

Horseshoe kidneys as seen on scintigraphy – an incidental finding in cancer imaging

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KEYWORDS Horseshoe kidney • Nuclear scintigraphy • Renal anomaly

OBJECTIVE

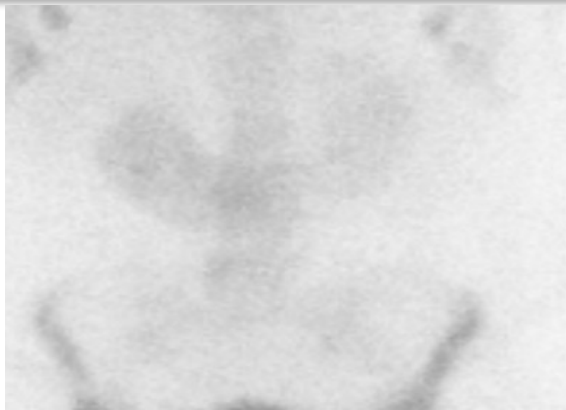
A horseshoe kidney is the most common congenital fusion anomaly of the kidneys (1 in 400–600 individuals), characterized by fusion of the lower poles across the midline by an isthmus of renal or fibrous tissue. On scintigraphic imaging it can mimic pathological uptake or obscure lesions if not correctly identified. This pictorial review highlights characteristic scintigraphic appearances on different nuclear medicine scans and the importance of recognizing normal.

METHOD

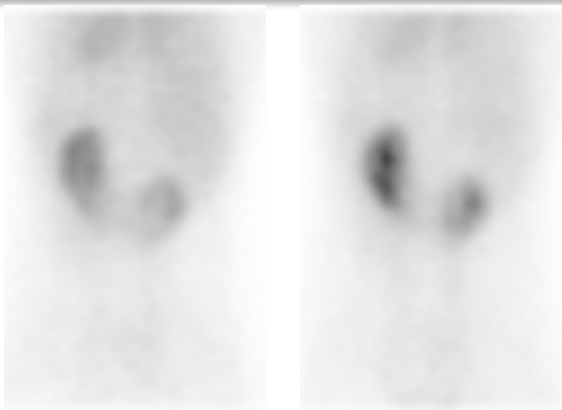
A retrospective search of the Radiology–Nuclear Medicine database was performed over a four-year period to identify incidental cases of horseshoe kidney encountered during routine oncologic imaging. Representative cases were selected based on image quality and educational value in demonstrating the imaging appearance across different nuclear medicine modalities.

