

Watchful waiting safe strategy for uncomplicated pneumothorax

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By Gene Emery

NEW YORK (Reuters Health) - In a trial that offers new evidence for doing less when patients have a collapsed lung, watchful waiting is no less effective for uncomplicated cases of primary spontaneous pneumothorax than surgery to remove air from the chest cavity, at least in patients through age 50.

In the randomized non-inferiority study, including 316 patients, 98.5% in the intervention group had a full lung expansion within 72 hours versus 94.4% where an intervention was not done (P=0.02 for non-inferiority).

When patients with incomplete data were classified as a treatment failure, the full reexpansion rates were 82.5% without, which the researchers characterized as "modest, but statistically fragile evidence" that was not inferior.

However, patients in the conservative-management group were less likely to suffer a serious adverse event. Pneumothorax recurrence was 16.8% with intervention and 8.8% in the conservative-management group.

"On the basis of this randomized trial and the earlier reports, we should now be prepared to offer this conservative approach to a young, healthy person with a large primary spontaneous pneumothorax if there is no hemodynamic compromise, the patient is informed and agrees to the approach, is readily available for outpatient follow-up, and does not scuba dive," writes Dr. Courtney Broaddus of the University of California, San Francisco, in an editorial in *Medical* *Journal*, where the study appears.

"This is simple bedside research that answers an important question," chief author Dr. Simon Geoffrey A. Brown of the Royal Melbourne Hospital in Australia told Reuters Health by phone.

Pneumothorax care has been trending in this direction for decades, said Dr. Rade Vukmir, a spokesman for the American College of Emergency Physicians, who was not involved in the research.

The so-called PSP study, combined with earlier research that offered similar findings, shows "this is a very common condition for families and providers who want to take a conservative approach," he told Reuters Health by phone.

About one in 7,000 adults and adolescents will develop spontaneous pneumothorax each year, and in a third of cases, there is no obvious cause or history. Treating with a chest tube or surgery carries risk.

The study was undertaken because one member of the research team was treating his pneumothorax with a conservative approach. His colleagues disagreed.

The result is what's being billed as the first randomized study to compare the techniques, done at 39 Australian tertiary-level healthcare settings.

All the volunteers had a collapse of 32% or more. "The majority of patients had a complete collapse," said Dr. Brown, of Aeromedical and Retrieval Medicine, Ambulance Tasmania.

Half were drained without suction and a chest X-ray was taken an hour later. If the lung had re-expanded, the drain was closed. If it longer bubbled, the drain was closed.

The patient was sent home four hours later if another X-ray showed pneumothorax had not recurred and the patient was comfortable. Otherwise they were admitted.

The remaining patients were observed for at least four hours, at which point another chest X-ray was taken.

"You're watching very carefully for any changes," Dr. Brown said.

If the patients could walk comfortably, did not need supplementary oxygen, and showed no warning signs, they were discharged with instructions and analgesia.

All were assessed within 72 hours, at two, four and eight weeks, and at six and 12 months.

Based on X-ray results, patients in the intervention group got better faster, with a median of 16 days to reexpand the lung compared to 23.0 days with conservative management. But there was no significant difference in time to symptom resolution between the intervention group and 14.0 days in the conservative-management group.

And not only were recurrences nearly twice as common in the intervention group, median time to recurrence was 166 days in the intervention group and 234 days in the group treated conservatively, said Dr. Brown.

Dr. Broaddus, in her editorial, observes, "One possible explanation (for the fewer recurrences) is that chest tubes promote healing by pulling open the defect in the lung, whereas allowing the lung to reexpand slowly on its own allows it to heal more naturally."

There were 49 adverse events in 41 patients (27%) in the intervention group versus 16 events among 13 patients in the watchful-waiting group, a significant difference.

The serious adverse events were usually related to the chest tube. In the intervention group, the odds of serious adverse events were 1.5 times higher.

The mean length of hospital stay was almost five days longer with intervention, and the number of days in the intensive care unit was longer. Patients reported less satisfaction with the interventional approach than the conservative approach.

"Conservative management spared 85% of the patients from an invasive intervention and resulted in fewer recurrences, less likelihood of prolonged chest-tube drainage, less need for surgery, and fewer adverse events and serious complications compared with interventional management. The percentage of patients with early pneumothorax recurrence was also lower in the conservative management group," the researchers write.

The study was done in younger patients because there was less likely to be underlying disease that would affect the findings may apply to older patients whose collapse is idiopathic, said Dr. Brown.

Dr. Brown said he suspects his colleagues will embrace the new findings because they're more than happy to watchful-waiting. New findings give them a justification to take the watchful-waiting approach.

Dr. Vukmir, who is also a professor of clinical emergency medicine at Drexel University, in Philadelphia, said, "It's a doctor who deals with this problem day to day . . . they already have this comfort level."

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