

Commentary

Partial nephrectomy: Indications, procedure, complications

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ABOUT THE STUDY

A nephrectomy is a surgical surgery in which one or both kidneys are removed. It is typically carried out in cases of kidney cancer or when a kidney is injured or ill and unable to function correctly. Many methods, such as open surgery, laparoscopic surgery, and robot-assisted surgery, can be used to execute a nephrectomy (Volpe A, et al., 2004).

Indications

A non-functioning kidney, renal cell cancer, and a congenitally tiny kidney are only a few of the criteria for this treatment. The nephrectomy procedure for renal cell cancer is being modified quickly to allow for partial kidney removal. Nephrectomy is also carried out in order to transplant kidneys from living donors. For ureteral or kidney urothelial carcinoma, a nephroureterectomy entails the removal of a kidney, the entire ureter, and a small portion of the bladder (Mir MC, et al., 2017).

Procedure

The patient is given general anaesthesia during the procedure. Laparoscopic surgery or an open incision can be used to remove a kidney. To access the kidney during an open operation, the surgeon creates an incision in the side of the belly. The incision may alternatively be made in the middle, depending on the situation. The kidney is then removed after the ureter and blood arteries are severed. The abdomen and flank regions are cut with three or four tiny (5-10 mm) incisions for the laparoscopic method. Inside the body, the kidney is totally removed and put in a bag. The kidney is then removed during one of the larger incisions for cancer surgery. The kidney can be morcellated and removed through the tiny incisions if it is being removed for another reason (Reifsnnyder JE, et al. 2012). In recent times, this operation has only required one incision in the patient's navel. The name of this cutting-edge procedure is single port laparoscopy. A radical nephrectomy also includes at least some perinephric fat, possibly including Gerota's fascia, and typically also the ipsilateral adrenal gland. A total nephrectomy involves at least the removal of the entire kidney. Currently, there are treatments available for some conditions that don't involve

removing a kidney. Other possibilities include renal embolization for patients who are poor candidates for surgery, or partial nephrectomy if possible (Ha SC, et al., 2015). Rarely, nearby organs including the Inferior Vena Cava (IVC), colon, pancreas, or liver can be affected by renal cell tumours. Surgery using open or laparoscopic methods can safely and thoroughly remove the malignancy if it has not progressed to other locations.

Partial nephrectomy

In a partial nephrectomy, a kidney tumour and a small portion of healthy kidney are surgically removed with the dual goals of treating the malignancy and preserving as much healthy kidney as feasible (Ljungberg B, et al., 2010).

Indications

When there is a kidney tumour in just one kidney, when there are kidney tumours in both kidneys, or when removing the entire kidney could cause renal failure and the need for dialysis, a partial nephrectomy should be tried. The standard of therapy for almost all patients with minor renal masses is partial nephrectomy. If the renal tumours are in the right place and range in size from 4 to 7 cm, partial nephrectomy can also be used to treat them (Klingler DW, et al., 2005). Radical nephrectomy is the standard treatment for renal masses greater than 7 cm, unless the tumour only affects one kidney, there are tumours on both sides, or the kidney function is compromised. Patients may consider getting a second opinion if they are told their tumours are too large or difficult for a partial nephrectomy since surgeons who treat many kidney cancer patients are more likely to be able to spare the kidney than those who only see a few cases.

Procedure

Moreover, a partial nephrectomy is carried out while the patient is under general anaesthesia. Open surgery, laparoscopic surgery, or a robotic method can all be used to conduct a partial nephrectomy. Usually, the patient is positioned on the operating table with their back to the kidney tumour. The procedure's objective is to eliminate the kidney tumour and a small rim of healthy kidney tissue. Because the kidneys purify the blood, all

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blood eventually passes through the kidneys and 25% of it will go into the kidneys with each heartbeat. The blood supply to the kidney is frequently momentarily cut off in order to properly remove the kidney tumour. The surgeon must remove the tumour and suture the kidney's surviving tissue back together. For renal cell carcinoma, partial nephrectomy is frequently an alternative to complete or radical, nephrectomy (Gill IS, et al., 2000).

Complications

About 15–25% of patients who have a partial nephrectomy have problems. Bleeding, infection, and urine leak are the most frequent consequences (Guillonneau B, et al., 2001).

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