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Commentary: Staying put: Supraclavicular intra-aortic balloon pump placement

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Traditional femoral intra-aortic balloon pump (IABP) placement has long been plagued by the inability of patients to ambulate while on support. While axillary insertion allows ambulation, it is complicated in upwards of 40% of cases by balloon migration, driveline kinking, and IABP malfunction, all of which are believed to be worsened by patient movement.^{1,2} In this edition of *JTCVS Techniques*, Song and Jeevanandam³ present their percutaneous supraclavicular subclavian approach to IABP placement with the use of a 24-cm wire-reinforced sheath.

Percutaneous supraclavicular subclavian IABP placement can be performed in the operating room or catheterization laboratory through the use of ultrasound and micropuncture for initial arterial access. Angiogram is then performed, the sheath is upsized to 9 Fr with the distal tip in the descending aorta just above the left mainstem bronchus, and the IABP is placed through a standard sheath over wire technique. The balloon and sheath are then secured to the patient using a silk suture, making sure to instill some laxity in the system to prevent migration with normal movement. Song's group typically uses left-sided access to reduce the risk of cerebral embolism if patient anatomy is suitable. The authors note anecdotal evidence of less kinking and migration due to the stiffer sheath with the distal tip sitting only a few centimeters proximal to the balloon in the descending aorta. In terms of removal,

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A supraclavicular subclavian approach for IABP placement may offer a reliable technique for ambulatory support that may mitigate some shortcomings of traditional approaches.

the balloon and sheath can be removed at bedside in the intensive care unit. While this group typically uses an ANGIO-SEAL device or manual pressure, their technique should be amenable to other percutaneous closure devices such as Perclose; balloon and sheath exchange can be achieved through standard techniques.

The 2018 heart allocation policy change increased the priority of patients with IABPs.⁴ Since then, the percentage of patients bridged with IABPs has more than tripled.⁵ As an ever-increasing number of patients with heart failure receive IABPs, it is important to improve the complication profile and patient burden of this method of support. Song and Jeevanandam offer a single and straightforward alternative to traditional axillary access that may mitigate some of the technical issues associated with shorter sheaths and transfemoral access, particularly in those in whom longer-term support is expected as a bridge to transplantation. We look forward to more data comparing this technique with their historic cohort of axillary access.

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