

Echocardiography-based Pleural Ultrasound for The Eeduction of Unnecessary Pleural Interventions in Post Cardiac Surgery Patients

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Purpose

Pleural effusion is a common post cardiac surgery complication, the evaluation of which using physical examination and chest x-rays is frequently misleading. Since ultrasonography (US) has been established as valuable in such cases, we attempted to use the in-ward echocardiography system to evaluate the pleural space in selected patients.

Methods

GE Medical, Vivid 3 echocardiography system with a 3S probe (1.5–3.6 MHz) was used (shares technical specifications similar to the routine US system) for the study.

From March to September 2009, all post cardiac surgery patients planned to undergo thoracentesis or drainage according to clinical findings and chest x-rays were included in the study.

Based on the pleural-echo examination, a decision was taken whether to perform US-guided thoracentesis or drainage, or whether follow up would be sufficient.

Patients were followed six weeks later in our outpatient clinic.

Results

Of 323 patients who underwent open heart surgery, pleural intervention was considered according to routine indications in 70 (22%) patients.

A total of 98 US examinations were performed on these patients, followed by 35 thoracenteses and 13 drainage procedures, all US-guided.

Fifty examinations led to repeated follow-up only. The calculated intervention rate was 49%. At the outpatient follow up, 11 of 26 (42%) patients treated with thoracentesis and 1 of 12 (8%) patients treated with pleural drainage had recurrent pleural effusion.

Of the 32 patients who had no intervention, one (3%) had significant effusion.

Conclusions

The use of routine US decreased the intervention rate by 51%.

Only one patient who had no intervention performed suffered from effusion at the postoperative visit, emphasizing the accuracy of the technique.

The use of the echocardiography system as "*echopleurography*" has changed and improved our decision-making and precision in treating postoperative pleural effusion.