

Surgical process of renal transplantation

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The standard kidney transplant for an adult recipient is usually a heterotopic procedure with the kidney placed in a retroperitoneal location, either in the right or left iliac fossa. The right iliac fossa is usually preferred, unless a future pancreas transplant is planned, or a kidney transplant as previously performed in the right fossa. In these cases, the left fossa is chosen. In very small pediatric patients (usually <20 kg), an intraperitoneal position usually allows for more space and anastomosis to larger vessels for inflow and outflow. For arterial inflow, the common iliac artery, internal iliac artery, or external iliac artery may be used. Generally, the external iliac artery is preferred. The iliac vein is used for venous outflow – again most commonly the external iliac vein. However, the optimal site should be chosen based on the position of the kidney. Urinary continuity is restored by connecting the transplant ureter to the bladder. This may be done with or without a stent. However, the surgical technique for renal transplantation has changed little from the original pelvic operation described in 1951 by Küss et al. It seems the operation has been standardized and there is little need for further discussions over the topic. In fact, the argumentation on surgical technique has never ceased since its birth, for optimization of the surgical outcomes, many aspects of operative techniques have been modified and novel techniques have been invented. The standard kidney transplant procedure is the pelvic operation originally used by French surgeons Küss, Dubost, and Servelle and their associates in 1951 and refined subsequently by Murray and Harrison for the first successful kidney transplantation in human history. The heterotopic pelvic approach has been widely accepted for its multiple advantages and considered a standard access. The classical surgical techniques of evascularization and urinary tract reconstruction have also been broadly used to this day. Over the past decades, the outcomes of kidney transplantation have improved markedly due to advancements in prevention and treatment of acute rejection episodes, management of posttransplant complications and better knowledge of immunosuppressive drugs. As a result, transplantation has become the mainstay and preferred treatment for patients of all ages with end-stage renal disease