

Left ventricular puncture after intercostal catheter insertion

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TO THE EDITOR: We thank Lane and Seppelt for their case report in this journal earlier this year.¹ The case highlighted many aspects of performing safe pleural procedures. It also highlighted the lack of sensitivity of the clinical examination when it comes to pleural effusions.² The authors concluded that a full evaluation including computed tomography (CT) scanning is indicated before any procedure. We challenge this statement and suggest that the most useful imaging modality in this case, and in all cases of pleural effusion, is bedside ultrasonography, and that CT scanning is unnecessary in most cases as ultrasonography allows accurate localisation of pleural fluid and normal anatomical structures. We submit that bedside ultrasonography is now considered standard care when performing all pleural procedures for pleural fluid.³

We agree that in the setting of clinical stability there is no urgent need for the catheter to be inserted.

The report also raised the issue of the appropriate site for catheter placement, as it seems that the sixth intercostal space was outside the "triangle of safety".³ This is the triangle bordered by the anterior border of the latissimus dorsi, the lateral border of the pectoralis major, a line superior to the horizontal level of the nipple, and an apex below the axilla.⁴ The safety of this anatomical area has been questioned in another recent case report,⁵ which detailed an intracardiac placement similar to this case. In

the case reported by Lane and Seppelt, the CT scan showed that the effusion was loculated mainly in a posterior location, and the triangle of safety may not be the appropriate insertion point in this situation. We suggest that this case highlighted the fact that one cannot always use the triangle of safety, and that bedside ultrasonography would easily locate the position of the fluid to ensure accurate placement of the catheter.

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1 Lane AS, Seppelt IM. Left ventricular puncture after intercostal catheter insertion. *Crit Care Resusc* 2013; 15: 142.

2 Diacon AH, Brutsche MH, Solèr M. Accuracy of pleural puncture sites: a prospective comparison of clinical examination with ultrasound. *Chest* 2003; 123: 436-41.

3 Havelock T, Teoh R, Laws D, Gleeson F; BTS Pleural Disease Guideline Group. Pleural procedures and thoracic ultrasound: British Thoracic Society Pleural Disease Guideline 2010. *Thorax* 2010; 65 Suppl 2: ii61-76.

4 Laws D, Neville E, Duffy J; Pleural Disease Group, Standards of Care Committee, British Thoracic Society. BTS guidelines for insertion of a chest drain. *Thorax* 2003; 58 Suppl 2: ii53-9.

5 Jayathissa S, Dee S. How safe is the "safe triangle"? *N Z Med J* 2011; 124: 79-83. □

IN REPLY: We thank Putt and colleagues for their comments, with which we agree. The purpose of our brief vignette was to demonstrate the harm that can be done when chest drains are inserted blindly without appropriate assessment in non-emergency circumstances. We agree totally that in the 21st century, ultrasound should be the modality of choice. In our hospital, that would be the case, but unfortunately computed tomography (CT) scanners still remain more accessible to many emergency departments than ultrasound machines, including in the rural hospital from which this patient was referred. Our final sentence, "Full evaluation including CT scanning was indicated before

any procedure" should be expanded to include "ultrasound or CT scanning". We agree that in this case, the traditional "triangle of safety" was not appropriate and the best puncture site needed to be determined by imaging, preferably by ultrasound.

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