



Another pressurization system for invasive monitoring

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To the Editor,

We read with interest the correspondence by Dulberg *et al.*¹ regarding the pressurization system for arterial pressure monitors. A self-made system using widely available medical equipment (i.e., syringe, elastic tourniquet, medical tape, syringe) was described to replace a pressure bag for arterial pressure monitoring. Although the method described is simple to construct, it raises some issues. Firstly, the elastic tourniquet must have sufficient elasticity and length, which the medical staff may not know. Secondly, the syringe must be discarded after a single use and additional time is required to prepare another. Thirdly, the pressurization system is unlikely to have either constant flow or constant pressure, which may lead to a potential safety hazard.

When a pressure bag is unavailable, we prefer to use a syringe infusion pump to supply pressure to the transducer syringe. The pressurization system we use (Figure) has a number of components: syringe infusion pump, saline-filled syringe, extension tubing, and a three-way stopcock. The distal (from the patient) port of this original continuous-flush

device is attached to a separate three-way stopcock that provides a site to remove air from arterial tubing and allows the transducer exposure to atmospheric pressure so as to establish a zero reference value. The flush solution in the syringe, which is under pressure from the infusion pump, will flow into the arterial tubing via the extension tubing and the three-way stopcock (Figure).

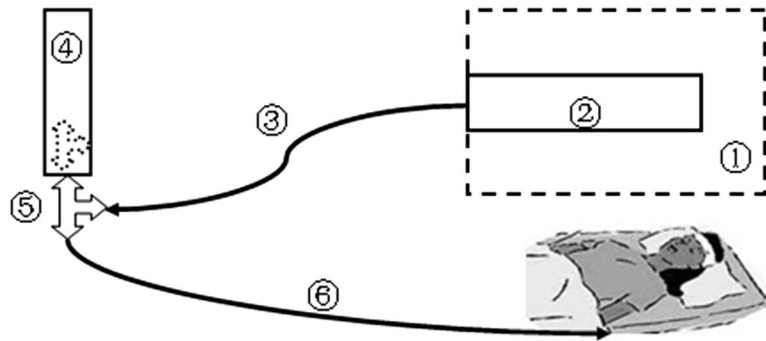
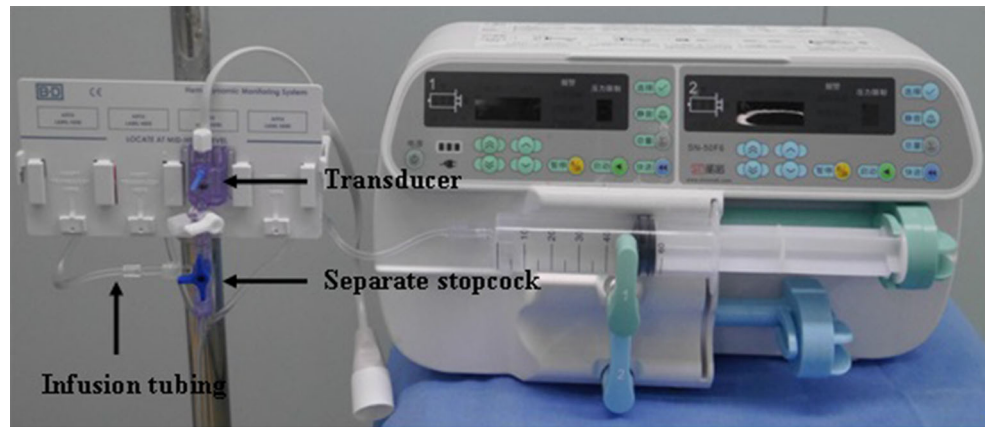
Syringe infusion pumps are commonly available equipment in hospitals, and all can supply enough pressure to provide a continuous slow infusion of solution into the arterial tubing and thus prevent thrombus formation within the arterial catheter. Furthermore, most also have slow- and fast-flow features to fulfill clinical requirements (e.g., fast flushing after taking blood samples). This makes our pressurization system simple, convenient, and practicable.

As Dulberg *et al.* have suggested, these pressurization systems can replace conventional pressure bag systems when pressure bags are deficient in quality or quantity. Nevertheless, further investigation is required before they are confirmed as comparatively safe systems.

This letter is accompanied by a reply. Please see Can J Anesth 2015; 62: this issue.

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Figure A schematic of the pressurization system used 1) Syringe infusion pump; 2) Syringe; 3) Extension tubing; 4) Transducer; 5) Three-way stopcock; 6) Arterial tubing



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Conflicts of interest None declared.

Associations None.

Reference

1. Dulberg Z, Levin D, Hong A. An improvised pressurization system for arterial lines. *Can J Anesth* 2015; DOI:[10.1007/s12630-014-0269-8](https://doi.org/10.1007/s12630-014-0269-8).