

Johns Hopkins leads first 12-patient, multicenter 'domino donor' kidney transplant

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Surgical teams at The Johns Hopkins Hospital, Barnes-Jewish Hospital in St. Louis and Integris Baptist Medical Center in Oklahoma City successfully completed Saturday the first six-way, multihospital, domino kidney transplant. All six donors — one man and five women, and six organ recipients - four men and two woman — are in good condition, according to Robert Montgomery, M.D., Ph.D., chief transplant surgeon at Johns Hopkins.

The procedure, kidney paired donation (KPD), takes a group of incompatible donor-recipient pairs (recipients coming to one of the three hospitals with a willing donor who is not compatible by blood or tissue) and matches them with other pairs in a similar predicament. By exchanging kidneys between the pairs, it is possible to give each recipient a compatible kidney. In this way each recipient receives a kidney from a stranger and transplants are enabled that otherwise would not have taken place. Involving multiple hospitals created even more possibilities for matches.

In Saturday's so-called domino swap, a surgical team made up of nine surgeons, six anesthesiologists and 12 nurses began a cross-country set of operations with five incompatible pairs. An altruistic donor and a recipient who was next on the United Network for Organ Sharing (UNOS) organ recipient list started and ended the domino. Altruistic donors are those willing to donate a kidney to any needy recipient.

Just like falling dominoes, the altruistic donor kidney went to a recipient from one of the incompatible pairs, that recipient's donor's kidney went to a recipient from a second pair and so on. The last remaining kidney from the final incompatible pair went to the UNOS recipient.

As part of this complex procedure, Johns Hopkins flew one kidney to Integris Baptist; Integris Baptist flew one kidney to Barnes-Jewish and Barnes-Jewish flew one kidney to Johns Hopkins.

"We have performed a six-way domino procedure at our hospital before," says Montgomery. "But this is the first time we have done something this ambitious on such a grand scale involving two other hospitals. This will serve as a blueprint for national match in which kidneys will be transported around the country resulting in an estimated 1,500 additional transplants each year."

The 12 surgeries — all of which must start at the same time — began at 7 a.m. Eastern time. The nine surgeons in charge included four at Johns Hopkins, three at Integris Baptist and two at Barnes-Jewish. All finished by 7 p.m. Eastern time.

Johns Hopkins surgeons performed one of the first KPD transplants in the United States in 2001, the first triple-swap in 2003, the first double and triple domino transplant in 2005, the first five-way domino transplant in 2006 and the first six-way domino transplant in 2007. Johns Hopkins also performed the first multihospital, transcontinental three-way swap transplant in 2007.

Nearly 100 medical professionals took part in the transplants, including immunogeneticists, anesthesiologists, operating room nurses, nephrologists, transfusion medicine physicians, critical care doctors, nurse coordinators, technicians, social workers, psychologists, pharmacists, financial coordinators and administrative support people.

The other surgeons who participated in the surgery were Mohamad Allaf, M.D., Andrew Singer, M.D., and Dorry Segev, M.D., from Johns Hopkins Department of Surgery; Scott Samara, M.D., Shea Samara, M.D., and William Miller, M.D., from Integris Baptist Medical Center; and Surendra Shenoy, M.D., Ph.D.. and Martin Jendrisak, M.D., from Barnes-Jewish Hospital.

Source: Johns Hopkins Medical Institutions

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