



Pioneering Hybrid Robotics in General Surgery at the CHUV

Surgeons at Lausanne University Hospital (CHUV) perform the world's first hybrid robotic general surgery. Distalmotion and CHUV announce the launch of a clinical study. The CHUV's Division for Visceral Surgery is at the forefront of establishing a new standard of patient care, and will become a global reference center for hybrid robotic surgery with Dexter.

Lausanne, 16 July 2021: Distalmotion and Lausanne University Hospital (CHUV) announced today the successful start to a case series using Distalmotion's surgical robot, Dexter. Prof. Dieter Hahnloser, PD Dr. Fabian Grass and their team at the CHUV were able to carry out the world's first hybrid robotic colorectal procedure without complications. Said first procedure was a rectopexy. This marks Dexter's first clinical use in general surgery.

Distalmotion and CHUV also announced the launch of a clinical study. The Division for Visceral Surgery at CHUV, run by Prof. Nicolas Demartines, Chair of the Department of Surgery, will study and evaluate Dexter's clinical benefits in colorectal surgery, and also provide input in the development of procedure guidelines and training protocols for hybrid robotic surgery with Dexter. The CHUV is thereby set to become a global reference center for hybrid robotic surgery.

Together with select other European institutions, the CHUV has long been the cradle of hybrid robotic surgery. From early concepts and prototypes, to first clinical use and ensuing clinical studies, Prof. Hahnloser and PD Dr. Grass were among the world-leading surgeons to provide key input in the development of Dexter.

Robotics in minimally invasive care: A new approach, a new era

The traditional (non-hybrid) approach to surgical robotics forces surgeons to choose between manual laparoscopy and robotics – forcing them to weigh a trade-off in minimizing the perceived downsides of foregoing either technique. Dexter corrects this false dichotomy. Dexter surgeons can choose freely which steps of a procedure they carry out laparoscopically, and for which steps to employ robotic aid, thus maximizing the benefits of each technique.

Commenting on how the longstanding collaboration with Distalmotion culminated in Dexter's first clinical case series, Prof. Hahnloser said: "We have come full circle, from the validation of Dexter's hybrid approach through countless test-runs, to launching a clinical study where the first procedure was carried out without complications and with the desired patient outcomes."

PD Dr. Grass adds: "The hybrid approach overcomes prior constraints and allows us to leverage the best of both techniques: laparoscopy and robotics. With this approach minimally invasive surgery may become more broadly accessible in our field."

Prof. Hahnloser concludes: "This is a paradigm shift in how we approach robotic surgery. The hybrid approach means surgeons remain sterile throughout the course of an operation, thus bringing them back into the sterile field, with direct access to their patients and teams. This also optimizes teamwork dynamics and unlocks new training opportunities in the OR." The Chair of Surgery, Prof. Demartines added: "It's the role of academic centers to scientifically assess the benefits of new surgical tools and techniques, and I am happy that our team fulfills this objective very well."

Looking forward to the continuation of the case series that will amass more clinical evidence and help standardize Dexter procedure protocols, Michael Friedrich, CEO of Distalmotion, reflects: "If you focus on leveraging robotic aid where it makes most sense, then a versatile, hybrid model like Dexter will go a long way in making surgeons' lives easier and ultimately produce better patient outcomes. The first Dexter procedures confirm this and we look forward to further demonstrating and standardizing hybrid robotic surgery through the ensuing clinical study."

Defining hybrid robotic surgery: from concept to clinical reality

To date, robotic aid has struggled for widespread adoption in general surgery, despite mounting evidence for its key benefits and its potential to help improve patient outcomes. On the other hand, certain laparoscopic workflows have proven to be efficient and effective, and have firmly established themselves in the OR. The idea to integrate the advantages of both techniques – laparoscopy and robotics - therefore resonated with Prof. Hahnloser and Dr. Grass early on, several years ago.

The Division for Visceral Surgery at the CHUV has been an integral part of Dexter's evolution ever since, and helped turn hybrid robotic surgery into a clinical reality. In recent years Prof. Hahnloser and team played an active role in exploring, qualifying – and disqualifying – various Dexter prototypes and contributed to defining the underlying principles of Dexter's hybrid approach. Prof. Hahnloser shares some reflections and outlook on Dexter's development: "We went through an iterative development process, where the end user – us, the surgeons – were allowed to input from the outset. This process ended up defining a new category of surgery and yielded a truly user-friendly robot. In our first procedure, Dexter demonstrated his versatility and user-friendliness. The system and all features integrated into our team's workflow seamlessly and quickly."

PD Dr. Grass explains: "The concept of hybrid robotic surgery caters to our specific needs, as surgeons, and in some sense, was conceived to put us back in the driver's seat. The first case quickly showed that the Dexter system delivers on this objective, catering to our specific requirements, being akin to the clinical realities in the OR, while also allowing us to unfold our individual preferences and teamwork dynamics."

Prof. Hahnloser also observed: "The pace at which every team member, from our biomedical engineers, to the scrub nurses, became acquainted and comfortable with the system points to two potential benefits of the hybrid approach: cross disciplinary use, across teams and specialties, and low training intensity with manageable learning curves." Michael Friedrich summarizes: "All signs point to hybrid robotic surgery being accessible for a wide repertoire of procedures, fitting into OR theaters of all sizes and being quick and easy to adopt for teams, irrespective of previous robotics experience. On clinical and economic level this should allow for more than one robot per institution, quite likely multiple robots per department - a paradigm shift for most hospitals and healthcare systems."

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Background & Contact

About Lausanne University Hospital (CHUV)

CHUV is one of Switzerland's five university hospitals, alongside Geneva, Bern, Basel and Zurich. It is tasked with three basic missions by the public authorities, namely care, teaching and research. In 2020, CHUV's 11,942 employees cared for 48,227 inpatients, accounting for over 456,974 days of hospitalisation. It dealt with 75,457 emergencies, provided 1,346,973 outpatient consultations and welcomed 3,180 new babies into the world. The Division for Visceral Surgery performs about 2,500 procedures per year. Its annual budget is 1.782 billion Swiss francs. CHUV works closely with the Faculty of Biology and Medicine of the University of Lausanne to provide undergraduate, postgraduate and continuing education for doctors. It also works with other higher education institutions in the Lake Geneva area (including EPFL, ISREC, the Ludwig Institute for Cancer Research and the University of Geneva), with the University Hospitals of Geneva and other hospitals, health care providers and institutions. CHUV has been ranked as one of the 10 best hospitals in the world since 2019 according to Newsweek magazine.

About Distalmotion

Distalmotion is an international medical device company founded and based in Lausanne, Switzerland. Our mission is to remove the complexity out of robotic surgery in order to establish a new standard of care, where all patients in general surgery, gynecology and urology have access to best-in-class minimally invasive care. To do so, we have developed a surgical robot called Dexter. Designed, developed and manufactured in Switzerland, Dexter integrates the benefits of laparoscopy and robotics. Dexter is the world's first and only hybrid surgical robot.

For further information visit: dexter.surgery and follow us on LinkedIn/Twitter: @Distalmotion.



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Photo Credits & Assets

Picture 1: Dexter in Action - First Hybrid Robotic Surgery in General Surgery at CHUV, Lausanne.
Credits: "Distalmotion & CHUV, 2021"

Picture 2: Dexter in Action - First Hybrid Robotic Surgery in General Surgery at CHUV, Lausanne.
Credits: "Distalmotion & CHUV, 2021"

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