Commentary: Adjuvant intensity-modulated radiation therapy for malignant pleural mesothelioma: Suspension of intention

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Central Message

Careful patient selection is critical to maximizing the probability that patients with MPM complete all intended treatments of multimodal therapy.

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The most common site of recurrence after cytoreductive surgery for malignant pleural mesothelioma (MPM) is within the ipsilateral, surgically treated hemithorax, highlighting the locally aggressive nature of this tumor and the need for multimodal treatment strategies. In an effort to decrease the risk of local recurrence, multiple studies have assessed the use of adjuvant radiation therapy. Compared with historical controls, the balance of the literature has suggested that adjuvant radiotherapy is beneficial in terms of improving progression-free and overall survival after extrapleural pneumonectomy (EPP)¹ and pleurectomy/decortication (P/D).² To minimize the risk of radiation exposure to healthy surrounding tissue (and the attendant risk of radiation pneumonitis), computed tomography simulation-guided planning using intensity-modulated radiation therapy (IMRT) is a preferred radiation modality for MPM. Multimodal therapy can be difficult for patients to complete. In several studies of trimodality therapy for MPM, only 40% to 50% of patients were able to complete all intended treatments.^{3,4} If the intention of multimodal therapy is to optimize progression-free and overall survival, then failure to complete a planned regimen may be a detriment to achieving these objectives. Therefore, it is important to understand barriers to delivering all intended treatments.

In this issue of the *Journal*, Nelson and colleagues⁵ conducted a single institution review of 160 patients with MPM who were treated with a trimodality strategy (neoadjuvant platinum/pemetrexed chemotherapy, P/D or EPP, and adjuvant IMRT) over a 13-year period with the primary aim of identifying risk factors for failing to complete adjuvant IMRT.⁵ They found that patient comorbid conditions (defined by an American Society of Anesthesiologists score of 3+ and smoking history) were independent predictors of inability to complete IMRT. These results are not surprising. Patients with severe systemic disease have less reserve

to tolerate the rigors of an aggressive multimodal treatment plan that includes EPP or P/D. Although it is often assumed that P/D is a less demanding operation in terms of a patient's recovery, the type of resection did not predict receipt of IMRT. Unfortunately, American Society of Anesthesiologists score or number of pack-years of tobacco use are usually nonmodifiable risks by the time patients present with MPM. Therefore, this study highlights that careful patient selection is critical to maximizing the probability that all planned treatments are completed. Although unknown, perhaps optimizing medical management of systemic diseases, use of physical and respiratory rehabilitation, and improved nutrition could improve rates of IMRT completion among borderline surgical candidates.

The importance of perioperative complications as a barrier to completing a treatment plan is also highlighted in this study. Patients who had cardiopulmonary complications were half as likely to complete IMRT as patients who did not. Proactive postoperative care is essential to mitigate the risk of complications, minimize their impact when they arise, and potentially maximize the probability of patients completing their intended treatment plan.

As operationalization of healthcare quality becomes increasingly important, understanding barriers to delivering quality care becomes critical for our patients.

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