

Opinion Article

A generalized insight on kidney biopsy medical procedures

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ABOUT THE STUDY

Renal biopsy is a medical operation that involves removing a small piece of the kidney from the body for examination under a microscope. It is otherwise called as kidney biopsy. A microscopic study of the tissue can provide information for diagnosing, monitoring, and treating renal diseases. A renal biopsy can be performed to look for a specific lesion, such as a kidney tumour. However, most kidney biopsies are non-targeted because medical disorders that affect the kidney often impact all kidney tissue. Any sufficiently big piece of kidney tissue can be used in the latter case.

Before biopsy

A kidney biopsy, like most invasive medical procedures, is not without danger. Before proceeding, a nephrologist must be convinced that a kidney biopsy is of sufficient benefit to warrant the procedure's hazards. This will include careful assessment of patient characteristics as well as other clinical information gleaned from history, examination, and other non-invasive tests.

Before the biopsy, blood tests may be performed to confirm that there are no signs of infection or abnormal blood coagulation. Furthermore, a kidney ultrasound or other imaging study may be conducted before to biopsy to rule out structural abnormalities with the kidney, which could hypothetically raise the procedure's risk. Hydronephrosis, a pre-existing arteriovenous fistula in the kidney, cystic kidney disease, and small, shrunken kidneys are among these conditions.

Patients are frequently advised to avoid anticoagulant medications for one to two weeks before the biopsy to reduce the chance of bleeding. Aspirin, clopidogrel, heparin, and warfarin are examples of these drugs. Desmopressin may be given intravenously in the hopes of reversing the clotting

problems associated with kidney failure. To limit the danger of bleeding, strict blood pressure control is also attempted. Informed consent is normally obtained prior to the surgery. There will also be plans in place to guarantee that adequate post-biopsy care and supervision is available. Fasting is rarely necessary. However, this is dependent on the preference of the centre.

During biopsy

A nephrologist or an interventional radiologist usually performs a renal biopsy. The biopsy is scheduled using ultrasound or CT scanning to visualise the position and depth of the kidneys right before the procedure. The procedure will be performed with the patient laying on their stomach or on their side for a native kidney biopsy. The patient rests on their back for a transplant renal biopsy. The biopsy procedure takes roughly 15 minutes on average. Antiseptic solution is given to the biopsy site, and sterile drapes are used. If real-time imaging is employed, the equipment will be covered in sterile material. Hands will be washed and a sterile gown and gloves will be worn by the individual doing the treatment. A mask can be worn or not. The biopsy is normally done with the patient awake or under little anaesthesia.

The proceduralist injects local anaesthetic into the skin, subcutaneous tissue, and down to and around the kidney after the location has been prepped. The location should be numb after a few seconds and only a pressing sensation should be felt. The biopsy needle is inserted through a tiny 1–2 mm incision. Real-time imaging will be used to guide the placement of the local anaesthesia and biopsy needles in most circumstances. This will not be used in the case of blind biopsy. When the spring-loaded biopsy needle is discharged into the kidney to acquire a tissue sample, a loud click can be heard. Pressure will be applied to the biopsy site once enough kidney tissue has

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been obtained. It will be cleaned and dressed after a length of time. Sutures are rarely necessary.

After biopsy

The post-biopsy care will vary depending on the centre. To reduce the danger of bleeding, most hospitals will keep patients who have had a kidney biopsy for 4–6 hours. The patient's blood pressure and urine are constantly checked to ensure there

are no bleeding issues. Simple analgesics like paracetamol or acetaminophen are used to treat mild to moderate pain. Severe discomfort indicates a bleeding problem, which may necessitate a lengthier hospital stay and more diagnostics. Most hospitals will discharge patients and allow them to return home if no issues are discovered during this time. Patients who have received a kidney biopsy will be admitted to other centres for observation overnight.