ULTRASOUND-GUIDED RENAL BIOPSY: APPRAISAL OF A STANADARD TECHNIQUE FOR A BETTER PRACTICE

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Introduction

- Renal parenchymal disease is defined as a disease that involves one or more compartments of the renal parenchyma (i.e., the glomeruli, tubules, interstitium, or blood vessels of the kidney).
- The percutaneous renal biopsy of native kidneys has been an essential tool in the diagnosis and management of renal disease for over 70 years.
- With the evolution of imaging guidance, renal biopsy has become easier and safer.
- Ultrasound is the most commonly used tool for imaging guidance.

Aim of the work

This work aimed to evaluate a standard technique of US-guided PRB for better practice.

Patients and Methods

Patients: This study was conducted on fifty patients presenting with manifestations of diffuse renal parenchymal disease to the nephrology units of internal medicine and pediatric departments, at Alexandria University hospitals.

Methods: Detailed history taking including personal data present complaints and past history.

- Laboratory investigations with special emphasis on coagulation profile.
- Percutaneous renal biopsy:
- Pre-biopsy ultrasound scan:

-To assure the presence, the orientation and assess the size and echogenicity of both kidneys.

-To exclude underlying focal pathology.

(2) Ultrasound-guided percutaneous renal biopsy.

-Using real-time ultrasound to trace the trajectory of the needle passing and cutting through the lower pole of the kidney.

(3) Post-biopsy ultrasound scan.

-Immediate, 1 and 2 hours post-procedural.

Results

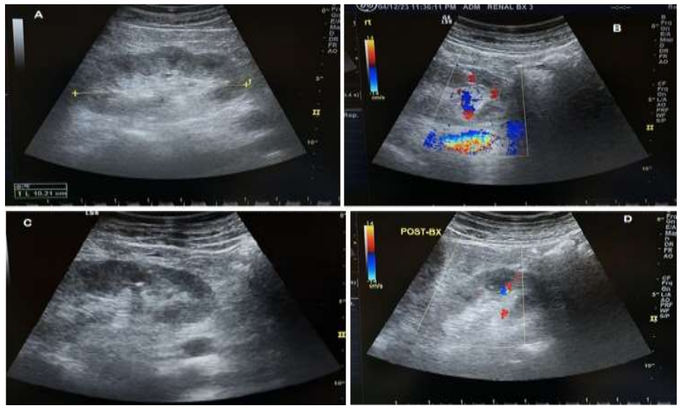

Figure 1: A: pre-procedural US of the left kidney showing normal size and increased cortical echogenicity (grade II), B-C: the biopsy needle is well positioned within the lower pole with no segmental branches detected on color Doppler. D: post-biopsy US with CD with no complications

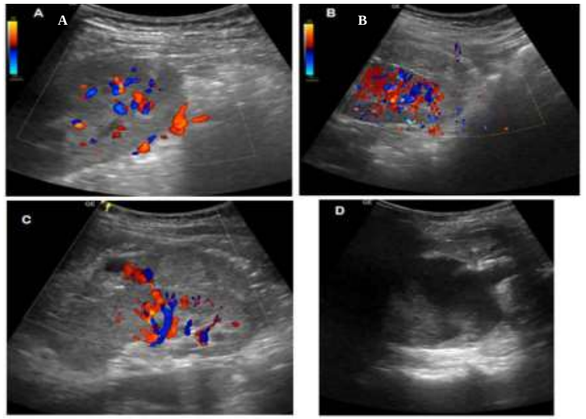

Figure 2: A-B: rapidly expanding peri-nephric hematoma detected on the post-biopsy scan. C: color Doppler US image illustrating the formation of a pseudo-aneurysm within the hematoma. D: anechoic component of the hematoma reflecting ongoing bleeding.

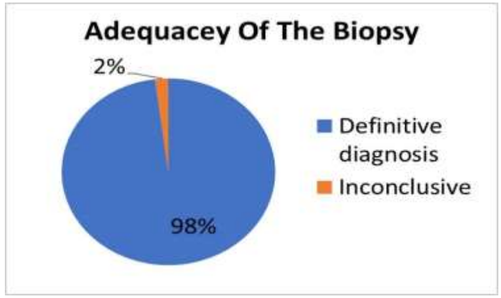

Figure 3: Adequacy Of The Biopsy

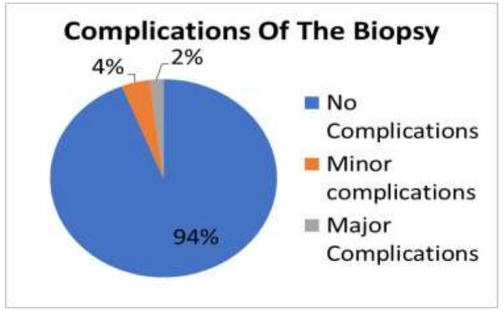

Figure 4: Complications Of The Biopsy

Conclusion

-Renal biopsy is a cornerstone in the management of different renal diseases.

-US-guided PRB is the gold standard in obtaining renal biopsy as it provides real-time visualization of needle placement without radiation hazards.

-The procedure is safe with minor risk to the patient, provides adequate tissue for diagnosis, and can be done in an outpatient setting.