To Seed or Not to Seed
The Open Question of Mesothelioma Intervention Tract Metastases

To the Editor:

Catheter tract seeding is a common complication of diagnostic and therapeutic procedures for mesothelioma pleural effusion; however, there are few reports about catheter tract metastasis (CTM) complicating indwelling pleural catheter (IPC) insertion. The largest series to date is a pooled systematic review of 10 studies involving 1,093 patients, with evidence of catheter tract seeding in nine patients (0.8%). In our study, we found no cases of CTM in 13 of 90 patients with mesothelioma pleural effusions treated with IPC placement. Nevertheless, the currently available literature is limited by a lack of information about histologic subtype, disease stage, and treatment or diagnostic procedure.

In this issue of CHEST (see page 557), Thomas et al reported that IPCs were positioned predominantly for mesothelioma-related pleural effusion (60%) and that 10% of patients subsequently developed CTM (nine patients with mesothelioma of the 11 with IPC tract seeding). The patients with CTM were referred for radiotherapy; six completed therapy, but only four had a clinical response.

The benefit of prophylactic tract irradiation in patients with mesothelioma remains controversial. The two randomized clinical trials had small sample sizes with inadequate statistical power. Large-scale prospective studies are virtually impossible to perform because of the relatively low incidence of mesothelioma. On the basis of the existing trials, prophylactic irradiation of the intervention tract is not currently justified. Prophylactic irradiation of the intervention tract has not been tested so far in patients with IPC, however.

In brief, a well-known characteristic of mesothelioma is tract metastasis after thoracentesis or thoracoscopy, and evidence for the possible benefit of prophylactic radiotherapy is lacking. Therefore, prophylactic irradiation of the intervention site will need to be tested to determine whether it can reduce or prevent tract colonization in patients with an IPC.

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References

Response
To the Editor:

The global incidence of mesothelioma is rising, and >90% of patients will suffer from a malignant pleural effusion (MPE). Indwelling pleural catheters (IPCs) are increasingly used to manage MPEs. In our series of 110 IPC insertions for malignant effusion drainage, the overall incidence of catheter tract metastases (CTMs) was 10%. Specifically, CTM complicated nine of the 66 IPCs (13.6%) placed in mesothelioma patients. We thank Dr Bertolaccini and colleagues for pointing out that this is the largest series of CTMs in patients with IPCs.
Dr Bertolaccini and colleagues also raised the role of prophylactic radiotherapy for patients with IPCs. We have reservations about recommending this practice. First, an IPC presents a constant risk of subcutaneous deposit of tumor cells. The data from our study show that CTM often develops late (median, 281 days; range, 58-694 days) after IPC insertion; therefore, CTM is less likely to be related to the initial insertion or to be protected by prophylactic radiotherapy postinsertion.

Second, the usefulness of prophylactic radiotherapy has yet to be confirmed. Of the three randomized trials published, two have shown no benefits from routine administration of prophylactic radiotherapy postpleural procedures. A multicenter randomized study, the Surgical and Large Bore Pleural Procedures in Malignant Pleural Mesothelioma and Radiotherapy Trial, is recruiting patients who have pleural interventions (including IPC insertion) to further examine the benefits of prophylactic radiotherapy.

Third, even if prophylactic radiotherapy is effective for patients with IPCs, the low incidence of CTM argues against subjecting all patients to treatment and its associated cost and morbidity. No predictors exist to identify patients at high risk of developing CTM. In our series, the survival interval after IPC insertion was the sole significant independent risk factor for development of CTM (multivariate OR, 2.495; 95% CI, 1.247-4.993; P = .0098). However, predicting survival in individual patients with mesothelioma is notoriously challenging.

Fourth, radiotherapy to the CTM after its development remains a reasonably effective treatment. None of the six patients in our study had any adverse events. Importantly, IPC does not need to be removed during the radiotherapy course.

Finally, as more effective chemotherapy becomes available, the rate of CTM is likely to decrease. Routine prophylactic radiotherapy after IPC insertion should not be recommended based on the available evidence and the points raised here.

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References