

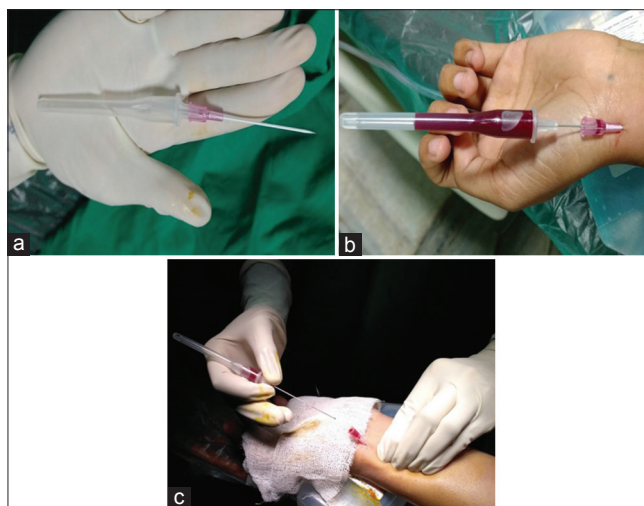
## Bloodless Arterial Cannulation Technique

Sir,

Radial artery cannulation is often used for invasive arterial blood pressure monitoring and arterial blood gas analysis. It is a routine procedure in cardiac surgical theaters and Intensive Care Units. Common complications include radial artery spasm (20%), hematoma (14%), and hemorrhage (0.5%).<sup>[1]</sup> However, many a times, this procedure involves blood spillage and soiling of drapes after successful cannulation. Further, in a haste to minimize this and establish the transducer connection quickly, there is always a potential risk of cannula dislodgement and needlestick injury to the health-care provider. According to the WHO, needlestick injuries nearly contribute to 95% of the HIV occupational seroconversions.<sup>[2]</sup> To prevent this, the authors propose a simple modification of the radial arterial cannulation technique using Smiths medical Jelco® vascular access device. This technique is suitable for both direct and ultrasound-guided arterial cannulation.

Under all aseptic precautions, the desired site is prepped, cleaned, and infiltrated with local anesthesia. Prior to cannulation, the cap of the Jelco® is attached to the hub of cannula-stylet assembly [Figure 1a]. After puncturing the radial artery, free flow of arterial blood is seen inside the hub. This backflow of the blood is collected within the cap attached to the hub which prevents blood spillage. The cannula is then slowly advanced over the stylet by rotating movements [Figure 1b]. After this, radial artery with the cannula *in situ* is compressed proximally, while the stylet-cap assembly is withdrawn gently [Figure 1c]. Transducer assembly is then connected to the hub by the assistant.

The authors are of the opinion that such a modification will help to minimize the risk of blood spillage, soiling of drapes and operation theater floor, potential direct contact with the blood,



**Figure 1:** Arterial cannulation technique with (a) cap attached to the hub of Jelco®; (b) blood being collected inside the cap and (c) clean site during fixation with proximal radial artery being compressed

and thereby blood-borne infections to the health-care personnel. In addition, the collected blood inside the cap can be used for biochemical analysis and investigations. This modification retains its cost-effectiveness in low-resource settings when compared to specialized intravenous safety catheters, namely BD arterial cannula with Floswitch™, BD Insyte™ Autoguard™, BD Insyte™ Autoguard™ Shielded IV Cannula, and Smiths medical Jelco® ViaValve® safety IV catheters, which prevents backflow of blood using a one-way valve within its system. However, certain amount of skill and practice is required in this technical modification to maneuver the cannula into the arterial lumen without any manipulation of the stylet-cap assembly of Jelco®.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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