Dekel- Cardiac prostheses and their deployment

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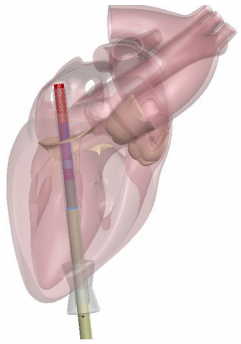
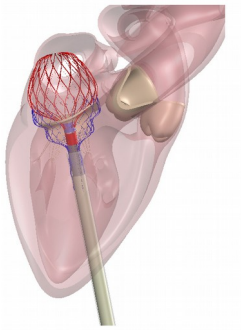
The Problem- Mitral valve dysfunction (MVD)

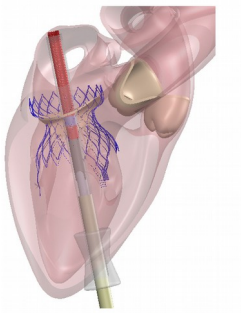
MVD can be caused by malfunction of any of the components of the valve and may lead to regurgitation that warrants surgical intervention. If not treated, MVD can cause life-threatening complications such as heart failure, atrial fibrillation, and pulmonary hypertension. The current standard treatments are valve repair or replacement surgeries. Today more than 106,000 valve repair and replacement open heart surgeries are performed annually in the US. This procedure has a life-threatening complication and there is an urgent need for a novel minimal invasive procedure to replace the open heart surgeries.

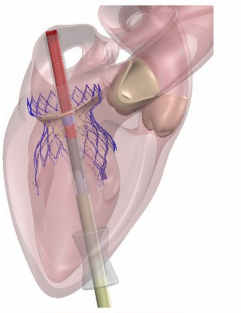


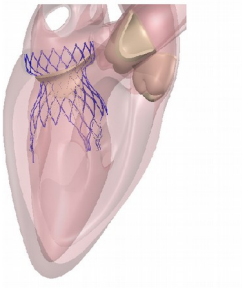
The Dekel Device:

The Dekel is a delivery system for replacing the native cardiac valve in a minimally invasive procedure. The Dekel is inserted into the chamber through a little cut in the apex. The device provides a stable fulcrum in the left atrium (LA) to lean to and move freely in axial and rotational directions at any stage. Then when in place a wire mesh is self-expands from a cylindrical collapsed state to a "cinch-girdle". The narrow waist of the prosthesis mitral valve (PMV) is shaped to seat on the annulus of the native valve. When the wires mesh is released and expanded to the deployed state, it pushes aside the native leaflets and replaces the native valve. Then the lower cup of the PMV releases hooks which are shaped to puncture and anchor in the wall of the ventricle, so the PMV is fixed tightly in its position on the annulus. The device can be repositioned up till the final stage when the anchors are released.









Advantages of the Dekel:

- ✓ **A Game-changing technology:** Minimally invasive solution that addresses the limitations of open heart surgery.
- ✓ **Optimal positioning**: Helps defining accurately the mitral annulus. Markers on the device and on the handles allow optimal orientation.
- ✓ **Maneuverability:** The valve deployment elements are separate and freely moving.
- ✓ **Free Blood flow**: The Dekel device does not interfere with valve function.
- ✓ **Safety:** Dekel will be withdrawn only after confirming stable deployment.
- ✓ **Cost-saving solution:** Saves the costs of the OR and hospitalization.

Intellectual Property

- ✓ Patents pending

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