead

operator is closer to the hyperhandle, while the second operator reaches out to the tablet more easily. It eases the procedure and makes it more fluid, with less interference between the two operators,” he said.

Prof. Feldman uses Spot ROI during almost every complex PCI and thinks it is “a hit”, as it cuts radiation dose by almost 50% while maintaining excellent imaging quality in the region of interest. “If necessary, you may even increase the cine rate or the fluoro mode, so that the image is better in the region of interest without increasing patient radiation. We checked this on a series of patients with the help of Canon engineers,” he said.

Spot ROI proves particularly useful when crossing a chronic total occlusions (CTO), for example, and it will be a sea-change in handling complex PCI, Prof. Feldman believes. “Spot ROI is an optimal compromise between the best imaging quality around the target of the intervention and the lowest radiation dose in remote areas. It requires some training and thinking to define where Spot ROI best fits in your personal practice, but once you get used to it and are truly interested in keeping your radiation records on the safe side, it becomes routine,” he said.

Prof. Feldman using the QMAPP during his intervention. QMAPP (product of our sister company Fysicon) is a hemodynamic monitoring system. QMAPP beautifully completes the powerful Alphenix interventional system with cardiac workflow, cardiovascular reporting system and database, to deliver our best possible cardiac imaging and workflow solution. Combined with the Alphenix cardiovascular X-ray system, QMAPP provides a complete solution for the cardiac lab.

Live Zoom has also been broadly adopted by the team, who by default starts every procedure with a 30 cm field of view and a 1.8 Live Zoom magnification, i.e. the equivalent to a 17 cm field of view but with much less irradiation. The multiple layouts of the monitors have also generated a lot of enthusiasm from users.

Dose reduction was a major benefit sought by Prof. Feldman and his team. Coronary interventions have become extremely successful and safe at tackling very complex lesions, but these kinds of complex PCI are time consuming and radiation dose becomes an issue, and even an obsession. "Dose reduction is now a top priority everywhere in the guidelines, but how to achieve it is not always at hand. All the tools that have been made available to us with Alphenix Core + have been very useful to improve the overall safety of our procedures radiation-wise - Spot ROI and Live Zoom, but also sound alerts and the very intuitive dose tracking system," he reported.

With the Alphenix Core +, the team can now lower dose by 40 to 50%, in addition to the intrinsic built-in dose reduction algorithms of the system per se. "It is a huge and constant source of satisfaction," he said.

Successful integration into the hospital's digital system and strategic investment

A key motive for purchasing the new equipment, and one to which Bichat paid much attention, is the system's excellent integration with the hospital's reporting system (Cardioreport, Medireport),



information system and PACS (Orbis, Agfa), as well as the multimodal imaging systems that have become a must in sophisticated interventions, for example intravascular ultrasound, optical coherence tomography, fractional flow reserve, and intra- or extracardiac ultrasound.

"This successful integration of the cathlab in its digital environment has been a great source of satisfaction for all of us since we had been advocating this move for a long time and no one at APHP had succeeded in implementing it to such an extent. Kudos to the engineers and technicians of our institution, our imaging partners and the Canon team!" he said.

Having a state-of-the-art cathlab facility is also a strategic investment for Bichat in the current clinical landscape, as many private interventional cardiology centres have emerged over the years and become direct competitors. "In this competition, there is no room for obsolete equipment and out-dated technology. Our administration was fully aware of our lagging behind in terms of cathlab facilities and was eager to improve our working conditions to stay competitive and maintain a high level of activity. Cardiac interventions is a strategic asset for the hospital and represents more than 50% of its financial incomes," he said.



Canon's Alphenix Core + at Bichat Hospital, Paris, France.

With the Alphenix Core +, Bichat Hospital will rank among the top institutions in Europe, being able to perform high volumes of cases, focus on complex PCI, such as bifurcations, chronic total occlusions or high risk acute coronary syndromes. "Being a European leader means all that and also teaching interventional fellows coming from abroad, leading and participating in high level multicentre research, and organising teaching courses and live cases. All these services require first class cathlab equipment and technology," he said.

Close cooperation with Canon: the basis of a successful installation

The project on installing two Alphenix Core + rooms took place in the framework of a very competitive public market, in which four cathlabs were presented to the hospital's expert committee in February 2019. Once the decision was made to go for Canon and the financing aspects were discussed and agreed upon, things moved forward at a rapid pace.

A timetable was set for the installation of both rooms, taking into account the known fluctuations of interventional activities, which are traditionally lower in August-September and in December-January.

"Working in only one room can be challenging in cardiology since emergencies can come up any time. Therefore, we organised some back-ups with a vascular room in the radiology department and with our hybrid room in case of an emergency or very busy schedule. Most importantly, thanks to everyone's motivation, we suffered no delay in the installation of the new rooms and the process took seven to eight weeks each," Prof. Feldman said.

Another challenge was for everyone involved in the project to speak the same language. The cardiology staff had to understand Canon technology specifics and foresee how it fits in practice, while the hospital informa-

tion system had to accept a relative loss of sovereignty when opening the access to external actors.

The Canon team put together the pieces of the project and played the role of a relentless coordinator, always eager to offer the best of its technology no matter the obstacles, Prof. Feldman recalls.

"For sure, this atmosphere of "shared positive thinking" was instrumental in the overall success of the enterprise. Such a complex project would not have succeeded without a close partnership between Canon and Bichat. Such a partnership entails many aspects, but most importantly it must be two-way, with Canon putting its best technology (and the way to use it) on the table, and the hospital offering access to its expertise and needs in cardiac interventions. No doubt that this partnership will be long-lasting in the interest of Canon Medical, the cardiology team, and, above all, the patients," he concluded. //