CASES

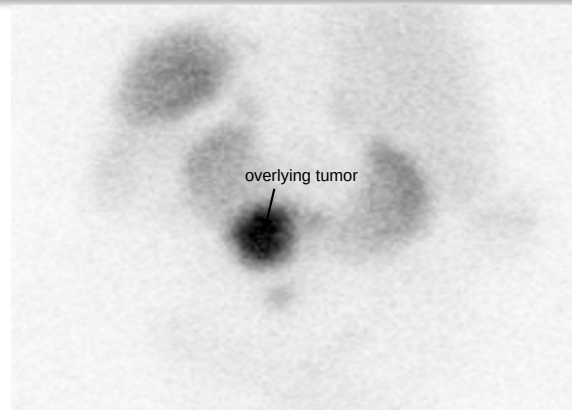
Tc99m MDP Bone Scintigraphy



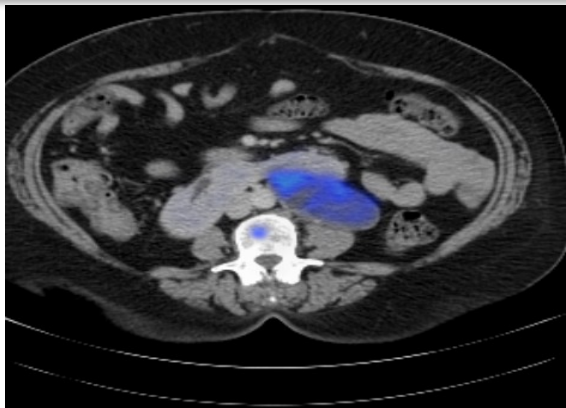
Tc99m DTPA renogram



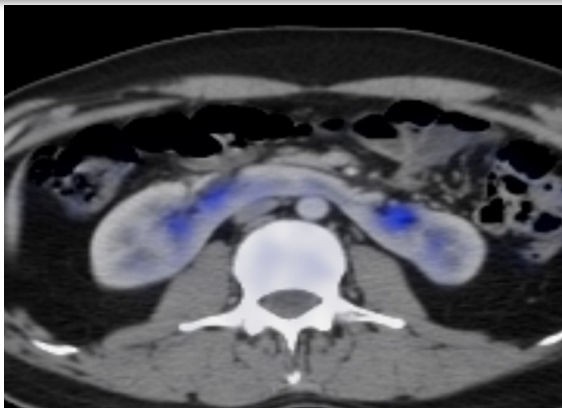
Whole-body scan post Lu-177 Dotatate therapy



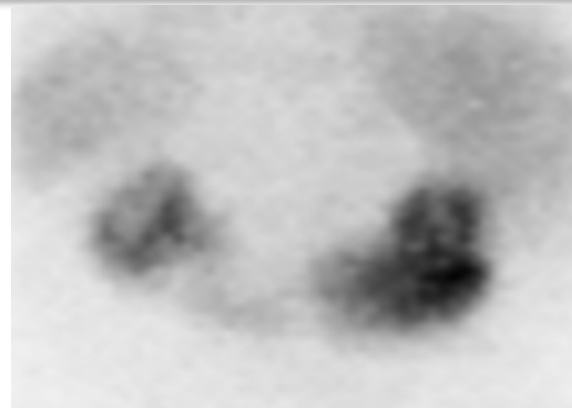
Ga 68 Dotatate PET/CT



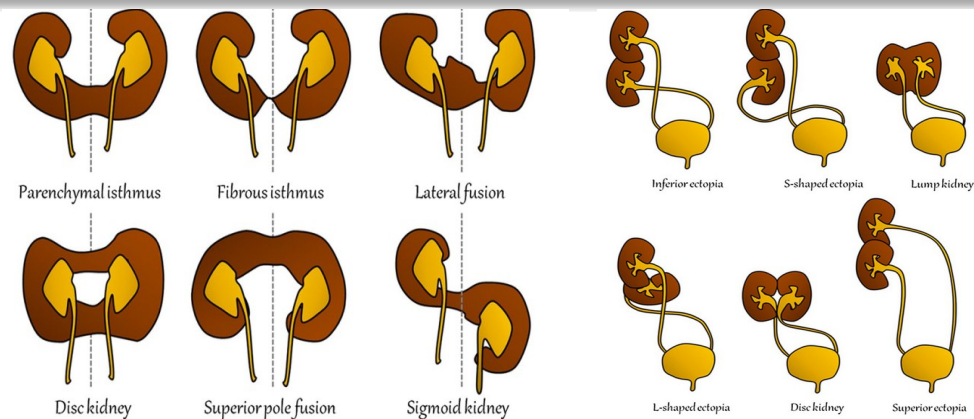
F-18 FDG PET/CT



Tc99m DMSA scan



MORPHOLOGICAL TYPES OF RENAL FUSION ANOMALIES



SOURCE / REFERENCE

Kubihal V, Razik A, Sharma S, Das CJ. Unveiling the confusion in renal fusion anomalies: role of imaging. *Abdominal Radiology*. 2021;46:4254–4265. doi:10.1007/s00261-021-03072-1
Morphological illustrations adapted from the source article.

RESULTS

The selected cases demonstrate horseshoe kidneys across bone scintigraphy/SPECT, 99mTc-DTPA renography, Ga-68 DOTATATE PET/CT, post Lu-177 DOTATATE whole-body imaging, FDG PET/CT and 99mTc-DMSA renal cortical scintigraphy.

CONCLUSION

Horseshoe kidney may be encountered incidentally during nuclear medicine studies performed for oncologic indications. Familiarity with its characteristic scintigraphic appearance is essential to distinguish this normal anatomical variant from pathological tracer uptake. The cases illustrate the spectrum of appearances across nuclear medicine modalities.