

Minimal scar techniques in living donors for kidney transplant

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Kidney transplant from a living donor, besides of being the best option for young people and those affected by particular conditions, results in increased organ survival and solves in part the organ shortage afflicting Spain since the mid-90 despite the high rate of cadaveric donation.

According to the National Transplant Organization in 2010 in Spain 240 living donor kidney transplants were made, which represents 11% of the total. This year the expectation is that this number will grow to about 300, which would be almost about 13-15% of the total. Given these data and the need to keep looking for new surgical technologies for the improvement of transplantation procedures, the experience of the minimally invasive surgery team at the IDIBAPS - Hospital Clínic of Barcelona has promoted a new way of improvement in living donor programs.

The work presented today at the Catalan hospital by Dr. Antonio Alcaraz, IDIBAPS investigator and head of the department of Urology at the very center, and his team, confirm the feasibility of surgical techniques with minimal scars (10 and 5 mm) for the extraction of a kidney applied to transplantation. Creators and pioneers in the application of the NOTES technique (Natural Orifice Transluminal Endoscopy Surgery), an approach that aims to conduct surgery through natural orifices of the body, the team led by Dr. Alcaraz applies the modified transvaginal (through the vagina) and transumbilical (through the navel) extraction techniques to kidney transplantation. European Urology magazine published the first World Series of kidney donors by

transvaginal nephrectomy surgery with the technique developed in our center.

The medical team at Hospital Clínic which has promoted this milestone and held today a press conference, is formed by Dr. Antonio Alcaraz. , head of the Urology department at the Hospital Clínic, Dr. M^a José Ribal. , head of the Uro-Oncology Unit, Dr. Joan Beltran. , head of the anesthesia section at the Institut Clínic of Obstetrics and Gynecology and the Institut Clínic of Nephrology and Urology, Dr. Mireia Musquera. , responsible for the Kidney Transplant Surgical Unit, and the nurse Marta Tomás. The meeting included the testimony from two donors, male and female, both of them about 60 years old.

The series published by European Urology include 30 women (who have been operated using the NOTES technique); The Hospital Clínic team has operated too four males by the technique called LESS (Laparoscopic-Endoscopic Single-Site Surgery), also known as single port transumbilical surgery. The application of the technique in women (transvaginal nephrectomy) involves two pathways (vagina and abdomen), and two minimal scars (abdomen) of 5 and 10 millimeters. In the case of men (single-port nephrectomy), the pathway is restricted to the navel (which is a scar with a very little vascularization). "The minimally invasive surgical techniques for removal of living donor kidneys have many advantages: better quality of life for the donor, minimal scarring, shorter hospital stay and less pain", says Dr. Alcaraz.

"The surgical technique is completely reproducible and can be considered a good alternative procedure that could increase the rate of living donors among women", said Dr. Alcaraz. According to Dr. Rafael Matesanz, director of the National Transplant Organization (ONT), "it is very important to further enhance this technique, 100% Spanish, because it is the best opportunity for children, young patients with diabetes or renal failure, who need a young kidney the sooner the better".

On his side, Dr. Roser Deulofeu, Director of the Catalan Transplant Organization (OCATT) notes that "the Hospital Clínic and its surgical transplant team turn Catalonia again into a model for the rest the world, making a brilliant and pioneer step forward in surgical techniques that will minimize the physical injury due to a living donor renal extraction and make the recovery process easier".

Strong commitment with minimally invasive surgery

Since conventional open surgery gave way to laparoscopy-assisted surgery - requiring three, four and even five incisions -, pelvic and abdominal cavity surgeons together with robotics experts, investigate new ways to get into the body to explore structures, diagnose diseases and remove organs. Hospital Clínic of Barcelona supports minimally invasive surgery, as shown in today's presentation, and has consolidated its application in living donor transplant.

In 2008 the team led by Dr. Alcaraz performed in Spain the first transumbilical nephrectomy of this kind 85 years cancer diagnosed lady. Three days after the operation the patient went home without problems.

It is the same team that in 2007 performed the first European transvaginal nephrectomy applied to the treatment of a kidney cancer, a minimally invasive technique that made possible the removal of the affected kidney with only two 1 cm incisions in the abdomen, and another hidden one inside the vagina. Since then, Dr. Alcaraz and his team have performed amny kidney withdrawals through the vagina, a pathway that is presented today as a 100% safe and effective alternative for living donor transplants.

Only two or three years ago, Hospital Clínic of Barcelona's Urologists used laparoscopy assisted nephrectomy as the reference technique for the surgical treatment of these pathologies. Although it was a

revolutionary and well known technique, which has achieved great results over the past eight years and has improved patient care in terms of postoperative pain and hospital stay, laparoscopy still requires, as in traditional surgery, an abdominal incision to remove the kidney, leaving a scar of approximately 6 centimeters.

Unlike laparoscopy, transvaginal and transumbilical nephrectomy use the vaginal opening and the umbilicus, respectively, to remove kidneys. This technique has managed to avoid external scars and improved patient care, with decreased postoperative pain and a hospital stay under 48 hours. This milestone was possible thanks to an intensive program of research in experimental surgery developed by the Hospital Clínic Urology Department.

With the development of this type of surgery, Hospital Clínic of Barcelona strengthens its position as a reference center for the exploration of new strategies of image-guided surgery. The NOTES program is a revolution with the sole purpose of benefitting the patient with reduced recovery time, reduced pain and no external consequences.

Catalonia, a leader in living donor transplants

OCATT believes the new surgical technique one of many recent successes for Catalonia, a pioneer in transplant organizational model since 1984 and in all types of corneal tissue (1926) and bone marrow (1970) and solid organ transplant: kidney and pancreas (1965 and 1983 in the Clinic), liver and heart (1984 by Bellvitge and Sant Pau hospitals respectively), and lung cancer (1990 at the Hospital Vall d'Hebron).

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