

Kidney Biopsy

Practical bedside approach • Native and transplant kidneys

01 BEFORE THE PROCEDURE

- Confirm the indication and explain how the result may influence treatment.
- Explain the procedure, discuss bleeding risk and obtain informed consent.
- Check blood pressure, haemoglobin, platelet count and coagulation results.
- Review anticoagulants and antiplatelet drugs; manage them according to the local protocol and the patient's thrombotic risk.
- Review ultrasound, establish IV access and perform a time-out to confirm the patient and biopsy site.

02 NATIVE KIDNEY BIOPSY — TECHNIQUE

- Position the patient **prone**, usually with support under the abdomen.
- Use ultrasound to identify a safe route to the **lower-pole cortex**, avoiding major vessels and the collecting system.
- Prepare a sterile field and administer local anaesthetic along the planned needle path.
- Advance an automated biopsy needle under real-time ultrasound guidance.
- Ask the patient to remain still and briefly hold their breath when instructed, because the kidney moves with respiration.
- Obtain sufficient cortical tissue for the required pathological examinations.

03 TRANSPLANT KIDNEY BIOPSY — TECHNIQUE

- Position the patient **supine**, because the graft usually lies in the iliac fossa.
- Identify the graft, vessels and surrounding structures with ultrasound and Doppler.
- Select the safest accessible cortical area and plan a shallow trajectory that avoids the hilum, major vessels, bowel and collecting system.
- Use sterile technique, local anaesthesia and an automated needle under real-time ultrasound guidance.
- Obtain adequate cortical samples and apply local pressure after withdrawing the needle.
- The main technical differences are **patient position, kidney location and needle trajectory**.

04 AFTER EITHER BIOPSY

- Observe the patient with bed rest and monitor blood pressure, pulse, pain, urine output and visible haematuria.
- Investigate worsening pain, hypotension, tachycardia, heavy haematuria or difficulty passing urine urgently; these may indicate bleeding.
- Check haemoglobin and arrange imaging when clinically indicated.
- Individualise observation: selected low-risk patients may need 6–8 hours, while higher-risk patients require longer monitoring.
- Before discharge, explain warning symptoms, activity restrictions and when to restart antithrombotic medication according to the local protocol.

REFERENCES

1. MacGinley R, et al. KHA-CARI Guideline recommendations for renal biopsy. *Nephrology*. 2019;24:1205–1213.
2. KDIGO Transplant Work Group. Guideline for the care of kidney transplant recipients. *Am J Transplant*. 2009;9(Suppl 3):S1–S155. Chapter 9: Kidney Allograft Biopsy.

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