Management of malignant pleural effusion

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Talc instillation consensus aids differentiating successful from unsuccessful pleurodesis

A survey on the interpretation of pleural approximation after chest tube placement

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To the editor,

Pleural approximation is the most important predictor for successful pleurodesis. We performed an online survey to investigate variation in pulmonologists' opinions regarding 1) lung expansion, 2) talc instillation and 3) the expected success rate of pleurodesis after conventional pleural fluid drainage. Chest X-rays of patients suffering from malignant pleural effusion (n=50), made after full drainage and used to decide whether or not to instill talc, were reviewed by experienced pulmonologists. All patients had been treated prior to this questionnaire. Pulmonologists from 30 out of 100 hospitals responded. When pulmonologists reported that the lung was expanded, they recommended pleurodesis in 89% of the cases. When they reported the lung not to be expanded, they still advised pleurodesis in 38% of cases. Pulmonologists disagreed more frequently on lung expansion than they did recommending pleurodesis (Figure 1A&B). Agreement was not related to either patient (gender, age, tumor type) or pulmonologist characteristics (age, gender, personal experience or ultrasound usage).

In this patient cohort, which was previously reported as part of a prospective trial on pleurodesis efficacy, talc slurry had been instilled in approximately 75% (38 patients). Sixty-one percent of these patients (intention to treat analysis: 46%) had a successful pleurodesis (as defined by the absence of fluid recurrence, or re-intervention, and survival for > 2 months after talc instillation). In 7 out of 38 patients talc was instilled despite the fact that in this online survey no consensus was reached between pulmonologists about whether to treat these patients or not (i.e. less than 75% agreement). However, in 4 of these patients (57%) the pleurodesis was successful (Figure 1C), and this equals the overall success rate. When 2 pulmonologists independently gave the same assessment, the ability to accurately predict the success of pleurodesis increased from 75% to 81% (p<0.0001).

Thus, the most reliable predictor for the outcome of pleurodesis is prone to heterogeneous interpretation. Our results suggest that talc pleurodesis may be successful in cases of incomplete lung expansion.
FIGURE 1 - Answers on lung expansion, advice for pleurodesis, and comparison with outcome

Survey on interpretation of lung expansion in patients with malignant pleural effusion after complete pleural fluid evacuation:

A - “Do you report this lung to be expanded?”
Percentage of pulmonologists that report a lung to be expanded (white bars).

B - “Would you perform pleurodesis?”
Furthermore, more often agreement was reached (ie either yes or no was answered by at least 75% of the pulmonologists). More positive answers (white bars) were given for pleurodesis advice.

C - Advice for pleurodesis compared with the real outcome
Thirty-eight pleurodeses had been performed, of which 23 were considered to be successful (white bars) and 15 were considered to be failures (black bars). In 31 patients consensus (ie less than 25% or greater than 75% of doctors recommending pleurodesis) about treatment was reached to either instil talc or to remove the drain. There was no agreement for treatment of 7 patients (between dotted lines).