West of Scotland Cancer Network

Urological Cancers Managed Clinical Network



# Solid Renal Lesions Identified on Ultrasound Guideline

Prepared by	G Lamb, N Arestis
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#### Solid Renal Lesions Identified on Ultrasound Guideline

The members of the West of Scotland Cancer Network for Urological Cancers felt there was a need to develop a Clinical Guidance Document to ensure equity of care across the West of Scotland (WoS) where renal lesions are noted on Ultrasound.

A review of the evidence commenced in February 2018, led by Mr Gavin Lamb and Dr Nik Arestis, of NHS Forth Valley. Representatives from Urology and Radiology from each of the NHS Boards in the WoS were invited to a number of meetings to develop the attached guideline.

The guideline was reviewed and updated with no significant changes in January 2022 with intervening evidence supporting the guideline (Hussain et al 2020).

The guideline was further reviewed in January 2025 with a literature search indicating no updates were required. The Scottish National Bosniak 2F Follow Up Protocol, included in page 5, was updated to align with the format within the Clinical Management Guideline for non-metastatic renal cancer, Version 4.0 published September 2024.

The aim of this guideline is to confidently diagnose small solid renal lesions discovered incidentally by Ultrasound. The majority will be solitary classic fat rich AMLs which do not require further assessment. Echogenic lesions like this are common (0.3 - 2.1%).

The MCN wish to minimise patient anxiety from unnecessary monitoring of lesions with negligible threat. The MCN also wish to reduce costs in terms of resource and time. The group agreed that a minimum number of patients should enter a surveillance program. In doing so we aim to minimise the impact on imaging departments in Scotland. Those with equivocal or sinister imaging features should have further assessment expedited via a clear pathway.

The guideline has been drawn up with the understanding that in very rare circumstances a lesion < 1cm could be misdiagnosed on ultrasound; however the incidence of this would be at a rate less than 1%: less than the population harm of increased imaging from ionising radiation. To reduce the radiation burden on younger patients, an age of <45 was chosen as an arbitrary cut off for favouring MRI rather than CT as the primary imaging modality.

The guideline should result in reduced CT and MRI utilisation in lesions identified at less than 1cm which represent the majority of those found incidentally on ultrasound. It will also result in a reduced utilisation of USS in surveillance of lesions measured between1-2cm. Both processes will reduce the clinical follow up requirements of both categories of patient.

These regional guidelines are recommended by the Urological Cancers MCN whose members also recognise that specific needs of individual patients may require to be met by an alternative approach and that this will be provided where necessary and documented in the patient notes.

Where possible the authors have used published evidence to support the decision making process of the pathway. A number of key observations from the literature have been used in the creation of the management pathway:

- Hyperechoity on its own is not specific for AML; indeed there is increased chance of hyperechoity in smaller RCC.
- It is often difficult to accurately characterise lesions smaller than 1 cm. Equivocal lesions less than 1 cm are better assessed by chemical shift MRI (CS MRI).

## **Incidental Solid Renal Lesion Pathway**

#### Does not apply if Haematuria, cystic lesions, known cancer, Tuberous sclerosis



Final – Published Urological Cancers MCN Solid Renal Lesions Identified on Ultrasound v1.1

## **AML Follow-up Pathway**



US follow-up for size progression

## Proposed Scottish National Bosniak 2F Follow Up Protocol #

<sup>#</sup>Protocol agreed in 2015 at the joint meeting of Scottish Urology Society and the Scottish Radiology Society. Findings from a seven year audit reported to the WoSCAN MCN Advisory Board in 2022.

Outcome supports protocol to detect progression at incidence consistent with previous literature and at safe interval to facilitate treatment.

All complex cysts to have baseline triple phase CT and Bosniak Classification confirmed at formal MDT / Radiology Meeting	
Baseline CT (Triple phase)	
6/12 CT (Single portovenous)	
18/12 CT (Single nephrographic)	
30/12 CT (single nephrographic)	
48/12 CT (Single nephrographic)	
At 48 months consider discharge	
*Qualified Intervals are in months from baseline CT	

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## Abbreviations

US - Ultrasound CT ACAP - Computerised Tomogram Arterial phase Chest and upper abdomen, venous phase Abdomen and pelvis CS MRI - Chemical Shift Magnetic Resonance Imaging RCC – Renal Cell Carcinoma AML - Angiomyolipoma

### Information for Sonographic staff

Lesions suitable for discharge as per renal lesion pathway (Likely small AML) should have these features:

- Uniform (homogenous)
- Hyperechoic or iso-echoic to renal sinus fat
- <10mm

If >10mm, follow pathway

If not conforming to above features refer to pathway.