Occlusion and Malposition of Small-Bore Chest Tubes for Pleural Infection

To the Editor:

We read with great interest the recent study by Rahman et al (March 2010),¹ which suggests that smaller tubes are as effective for the treatment of pleural infection as larger-bore tubes, while causing less pain. However, no mention was made of two complications that smaller tubes may be more prone to: malposition and occlusion.

Although we are not aware of published data, common sense suggests that occlusion of chest tubes used to drain thick fluid, such as pus, may occur more readily with small-bore tubes. Rémiérand et al² showed that chest tube malposition is fairly common (30% in their series), and that avoiding the use of a trocar reduces the risk of malposition. There are, however, no data regarding guidewire insertion.

Despite the fact that tube size was not randomly assigned, we would be very interested to know what the incidence of these complications was in the authors’ series. If they were more frequent with small-bore tubes, that would be an argument against the use of these tubes. Obviously, both this hypothesis and the authors’ conclusion that small-bore tubes yield similar clinical outcomes to large-bore tubes will have to be tested in randomized studies.

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Response

We share the interest and concern of Drs Atchabahian, Laplace, and Tazarourte in the quality of care patients receive with chest tube drainage. We agree that there is a compelling need for randomized trials to accurately define efficacy and safety of different tube sizes and insertion techniques. Until such trials are completed, it is not possible to know with certainty which tube types are in the best interests of patients, and we must rely on nonrandomized data sets. Against this background, our cohort represents the largest comparative study to date and so helps to inform the debate about this important treatment.

Although it seems intuitive that smaller tubes become blocked during the drainage of infected purulent fluid, there is extensive observational (nonrandomized) literature suggesting that this is not the case in practice, particularly with regular flushing.²³ The lack of therapeutic advantage in our large series¹ supports the conclusion that there is no clear disadvantage to smaller bore tubes. Within our study, the rate of malposition or occlusion requiring reinsertion of a second tube is captured within the results and discussed in the article. We continue to believe that our data provide preliminary encouraging evidence that smaller bore tubes may achieve as good a clinical outcome with less pain for patients, and we eagerly anticipate the results of well-designed randomized trials to definitively assess whether this is true.

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