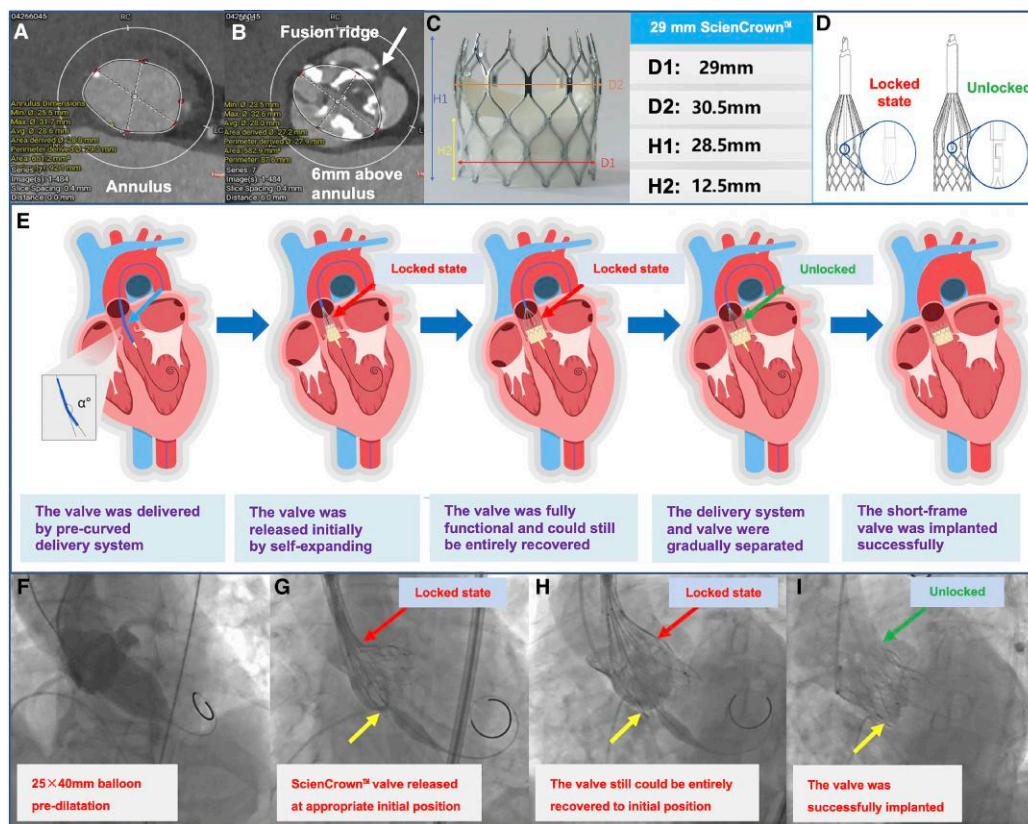


# Transcatheter aortic valve implantation with a novel short frame-self expanding valve

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A 72-year-old man with severe aortic stenosis presented with recurrent chest pain. Cardiac multidetector computed tomography with 3mensio software revealed that the annulus circumference was 85.8 mm (*Panel A*). Multiplanar measurement showed a calcified bicuspid aortic valve with the fusion ridge of the left and right leaflets above the annulus (*Panel B*). This was the last case in our multicentre clinical trial (NCT05202977). In the first-in-man study, the novel ScienCrown™ system [Lepu Medical Technology (Beijing) Co., Ltd, Beijing, China] demonstrated promising results of being a self-expanding and short-stent valve, as it was designed to be, (*Panel C*) with a unique locking and unhooking structure (*Panel D*). The valve was completely retrievable and repositionable (*Panel E*) before being unlocked by a delivery system. A 22-F guiding catheter was inserted via the common femoral artery, and a 25 × 40 mm NUMED-II balloon was inflated to completely pre-dilate the calcified aortic valve (*Panel F*). The 29 mm ScienCrown™ valve was then delivered coaxially to the aortic valve using a pre-curved delivery system. The valve was slowly released while being paced at 180 beats per minute in the right ventricle. The initial position of the valve was appropriate on angiography (*Panel G*). Next, the valve continued to be released until it was fully functional and could still be entirely recovered (*Panel H*). After turning an unlocking knob, the delivery system and valve were gradually separated, and only the valve was successfully implanted, as shown by angiography (*Panel I*).

**Consent:** Written informed consent for the publication of the clinical details and images of the patient was obtained.

**Conflict of interest:** M.M.F. declared that during the study period, he was a physician in the study centre; however, he is currently affiliated with Lepu Medican Technology. However, his affiliation did not influence our results. Other authors declare that there is no conflict of interests.

**Ethics approval:** This study was conducted in accordance with the Declaration of Helsinki. This study was approved by the Ethics Committee of Fuwai Hospital.

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## Data availability

The data underlying this article will be shared on reasonable request to the corresponding author.