

Lotus: Tips and Tricks

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<features>

"Lotus" new TAVI system is a break-through over Para-Valvular Leakage (PVL). It is self-expanding valve like EvolutR. But it is different from EvolutR, because it minimizes PVL with the innovative Adaptive Seal™ Technology. The Lotus gives physicians the Power of Control during TAVI procedures and lets physicians know result before valve release, because of the precise placement and complete repositionability.

<components>

Braided Nitinol Frame is designed for strength, flexibility, and ability to retrieve, reposition, and redeploy. Bovine Pericardium is a proven long-term material. Adaptive Seal minimizes paravalvular leak by conforming to irregular anatomical surfaces. Locking Mechanism enables operator to control of implant. Locking step is reversible and the locked valve can be unlocked and resheathed. Central Radiopaque Positioning Marker aids precise positioning. Radiopaque marker in center of nitinol braid is used to position Lotus Valve.

<strong points>

PVL is the most important factor to determine the success or quality of TAVI procedure, because it's severity is associated with long-term clinical outcome after TAVI. Eccentric severe calcification is the most important predictor of PVL. Bicuspid aortic stenosis that is common in Oriental population is also frequently associated with PVL after TAVI. Lotus TAVI basically does not result in PVL, unless

the undersized valves are used. In other words, clinical outcome will be the best after TAVI with Lotus valve than TAVI with the other valves.

Traditional drawback of self-expanding valves was high frequency of complete AV block that may be worsened by outside seal or skirt because of the higher outward pressure on AV conduction system. But actual incidence of CAVB in SNU-Hospital was only 5% after Lotus TAVI because we have manipulated it as high as possible from the beginning of deployment and finally implanted at a very-high position. CAVB is caused by multiple factors: [1] oversizing severity, [2] deep implantation at the final stage, and [3] scratch on LV septum by expanding valve frame during early phase of deployment. Perfect re-capturability of Lotus valve guarantees the final high implantation and prevent CAVB.

<weak points>

Lotus Introducer Sheath (Small for 23 mm valve) requires access vessels 6.0 mm or larger, while Lotus Introducer Sheath (Large for 25 and 27 mm valves) requires access vessels 6.5 mm or larger. That sometimes limits its application to patients with small ilio-femoral artery.

<conclusion>

Lotus TAVI system is more difficult in deployment than Sapien3 or EvolutR system, because it shortens in length and expands in diameter simultaneously. Such difficulty of Lotus is well rewarded by the most excellent result among current TAVI competitors. 'The best skill of operators, the best result for patients !'