Chest Radiography and Catheterization

To the Editor:

In the study "Is Chest Radiography Necessary After Uncomplicated Insertion of a Triple Lumen Catheter in the Right Internal Jugular Vein, Using the Anterior Approach?" (January 2005), Lessnau cites a line misplacement rate of 2%, which was associated with a difficult catheter insertion procedure. All complications were due to misplaced sites, with no episodes of pneumothorax in evidence. In conclusion, it was suggested in the study that, following uncomplicated right internal jugular vein line insertion, routine postinsertion chest radiography is unnecessary and leads to unnecessary expense and a delay in the start of adequate patient care, especially with regard to early goal-directed therapy.

The study itself and the adjoining editorial both cite a lack of patient numbers to be able to fully bear out this finding. We would like to submit evidence further supporting this view. A prospective audit including 87 consecutive adult patients who had undergone elective cardiac surgery was performed. All patients received a triple-lumen catheter; in 93% of cases, the catheter was inserted in a right internal jugular vein. All catheter insertions were undertaken using the anterior approach without resorting to ultrasound guidance, and the catheter position was confirmed via blood flow, the easy flushing of all lumens, and the appropriate pressure waveform. The insertion of all lines was uncomplicated, they were sited either by a consultant or a specialist registrar, and follow-up chest radiographs were examined using the Patient Archive and Communication System. Following triple-lumen catheter insertion, 4.5% of patients were found to have a malpositioned central line, but this was of no clinical significance. Among those 81 patients who had undergone right internal jugular vein line insertion, 3 had the distal tip positioned in the right subclavian vein (3.7%). In these cases, deformity of the guidewire on its withdrawal was observed, and therefore incorrect positioning could have been predicted. Similar to the study by Lessnau, no episodes of pneumothorax were found.

While the Patient Archive and Communication System reduces the cost of chest radiography, after triple-lumen catheter insertion most patients undergo portable chest radiography, which together with the time for radiograph interpretation brings the cost per patient to between £25 and £50 (Anthony Leese; personal communication; March 7, 2005). In addition, the time from the completion of line insertion to the adequate examination of the chest radiograph may be unacceptably long. The study by Lessnau together with our findings suggest that there need be no delay in the start of therapy while the patient waits to undergo chest radiography for right internal jugular central line placement, provided that the insertion of the line is uncomplicated, there is easy retrieval of blood, and easy flushing from all catheter lumens.

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REFERENCES
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