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Educational Abstract

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Contrast Enhanced Ultrasound: An emerging differentiator of complex renal cysts?

Adnan Kabeer, Azhar Ali, Ruhaid Khurram, Nazia Malik, Sabeeh Syed, Sudep Biswas, Ashwin Suri, Taha Khan, Kurran Gujral, Arthikka Thavakumar, Noreen Rasheed, Sami Khan, Imran Syed

Basildon and Thurrock University Hospital NHS Foundation Trust, United Kingdom

Learning objective

To determine the efficacy of contrast enhanced ultrasound (CEUS) in improving the diagnostic yield in patients with equivocal radiological studies.

Background

Renal cysts are often detected incidentally during non-contrast ultrasound scans (NCUS). Distinction between Bosniak type IIF and III often leads to further imaging for clarification.

CEUS is a modality increasingly used by radiologists to address this distinction and avoid the need for adjunct investigations such as CT or MRI.

Findings

A total of 30 cases (16 male and 14 female) of CEUS of the kidneys were identified over a 5-year period. Mean age of 66 years with range 38 – 85 years. Indications for CEUS included the following: inconclusive from NCUS/CT/MRI (n=26, 86.7%), inability to tolerate CT due to poor renal function (n=3, 10%) and surveillance in (n=1, 3.3%). Confirmatory diagnosis was achieved by CEUS in 12 cases (40%) and further clarification in 15 (50%) of cases. The remaining 3 (10%) of cases yielded indeterminate results. In addition, CEUS confirmed a diagnosis of malignancy in 4 cases (13.3%) that otherwise were ambiguous. In 6 cases (20%) CEUS confirmed no renal lesions when previous studies had suggested so. In 5 cases (16.7%), CEUS was able to clarify Bosniak 2f/3 cysts with accuracy.

Conclusion

We have objectively demonstrated an improvement in the recognition of Bosniak 2f/3 renal cysts which are often difficult to validate. CEUS is therefore an important adjunct to imaging of kidneys and further studies are encouraged strengthen its role in this radiological pathway.