

# Vention Takes Innovative Balloon Catheter from Concept to Commercialization



## CUSTOMER SITUATION

A small startup company had an idea for a novel balloon catheter for aortic valvuloplasty. The customer had patented a “dog bone” balloon

geometry that would conform to the valve anatomy.

The balloon had to:

- Lock into the valve anatomy
- Maintain shape throughout inflation
- Hyperextend leaflet without overdistension of the annulus
- Rapidly inflate/deflate

*As a small company mostly comprising business and medical experts, the customer needed to outsource most technical and engineering needs. The customer chose to work with Vention as a single-source partner for its expertise in balloon design and fabrication, its vertically integrated components, and its ability to provide the full range of services needed to bring the product to market, from concept through manufacturing.*



## VENTION SOLUTION

Vention’s in-house design team explored various concepts and materials to design the “dog bone” balloon geometry the customer had envisioned, with Design for Manufacturability (DFM) in mind.

Leveraging Vention’s balloon-blowing capabilities, the team first fabricated a PET balloon. However, preclinical studies showed that the PET balloons were susceptible to

premature burst when inflated in valves with calcification. The team repeated the study with nylon balloons, which showed better resistance to premature burst when inflated in calcified valves.

Working closely with the customer, Vention managed the processes of verification and validation, clinical and pilot manufacturing, and commercial manufacturing.



## OUTCOME

A year after the product launched into the global marketplace, the customer signed a distribution agreement with a large, multinational medical company.

Vention is currently working with the customer on its next-generation technology.