

Evidence Discussion (ONC 20)

Testicular cancer

Initial Evaluation

- American Urological Association guideline recommends scrotal ultrasound with Doppler should be obtained in patients with a unilateral or bilateral scrotal mass suspicious for neoplasm and that magnetic resonance imaging (MRI) should not be used in the initial evaluation and diagnosis of a testicular lesion suspected of being a neoplasm
- Ultrasound requires no ionizing radiation and is readily available. Overall ultrasound is relatively quick and non-invasive modality to evaluate a testicular lesion. There are relatively few disadvantages of ultrasound for testicular lesions and primarily relate to sonographer experience
- As advanced imaging modalities, computer tomography (CT) and magnetic resonance imaging (MRI) offer excellent 3-dimensional resolution. CT scan can require a significant dose of ionizing radiation but the speed of image acquisition reduces the potential for motion artifact. MRI yields better soft contrast resolution than CT and does not expose individuals to ionizing radiation, but due to longer image time is motion artifact-prone and may require sedation.

Seminoma:

- NCCN recommends CT of the abdomen and pelvis with contrast or MRI of the abdomen and pelvis with and without contrast, and a chest x-ray. Chest CT with contrast is recommended if there is a positive finding on abdomen CT or abnormal chest x-ray.

Nonseminoma:

- NCCN recommends CT of the abdomen, pelvis and chest with contrast or MRI of the abdomen and pelvis with and without contrast in addition to a chest CT with contrast.

Surveillance of pure seminoma

- Chest radiography is sufficient when compared with CT for follow-up of stage 1 pure seminoma (3-6) and is recommended by NCCN. While CT is more sensitive than radiography for detecting recurrent disease in the chest (3,7), this added sensitivity is offset by lower specificity and a higher false positive detection rate for abnormalities that are not metastatic(8).
- Scrotal US does not have a role in the restaging of men with testicular cancer that has been established by orchiectomy, unless there is concern for contralateral tumor or equivocal clinical exam (1)

- CT abdomen and pelvis is the reference standard imaging test used for assessing the retroperitoneum. It is rapid, reproducible, and provides excellent imaging of the para-aortic and paracaval regions (9-11), but does expose patients to significant ionizing radiation.
- MRI of the abdomen and pelvis
 - MRI has comparable accuracy with CT for the detection of metastatic retroperitoneal lymph nodes and has the benefit of no ionizing radiation. The disadvantage of MRI is longer imaging time which can lead to motion artifact (12).

Surveillance of non seminoma

- CT of the abdomen and pelvis is the standard imaging test used for assessing the retroperitoneum for nodal metastasis, but does expose the patient to high levels of ionizing radiation.
- The 2023 NCCN guidelines recommend chest radiography for the surveillance of stage 1 nonseminomatous testicular cancer but chest CT with contrast is preferred in the presence of thoracic symptoms.
- MRI of the abdomen and pelvis shows comparable accuracy with CT in the detection of metastatic retroperitoneal lymph nodes and does not have high levels of ionizing radiation but is subject to motion artifact due to longer imaging time.
- Scrotal US does not have a role in the restaging of men with testicular cancer that has been established by orchiectomy, unless there is concern for contralateral tumor or equivocal clinical exam (1)

References

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