

**TABLE 3**  
**Bosniak's Classification of Cystic Renal Masses**

Class I	Simple benign cysts. These lesions are round or oval in shape, are unilocular with the uniform density of water, have no perceptible wall and exhibit no enhancement on radiographs taken after the administration of contrast medium.
Class II	Probable benign simple cystic lesions that are minimally complicated. These lesions include septated cysts, minimally calcified cysts, infected cysts and high-density cysts.
Class III	More complicated cystic lesions. These lesions exhibit some findings seen in malignancy, such as thick, irregular calcifications, irregular borders, multilocular form, thickened or enhancing septa, uniform wall thickening or small nonenhancing nodules.
Class IV	Clearly malignant cystic masses. The appearance of these lesions results from necrosis and liquefaction of a solid tumor or a tumor growing in the wall. These lesions are heterogeneous, with a shaggy appearance, thickened walls or enhancing nodules.

Adapted with permission from Wolf JS. Evaluation and management of solid and cystic renal masses. *J Urol* 1998;159:1120-33.

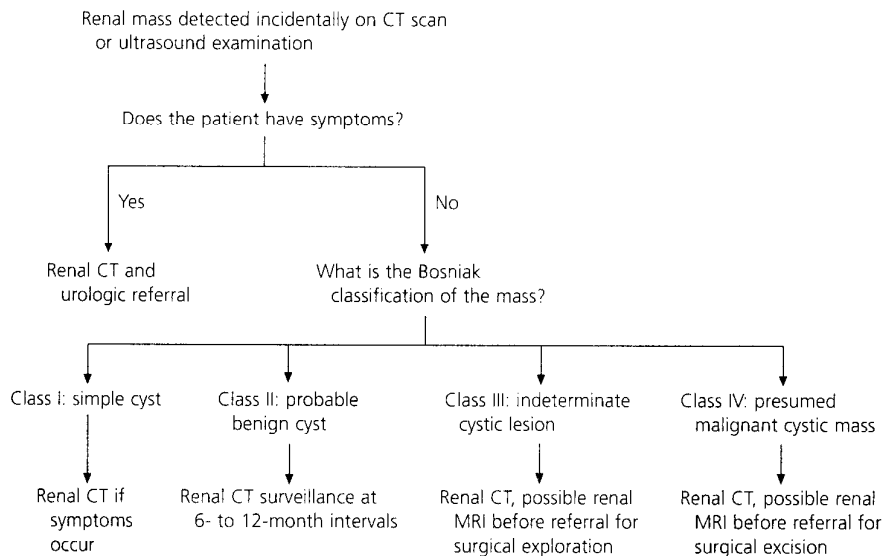
images are especially helpful in providing additional characterization of a lesion.

**DIFFERENTIATING BENIGN FROM MALIGNANT LESIONS**

In 1986, Bosniak<sup>8</sup> created a four-part classification of cystic renal masses found on CT scans. The system uses Hounsfield units to categorize these lesions in order of increasing probability of malignancy (*Table 3*).<sup>9</sup>

Class I lesions are simple benign cysts that require no further evaluation unless signs or symptoms develop. Class II lesions are also benign. These cysts, which are minimally complicated by previous infection or hemorrhage, can be followed radiographically. Class III lesions are "indeterminate" and have a malignancy rate of 50 percent<sup>9</sup>; hence, surgical exploration of these lesions is warranted in otherwise healthy patients. Class IV cystic lesions and solid renal masses that enhance with contrast medium are presumed to be malignant.

**Incidental Renal Mass**



**FIGURE 1.** Management of incidental renal mass. (CT = computed tomographic scanning; MRI = magnetic resonance imaging)