Accuracy and Procedural Characteristics of Standard Needle Compared with Radiofrequency Needle Transseptal Puncture for Structural Heart Interventions

Gaurav Sharma MD, Gagan D. Singh MD, Thomas W. Smith MD, Dali Fan MD, Reginald I. Low MD and Jason H. Rogers MD

University of California, Davis, Division of Cardiovascular Medicine, Sacramento CA

HIGHLIGHTS

- This retrospective, single-center study compared the performance and accuracy of a mechanical needle and the Baylis NRG® RF Transseptal Needle in gaining left-sided access via transseptal puncture in 52 structural heart procedures, including left atrial appendage occlusions and mitral valve repairs.

- The punctures attempted using the unassisted mechanical needle were successful in 88% of cases while the NRG® RF needle was successful in 100% of cases (Figure 1). Two cases in which the mechanical needle failed required crossover to the NRG® RF needle to achieve successful transseptal puncture.

- The average extent to which the septum was tented was reduced by 51% with the NRG® RF needle compared to the mechanical needle (Figure 2, p<0.05).

- The NRG® RF needle resulted in a higher overall transseptal puncture success rate, decreased puncture time and reduced tenting.

**Figure 1.** Successful transseptal punctures performed with the Baylis NRG® RF needle vs. an unassisted mechanical needle.

**Figure 2.** Pre-to-maximum tenting at the transseptal site using the Baylis NRG® RF needle vs. a mechanical needle (* p<0.05).