

A Minor Revolution for Dialysis Patients



■ **CHARTRES.** The hospital center is the second in France to create arteriovenous fistulas percutaneously, an operation done in patients with kidney disease before they start dialysis.

■ **SURGEON.** This technique, used by Dr. Mallios in an outpatient procedure, is more comfortable for patients and prevents some complications.
PHOTO: QUENTIN REIX

NEWS OF THE DAY

Chartres Hospitals

A Minor Revolution

Medicine

Chartres is the second hospital center in France to create arteriovenous fistulas percutaneously. This technique, used in outpatient surgery by vascular surgeon Dr. Alexandros Mallios, improves care for patients with kidney disease who are receiving dialysis.

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On the patient's arm, near the elbow, the incision was no bigger than one used to draw blood. With his eyes glued to the portable ultrasound machine, Dr. Alexandros Mallios delicately inserted a tiny guidewire into a vein, then an artery. "I'm going to grab the artery and the vein at the same time to seal them. A generator will heat them, then a 5 mm balloon will enlarge the newly formed vessel."

Yesterday morning, the vascular surgeon created his fourth percutaneous arteriovenous fistula in the Chartres Hospital operating room, at the Pasteur site in Le Coudray. This innovative method is a true revolution in the care of dialysis patients. Chartres is the second hospital center in France to offer it, second to the Montsouris Institute in Paris.

The arteriovenous fistula, created under locoregional anesthesia (only the patient's arm is "put to sleep"), whether created percutaneously or surgically, is critical to perform dialysis on patients with kidney disease. Patients are connected to a machine that takes the place of the kidneys in clearing the blood of toxic waste. But for the procedure to be complete in four hours, there needs to be a high volume of blood flow.

Dr. Catherine Albert, head of the nephrology-hemodialysis department at Chartres Hospitals, explained "Seventy liters of blood are processed

at a rate of 300 to 400 ml/minute. The fistula helps us increase venous flow by creating a link between the vein and the neighboring artery."

Before Dr. Alexandros Mallios arrived, Chartres patients underwent surgery in Orléans (Loiret). The vascular surgeon's arrival has made it possible for patients to be treated closer to home, but also for the hospital to offer a new technique that requires no incision apart from what is necessary to pass the instruments through, and consequently leaves no scar.

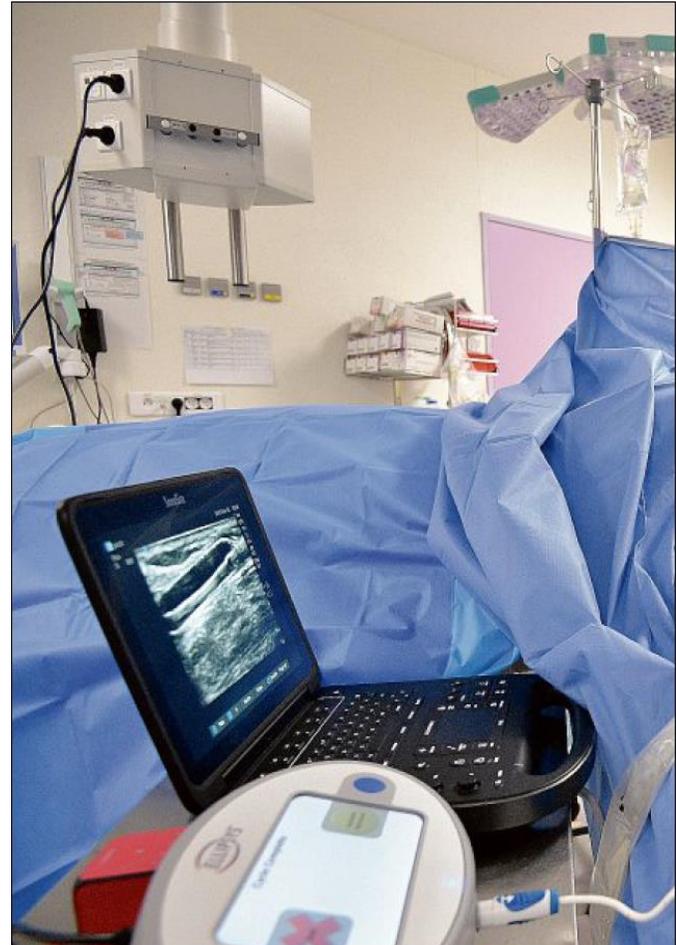
Trained in the United States, Alexandros Mallios adapted this innovative method for his own practice: "It is a very simple technique, but the equipment used is tiny. You have to be very precise, pay attention to all the little details."

