

Evidence Discussion Renal Cell Cancer (ONC-17)

Initial Staging

American Urological Association (AUA) and the National Comprehensive Cancer Network (NCCN) guidelines state that to evaluate a solid or complex cystic renal mass, clinicians should obtain multiphase, cross sectional abdominal imaging. Contrast-enhanced abdominal imaging best characterizes the mass, provides information regarding both the affected and unaffected renal unit, can assess extra-renal tumor spread (venous invasion or regional lymph nodes), and evaluates the adrenal glands and other abdominal organs for visceral metastasis.

Masses initially diagnosed by ultrasound should be confirmed with pre- and post-contrast enhanced imaging.

In patients with renal cell carcinoma (RCC) or suspicion of RCC, complete staging is typically completed with chest radiography (CXR) or chest CT. Chest CT scan should be obtained selectively, in patients with pulmonary symptoms or abnormal CXR, or for patients with high-risk disease (5,6). Bone scans should be reserved primarily for patients with bone pain or elevated alkaline phosphatase, as the prevalence of osseous metastasis for localized renal cell cancer has been shown to be low in patients without symptoms or laboratory abnormalities suggestive of osseous metastasis (16,17). Brain imaging is reserved for patients with neurologic symptoms, as most patients with metastasis to the central nervous system are symptomatic (8-10).

Restaging/Recurrence

Patients presenting with findings suggesting a new renal primary or local recurrence of renal malignancy, should undergo metastatic evaluation including chest and abdominal imaging (11-12). The most common sites of distant metastasis include lung, bone, retroperitoneal and mediastinal nodes, liver, brain, or multiple sites (22-23)

Surveillance

Active surveillance Stage T1a

Active surveillance entails serial abdominal imaging in order to study the growth rate of the tumor and it is recommended that abdominal imaging (CT or MRI with contrast) within 6 months from initiation of active surveillance; subsequent imaging (with CT, MRI, or ultrasound [US]) may be performed annually thereafter. CT and MRI have both been found to accurately predict pathologic tumor size in a retrospective analysis.(14) Therefore, best clinical judgment should be used in choosing the imaging modality. A chest x-ray or chest CT at baseline and annually as clinically indicated to assess for

pulmonary metastases. Given that the risk of metastasis is highly correlated with size of tumor, it is unlikely that a patient with T1a RCC will present with pulmonary metastasis (18-20). Chest CT is highly sensitive for pulmonary nodules (21), and the presence of sub-centimeter nodules in patients with T1a disease is likely to be a false-positive and can lead to further unnecessary and potentially invasive investigations. Chest imaging can be considered if intervention is being contemplated due to progression of disease

Follow up after ablative therapy for Stage T1a

An abdominal imaging either CT or MRI with and without IV contrast (unless otherwise contraindicated) at 1 through 6 months to assess treatment response, followed by annual abdominal CT or MRI (preferred) for 5 years or longer as clinically indicated. If the patient cannot receive IV contrast, MRI is preferred

Follow up after partial or radical nephrectomy for Stages 1-2

Stage I RCC, it is recommended that abdominal CT or MRI (preferred) within 3 to 12 months following renal surgery, then annually for up to 5 years or longer as clinically indicated. For patients with stage II RCC, it is recommended to increase in abdominal imaging frequency, with baseline abdominal CT or MRI (preferred) every 6 months for 2 years, then annually for up to 5 years or longer, as clinically indicated.

It is also recommended that yearly chest x-ray or CT for at least 5 years and as clinically indicated thereafter.

Follow up for patients with Stage 3 RCC

It is recommended to obtain a baseline abdominal CT or MRI within 3 to 6 months following surgery, followed by CT, MRI (preferred), or US every 3 to 6 months for at least 3 years, and annually thereafter for up to 5 years.

A baseline chest CT within 3 to 6 months following surgery, is also recommended as well as continued imaging (CT preferred) every 3 to 6 months for at least 3 years, and annually thereafter for up to 5 years.

CT is the preferred modality for those with a high risk of recurrence.

Follow up for patient with relapse or unresectable disease or Stage 4 RCC

It is recommended to obtain chest, abdominal and pelvic imaging at baseline and then as clinically indicated based on clinical status, and therapeutic schedule.

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