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INTERVENTIONAL RADIOLOGY

LETTER TO THE EDITOR

Letter to the Editor: Impact of biopsy route, muscle pathway, and cortex target on safety and diagnostic yield in ultrasound-guided renal parenchymal biopsy

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Dear Editor,

I read with great interest the recent article by Alver et al.,[1] comparing the safety and diagnostic yield of lateral-to-medial vs. medial-to-lateral approaches in ultrasound-guided percutaneous renal biopsy (PRB). The authors should be commended for tackling a previously unexamined technical question. Although the study provides highly valuable data, several methodological and anatomical aspects warrant further clarification.[1] First, the authors attribute the smaller perirenal hematomas observed with the medial-to-lateral approach (Group 2) to a tamponade effect provided by the thicker traversed paravertebral muscles (35.7 vs. 11.5 mm). However, bleeding after PRB primarily originates from intrarenal or capsular vascular structures located within the perinephric space, which is anatomically separated from the paraspinal muscles by the muscular fascia, retroperitoneal tissues, and renal fascial planes. Although a longer intramuscular needle tract may theoretically reduce tract-related oozing through increased tissue resistance, the paraspinal muscles alone would not be expected to generate sufficient compressive force to directly limit the expansion of a perinephric hematoma.

Second, the structural design of the study introduces a substantial risk of operator-dependent bias. The procedures were divided between two separate interventional radiologists, each of whom consistently used only one specific technique. Even though both operators possessed over 10 years of experience, the statistically lower optimal diagnostic yield (glomeruli) in Group 1 (73.0% vs. 85.0%) might reflect operator-specific variation rather than an inferiority of the technique.

In addition, the authors state that "two tissue samples" were targeted but do not report the exact total number of core biopsy passes actually performed per patient in each group. If one group required more additional passes because of initial fragmentation or perceived inadequacy, this would directly increase the bleeding risk.[2]

The study states that procedures were conducted only when blood pressure (BP) was below 160/90 mmHg, but it fails to provide or compare the actual pre- and intraprocedural systolic and diastolic BP values between the two groups. Hypertension has been reported as an important risk factor for post-biopsy bleeding complications and may influence hematoma size. Without standardization of baseline and procedural BP, attributing hematoma restriction solely to the thickness of the traversed muscles remains highly speculative.[3,4]

Equally critical is the omission of baseline renal function data, specifically serum creatinine levels and estimated glomerular filtration rate. Patients with higher baseline creatinine levels exhibit impaired platelet aggregation, which is a powerful independent predictor of increased post-PRB hematoma expansion.[5]

Furthermore, the authors state that persistent bleeding through the coaxial introducer was actively managed using autologous blood clots or absorbable gelatin sponges (Spongostan). Crucially, the manuscript lacks statistical data regarding the exact frequency of Spongostan

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use or autologous blood clot application in each group. If the operator in the medial-to-lateral approach group used tract embolization more frequently or preemptively, the smaller hematoma sizes could simply reflect iatrogenic hemostatic intervention rather than the traversal of thicker paravertebral muscles.

In summary, before concluding that the medial-to-lateral approach is superior in terms of optimal diagnostic yield and hematoma control, these findings should be validated in a prospective, randomized controlled trial in which BP profiles and the exact number of biopsy passes are strictly controlled and standardized.

Footnotes

Conflict of interest disclosure

The author declared no conflicts of interest.

References

1. Alver KH, Aslan HS, Arslan M, et al. Impact of biopsy route, muscle pathway, and cortex target on safety and diagnostic yield in ultrasound-guided renal parenchymal biopsy. *Diagn Interv Radiol*. 2026;32(4):479-486. [Crossref]
2. Andrulli S, Rossini M, Gigliotti G, et al. The risks associated with percutaneous native kidney biopsies: a prospective study. *Nephrol Dial Transplant*. 2023;38(3):655-663. [Crossref]
3. Shidham GB, Siddiqi N, Beres JA, et al. Clinical risk factors associated with bleeding after native kidney biopsy. *Nephrology (Carlton)*. 2005;10(3):305-310. [Crossref]
4. Kriegshauser JS, Patel MD, Young SW, Chen F, Eversman WG, Chang YH. Risk of bleeding after native renal biopsy as a function of preprocedural systolic and diastolic blood pressure. *J Vasc Interv Radiol*. 2015;26(2):206-212. [Crossref]
5. Korbet SM, Volpini KC, Whittier WL. Percutaneous renal biopsy of native kidneys: a single-center experience of 1,055 biopsies. *Am J Nephrol*. 2014;39(2):153-162. [Crossref]