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Hopkins transplant surgeons remove healthy kidney through donor's vagina

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In what is believed to be a first-ever procedure, surgeons at Johns Hopkins have successfully removed a healthy donor kidney through a small incision in the back of the donor's vagina.

"The kidney was successfully removed and transplanted into the donor's niece, and both patients are doing fine," says Robert Montgomery, M.D., Ph.D., chief of the transplant division at Johns Hopkins University School of Medicine who led the team that performed the historic operation.

The transvaginal donor kidney extraction, performed Jan. 29 on a 48-year-old woman from Lexington Park, Md., eliminated the need for a 5-to-6-inch abdominal incision and left only three pea-size scars on her abdomen, one of which is hidden in her navel.

Transvaginal kidney removals have been done previously to remove cancerous or nonfunctioning kidneys that endanger a patient's health, but not for healthy kidney donation. Because transplant donor nephrectomies are the most common kidney removal surgery — 6,000 a year just in the United States — this approach could have a tremendous impact on people's willingness to donate by offering more surgical options," says Montgomery.

"Since the first laparoscopic donor nephrectomy was performed at Johns Hopkins in 1995, surgeons have been troubled by the need to make a relatively large incision in the patient's abdomen after completing the

nephrectomy to extract the donor kidney. "That incision is thought to significantly add to the patient's pain, hospitalization and convalescence," says Montgomery. "Removing the kidney through a natural opening should hasten the patient's recovery and provide a better cosmetic result."

Both laparoscopies and transvaginal operations are enabled by wandlike cameras and tools inserted through small incisions. In the transvaginal nephrectomy, two wandlike tools pass through small incisions in the abdomen and a third flexible tool housing a camera is placed in the navel.

Video images displayed on monitors guide surgeons' movements. Once the kidney is cut from its attachments to the abdominal wall and arteries and veins are stapled shut, surgeons place the kidney in a plastic bag inserted through an incision in the vaginal wall and pull it out through the vaginal opening with a string attached to the bag.

Montgomery says the surgery took about three and a half hours, roughly the same as a traditional laparoscopic procedure.

The Jan. 29 operation is one of a family of new surgical procedures called natural orifice translumenal endoscopic surgeries (NOTES) that use a natural body opening to remove organs and tissue, according to Anthony Kalloo, M.D., the director of the Division of Gastroenterology at Johns Hopkins University School of Medicine and the pioneer of NOTES. The most common openings used are the mouth, anus and vagina.

Since 2004, successful NOTES in humans have removed diseased gallbladders and appendixes through the mouth, and gallbladders, kidneys and appendixes through the vagina.

Recently, Kalloo says, some medical experts have called for more studies to compare the safety and effectiveness of NOTES against traditional laparoscopies, which also leave very small scars, have been in use for many years, and are proven to be safer and less painful for patients than older "open" abdominal procedures. He supports more studies.

But, he adds, "natural orifice translumenal endoscopic surgery is the final frontier to explore in making surgery scarless, less painful and for obese patients, much safer." An organ donor, in particular, is most deserving of a scar-free, minimally invasive and pain-free procedure."

Source: Johns Hopkins Medical Institutions

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