With imaging, most incidental renal masses can be diagnosed promptly and with confidence as being either benign or malignant. For those that cannot, management recommendations can be devised on the basis of a thorough evaluation of imaging features. However, most renal masses are either too small to characterize completely or are detected initially in imaging examinations that are not designed for full evaluation of them. These masses constitute a group of masses that are considered incompletely characterized. On the basis of current published guidelines, many masses warrant additional imaging. However, while the diagnosis of renal cancer at a curable stage remains the first priority, there is the additional need to reduce unnecessary healthcare costs and radiation exposure. As such, emerging data now support foregoing additional imaging for many incompletely characterized renal masses. These data include the low risk of progression to metastases or death for small renal masses that have undergone active surveillance (including biopsy-proven cancers) and a better understanding of how specific imaging features can be used to diagnose their origins. These developments support (a) avoidance of imaging entirely for those incompletely characterized renal masses that are highly likely to be benign cysts and (b) delay of further imaging of small solid masses in selected patients. Although more evidence-based data are needed and comprehensive management algorithms have yet to be defined, these recommendations are medically appropriate and practical, while limiting the imaging of many incompletely characterized incidental renal masses.