Complications of Removal of Indwelling Pleural Catheters

To the Editor:

We read with interest the article published by Fysh et al¹ in *CHEST* (April 2012) describing a high incidence (10%) of fractured, indwelling, pleural catheters (IPCs) and would like to comment on the much lower incidence of this complication as it is reported in the literature and in our experience with IPCs. Our review of seven publications on the subject, including a systemic review by Van Meter et al² comprising almost 2,000 IPCs, described only one case of a fractured IPC in a patient with mesothelioma and trapped lung.³ In a review of our institutional database, we identified only two fractured catheters out of 1,790 IPCs that we placed since 1998.

While the cause of this significant discrepancy in the rate of catheter fracture between the authors' experience and ours is unclear, we would like to highlight several factors that could contribute to the variance:

1. Placement of the polyester cuff within 1 cm of the tunnel entry site is crucial to facilitate catheter removal. More distant placement of the catheter cuff within the tunnel leads to difficulties in dissecting the fibrous adhesions from the cuff and increases the risk of severing or weakening the catheter.
2. The length of the subcutaneous tract ideally should be kept at 5 cm. Longer subcutaneous tracts may result in catheter fenestrations located outside the pleural cavity, within the chest wall or subcutaneous tissue, permitting tissue ingrowth and impeding removal.
3. Catheter tract metastasis associated with IPC and mesothelioma that may lead to catheter damage or tumor ingrowth in the catheter has been reported.⁴ Fifty percent of patients with fractured catheters in this article had mesothelioma. Even though the number is too small to draw any conclusions, further research may be warranted.
4. Changes in the manufacturing process can cause structural failure of the catheters.

We had an experience related to defective polyester cuffs (PleurX catheter; CareFusion Corp), which caused a high number of IPC complications. Once the company was notified, changes were made, and subsequently we were able to demonstrate a reduction in the complication rates.⁵

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Response

To the Editor:

We thank Dr Grosu and colleagues for their comments on and interest in our study¹ in *CHEST*. We would like to clarify some important points.

1. Fractures occurred in four of 61 attempted removals of catheters (6.6%) from our series of 170 patients in total. The incidence of fracture of the overall cohort was, therefore, 2.4%.
2. The incidence of 2.4% would naturally include a degree of selection bias as only centers with experience in the reported complication were included in these statistics.
3. The key message of our article was not to report the incidence of this complication. Rather, it was to show that when this rare complication does occur there is no need to undertake aggressive methods of retrieving the retained portion. Some of the patients even safely proceeded with chemotherapy with the retained portion of the catheter in situ.

Use of the indwelling pleural catheter continues to grow rapidly. Better understanding of the potential complications and