

Monitoring of blood pressure (BP) during procedures is variable, depending on multiple factors. Common methods include sphygmomanometer (BP cuff), separate radial artery catheterization, and side port monitoring of an indwelling sheath. Each means of monitoring has disadvantages, including time consumption, added risk, and signal dampening due to multiple factors.

see [Arterial line](#)

A new technology involving a 330 µm [fiber optic sensor](#) embedded in the wall of a sheath structure was tested against both radial artery catheter and sphygmomanometer readings obtained simultaneous with readings recorded from the pressure sensing system (PSS). Correlations and Bland-Altman analysis were used to determine whether use of the PSS could substitute for these standard techniques.

The results indicated highly significant correlations in systolic, diastolic, and mean arterial pressures (MAP) when compared against radial artery catheterization ( $p < 0.0001$ ), and MAP means differed by  $< 4\%$ . Bland-Altman analysis of the data suggested that the sheath measurements can replace a separate radial artery catheter. While less striking, significant correlations were seen when PSS readings were compared against BP cuff readings.

The PSS has competitive functionality to that seen with a dedicated radial artery catheter for BP monitoring and is available immediately on sheath insertion without the added risk of radial catheterization. The sensor is structurally separated from the primary sheath lumen and readings are unaffected by device introduction through the primary lumen. Time delays and potential complications from radial artery catheterization are avoided <sup>1)</sup>.

<sup>1)</sup>

Purdy PD, South C, Klucznik RP, Liu KC, Novakovic RL, Puri AS, Pride GL, Aagaard-Kienitz B, Ray A, Elliott AC. Use of a pressure sensing sheath: comparison with standard means of blood pressure monitoring in catheterization procedures. J Neurointerv Surg. 2016 Jul 15. pii: neurintsurg-2016-012536. doi: 10.1136/neurintsurg-2016-012536. [Epub ahead of print] PubMed PMID: 27422970.

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