



Table 1A. Features to consider:

- 1. Size
- 2. Attenuation value
- 3. Homogeneity versus heterogeneity
- 4. Enhancement
- 5. Complexity of cystic mass (Bosniak classification)
- 6. Growth and morphologic change
- 7. Role of biopsy

Table 1. Features that indicate heterogeneity in a renal mass

Feature
Wall thickening
One or more septa
Mural nodule(s)
Measurable or visible attenuation differences
Calcification

Legend

CTR = Critical Test Result  
F/U = Follow-up  
HU = Housefield Unit  
TSTC = Too small to characterize

Table 2. Bosniak renal cyst classification system

Bosniak Classification	Description
I	Benign simple cyst with a hairline thin wall without septa, calcification, or solid component. Homogeneous near-water attenuation density (–10 to 20 HU) without enhancement.
II	Benign minimally complicated cyst that may contain a few hairline thin septa that may have “perceived” but not measurable enhancement. Fine calcification or a segment of slightly thickened calcification may be present in the wall or septa. Also, a well-marginated nonenhancing homogeneous mass < 3 cm with density above simple fluid attenuation (hyperdense cyst).
IIF	Usually benign complicated renal cyst with multiple hairline thin septa or minimal smooth thickening of the wall or septa. Wall or septa may contain thick and nodular calcification and may have “perceived” but not measurable enhancement. Also, a well-marginated intrarenal nonenhancing mass > 3 cm with density above simple fluid.
III	Indeterminate complicated cystic renal mass with thickened irregular walls or septa that have measurable enhancement.
IV	Malignant cystic renal mass with enhancing soft tissue components (cystic renal cell carcinoma).

Table 3. CT and MRI criteria for defining enhancement in a renal mass

CT Criteria: Increase in Attenuation After Contrast	
≥20 HU	Definite for enhancement
>10 to < 20 HU	Equivocal for enhancement; consider factors related to beam hardening, intra-renal location*
≤10 HU	No enhancement
MRI criteria for enhancement	
≥15% increase in signal intensity after contrast	Enhancing lesion
Alternative method	Visible signal intensity on subtraction images

HU = Hounsfield units.

\*Stricter criteria (15 HU) should be used as a cutoff for enhancement of exophytic or larger lesions not prone to these factors.

<sup>1</sup> Tables 1,2,3 - Management of the Incidental Renal Mass on CT: A White Paper of the ACR Incidental Findings Committee; Journal of the American College of Radiology 2018.