"To Give Patients More Options"

The surgeon has created 190 percutaneous fistulas at the Montsouris Institute since 2017, sometimes on Chartres patients, and has observed positive effects compared with surgical fistulas:

"It is less traumatizing for vessels, less painful and the procedure takes less time. Blood flow is also more controlled and the pressure lower. There is less damage to the vein, which prevents aneurysms. Surgical fistulas sometimes expand over time, which is strenuous for the heart."

This technique cannot, however, be applied to all patients treated in hemodialysis: "We prioritize elderly and worn down patients. The vein and artery also need to be close together in the forearm. If we have to move them next to one another, we need to use the surgical method. The goal is not to replace surgery, but to give patients more options."



VASCULAR. Dr. Alexandros Mallios created his fourth percutaneous arteriovenous fistula in the Pasteur hospital operating room. PHOTOS: QUENTIN REIX

Ultrasound-supported Care

TECHNIQUE. Used in the operating room, the ultrasound machine can also be a valuable tool to treat patients with kidney disease who need dialysis. To hook up the machine that purifies their blood, nurses often insert the needles "blind," relying on the arteriovenous fistula scar for guidance. With the percutaneous technique, there is no such scar. Dr. Alexandros Mallios, vascular surgeon with Chartres Hospitals, added: "We can also use the ultrasound machine to check where the fistula is. We can do this completely safely." Dr. Catherine Albert, head of the nephrology-hemodialysis department, plans to offer training to her nurses in 2019.



is Innovating for Dialysis Patients

NEWS OF THE DAY

in the Operating Room



BY THE NUMBERS

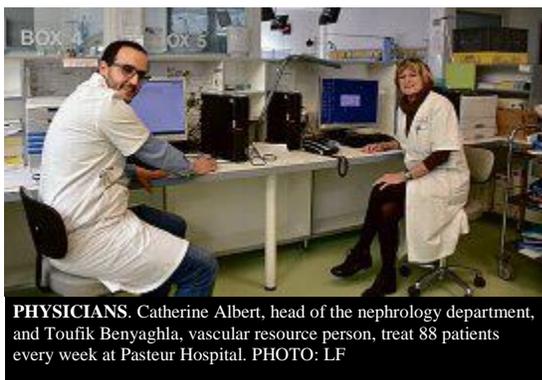
- 88** patients are treated every week in the Chartres Hospitals nephrology-hemodialysis department.
- 60** care providers work in the Chartres Hospitals nephrology-hemodialysis department: five staff practitioners, two residents, two interns, 30 nurses and 21 nurse's aides.
- 13** beds in the inpatient unit of the Chartres Hospitals nephrology-hemodialysis department.
- 20%** of patients arrive at the Chartres Hospitals nephrology-hemodialysis department with end-stage kidney failure.
- 5%** per year, the growth in new patients diagnosed with chronic kidney disease.
- 4** hours of dialysis, on average, three times a week, are required for patients whose kidneys are no longer functional. The only alternative is transplant.

“Over 50% of Dialysis Patients have Diabetes and Hypertension”

The Chartres Hospitals nephrology-hemodialysis department is the referral center in Eure-et-Loir for the treatment of patients with poorly functioning kidneys.

It treats cases of acute kidney failure (that have come to critical care or the emergency room), newly diagnosed chronic kidney disease and patients with multiple pathologies (kidney disease combined with diabetes, hypertension, etc.)

The department has five hemodialysis boxes, each of which can accommodate four patients



PHYSICIANS. Catherine Albert, head of the nephrology department, and Toufik Benyaghla, vascular resource person, treat 88 patients every week at Pasteur Hospital. PHOTO: LF

under nurse supervision. Today, however, this is no longer adequate, as Dr. Catherine Albert mentioned:

“Our expansion plan was approved by the Regional Health Agency. We will be receiving eight additional stations.”

The arrival of vascular surgeon Dr. Alexandros Mallios in September 2017 meant that the hospital no longer had to send its patients to Orléans (Loiret) to create the arteriovenous fistulas needed to undergo dialysis. The surgeon creates about sixty such fistulas each year. He operates on

three to four patients, once a week. “Thirty percent of dialysis patients are diabetic; over 50% have diabetes and hypertension,” emphasized Catherine Albert. “Their veins are often damaged. The percutaneous technique offers them better care.” ■

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MORE INFO

Prevention. The nephrology-hemodialysis department is organizing an information and screening day on Thursday, March 14, in the lobby of the Pasteur hospital.