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April 1, 2025

NCCN Guidelines Panel: Bone Cancer:

On behalf of The Society of Interventional Oncology, we respectfully request the NCCN Bone Cancer Guideline Panel review the enclosed data for the following changes to be made to the NCCN Guidelines for Bone Cancer:

Specific Change 1:

Include a *Principles of Image-Guided Tumor Ablation* section, similar to existing sections for Radiation Therapy (BONE-C) and Pathology (BONE-D).

Rationale: Thermal ablation is provided as a treatment option for several clinical contexts within the Bone Cancer Guidelines. However, the term ‘ablation’ encompasses a wide variety of practices and treatment modalities. Lack of clarity on what ‘ablation’ refers to can lead to inconsistencies in care delivery. The proposed text for the Principles of Image-Guided Tumor Ablation provides evidence-based (see References for new publications beyond those included in the Guidelines already) recommendations for patient selection and ablation modality.

Principles of Image-Guided Tumor Ablation

- Overview of image-guided thermal ablation
 - Thermal ablation creates tumor cell death through deposition of tumoricidal heat (radiofrequency or microwave) or cold (cryoablation) in the tumor and surrounding margins.
 - Non-thermal ablation such as irreversible electroporation creates tumor cell death through electrical pulses that create irreversible membrane pores and cellular lysis/destruction.
- Liver Tumor Ablation

- Image guided thermal ablation may be considered in selected surgical candidates or medically non-surgical candidates with small tumors that can be completely ablated with margins.¹
- Image guided thermal ablation can be considered in selected patients with recurrence after hepatectomy or ablation as long as all visible disease can be ablated with margins.
- Image guided non-thermal ablation (irreversible electroporation) can be considered in patients that cannot be safely resected or ablated with thermal ablation due to proximity to central bile ducts or other structures that cannot be protected.
- Other forms of ablation (high frequency ultrasound, histotripsy) may be considered in the setting of a clinical trial and should not be used indiscriminately in patients who are potentially surgically resectable or can be percutaneously ablated with margins.
- Lung Tumor Ablation
 - Image guided thermal ablation may be considered in selected surgical candidates or medically non-surgical candidates with small tumors that can be completely ablated with margins.²
 - Image guided non-thermal ablation (irreversible electroporation) can be considered in patients that cannot be safely resected or ablated with thermal ablation due to proximity to central airways or other structures that cannot be protected.
- Soft Tissue/Bone Ablation
 - Image guided thermal ablation may be considered in selected surgical candidates or medically non-surgical candidates with small tumors that can be completely ablated with margins.²
 - Image guided non-thermal ablation (irreversible electroporation) can be considered in patients that cannot be safely resected or ablated with thermal ablation due to proximity to central airways or other structures that cannot be protected.
 - Other forms of ablation (high frequency ultrasound, histotripsy) may be considered in the setting of a clinical trial and should not be used indiscriminately in patients who are potentially surgically resectable or can be percutaneously ablated with margins.

References

1. Awad, A. *et al.* Safety and efficacy of percutaneous image-guided ablation for soft tissue sarcoma metastases to the liver. *Cancer* (2024) doi:10.1002/cncr.35330.
2. Pal, K. *et al.* Safety and Efficacy of Percutaneous Cryoablation for Recurrent or Metastatic Soft Tissue Sarcoma in Adult Patients. *AJR Am. J. Roentgenol.* (2024) doi:10.2214/AJR.24.31490.