still subject to conjecture, I contend that Frederic Chopin suffered from long-standing TB, which eventually resulted in his death.

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Use of Nonheparinized Syringes for Collecting Pleural Fluid Samples

To the Editor:

Determinations of pH and lactic acid are becoming part of the standard analyses performed on pleural fluid, with cytology and biochemistry.\textsuperscript{1,2} Recently, Goldstein and colleagues\textsuperscript{3} stressed the usefulness of pH measurements. They also showed that the measurements made on pleural fluid collected at the needle entry into the pleural space or, secondarily, at the end of the procedure from the large syringe used for the collection of pleural fluid yielded similar results for all analyses. They advocated that the second method would lessen manipulations and so the risk of pneumothorax.

They wrote that a heparinized syringe should be used to collect the pleural fluid for pH determination. We do not think the use of a heparinized syringe necessary. We use a common nonheparinized syringe for pH and lactic acid determinations. We have never had an occlusion problem in the automated blood gas analyzers, even with purulent samples. Our experience, based on an average of 250 pH determinations each year, supports this practice. Pleural fluid does not coagulate, except in cases of frank and fresh hemthorax and pyothorax.

The use of nonheparinized syringes does not modify the results. We made a comparative study of pH and lactic acid on nine successive pleural fluids. Pleural fluid was collected during the procedure from the plastic recipient provided for cytological examination in a common nonheparinized syringe and in a heparinized one (Q500; Radiometer; Copenhagen, Denmark). The pH and lactic acid were determined in automated blood gas analyzers (Chiron Diagnostics; Medfield, Mass; and YSI 2; Yellow Springs Instrument Co.; Yellow Springs, Ohio) within 5 min of filling the syringe. Table 1 shows the results for both types of samples.

No statistically significant difference could be seen between the two syringes, including the samples from two patients with empyema. We emphasize that pH and lactic acid measurements can be performed on common nonheparinized syringes. This adds a substantial economy to the procedure. In our country, the price varies from $0.60 to $1.40 for heparinized syringes and is about $0.04 for the common syringe.

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To the Editor:

We thank Drs. Rodenstein and Pieters for their interest in our article. They have shown that the use of a syringe without anticoagulant does not alter the pH value when measured within 5 min of collection. It is not known what percentage of pleural fluid specimens will clot if not measured within 5 min of collection. We know of no prior studies that deal with this issue. Light and colleagues\textsuperscript{4} used heparinized syringes in their initial study of the utility of pleural fluid pH, and Light\textsuperscript{5} has subsequently advocated the routine use of heparinized syringes. We believe the study by Rodenstein and Pieters is useful but needs to

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|c|}
\hline
 & \textbf{pH} & & & \\
 & Common syringe & Heparinized syringe & & \\
\hline
\textbf{Lactic acid, mmol/L} & & & & \\
\hline
7.38 & 4.70 & 3.5 & 3.4 & \\
7.45 & 4.77 & 3.5 & 3.4 & \\
7.41 & 4.76 & 2.3 & 2.4 & \\
7.50 & 4.78 & 1.5 & 1.3 & \\
6.36 & 4.60 & 24.6 & 24.1 & \\
7.43 & 4.74 & 1.2 & 1.4 & \\
7.39 & 4.70 & 2.9 & 3.0 & \\
6.85 & 6.85 & 16.7 & 16.4 & \\
7.46 & 4.74 & 1.3 & 1.4 & \\
\hline
\textbf{Mean} & 7.25 & 7.26 & 6.4 & 6.3 & \\
\textbf{SD} & 0.39 & 0.38 & 8.4 & 8.2 & \\
\hline
\end{tabular}
\caption{Comparative Results From Nine Successive Draws of Pleural Fluid}
\end{table}