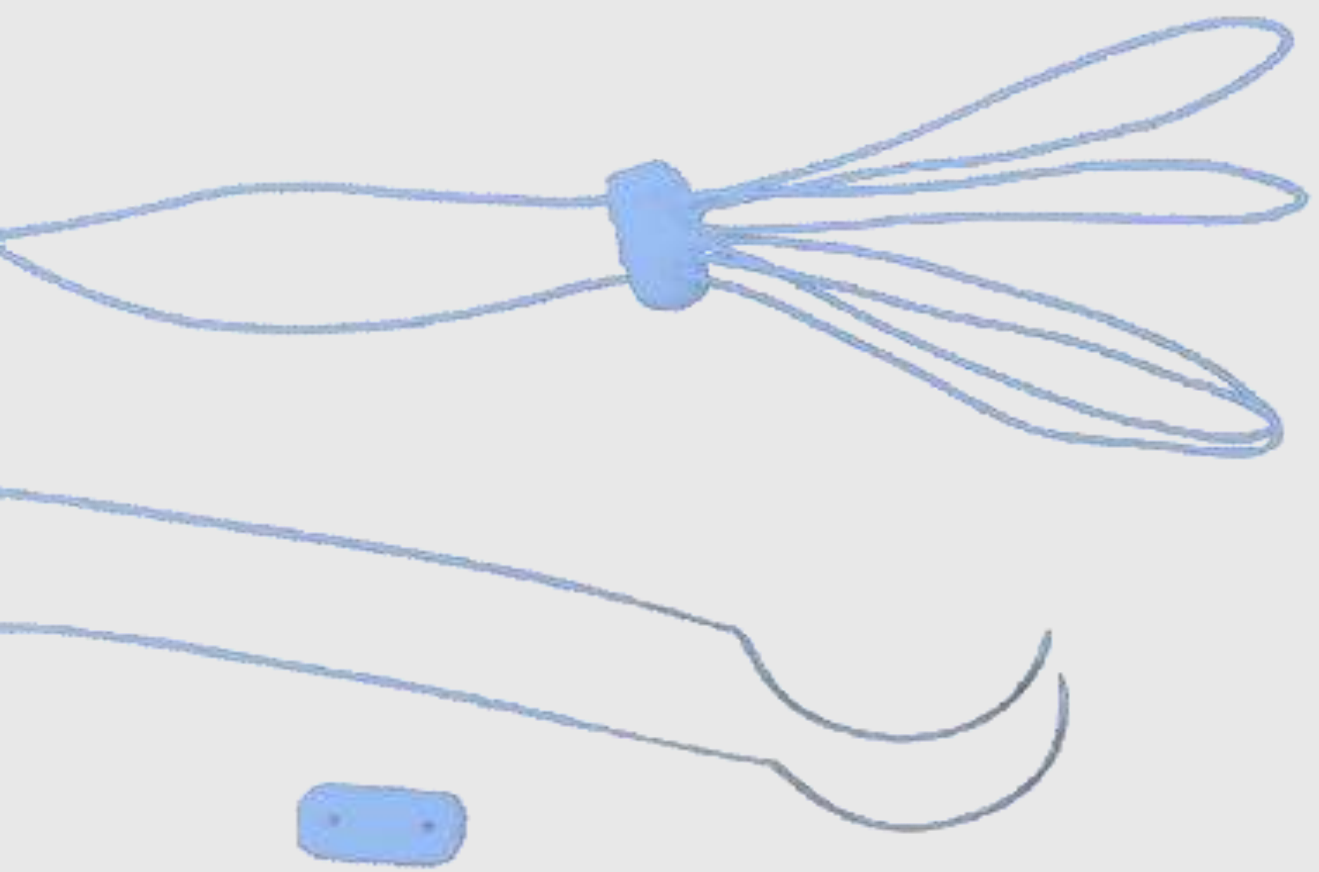


# how i do it – minimally invasive mitral valve repair using **tensor system**

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Mitral valve prolapse (MVP) is a common valvular heart disorder characterized by the systolic displacement of one or both mitral valve leaflets into the left atrium during ventricular contraction. It is estimated to affect approximately 2–3% of the general population, with a higher prevalence in females.



Minimally invasive mitral valve repair has recently gained popularity over traditional sternotomy techniques, demonstrating safety and reliability.

However, there is not an ideal solution for calibrating the length of Gore-Tex neochords used in mitral valve repair.

We present the first application of the **Tensor System** (TS) in minimally invasive mitral valve repair. TS is a new surgical facilitator specifically designed to enable fast, reliable, and precise calibration of Gore-Tex neochords during mitral valve repair procedures.

the tensor device is available in four distinct lengths, enabling tailored calibration of neochords to accommodate the patient’s individual mitral valve anatomy.



size 5 mm



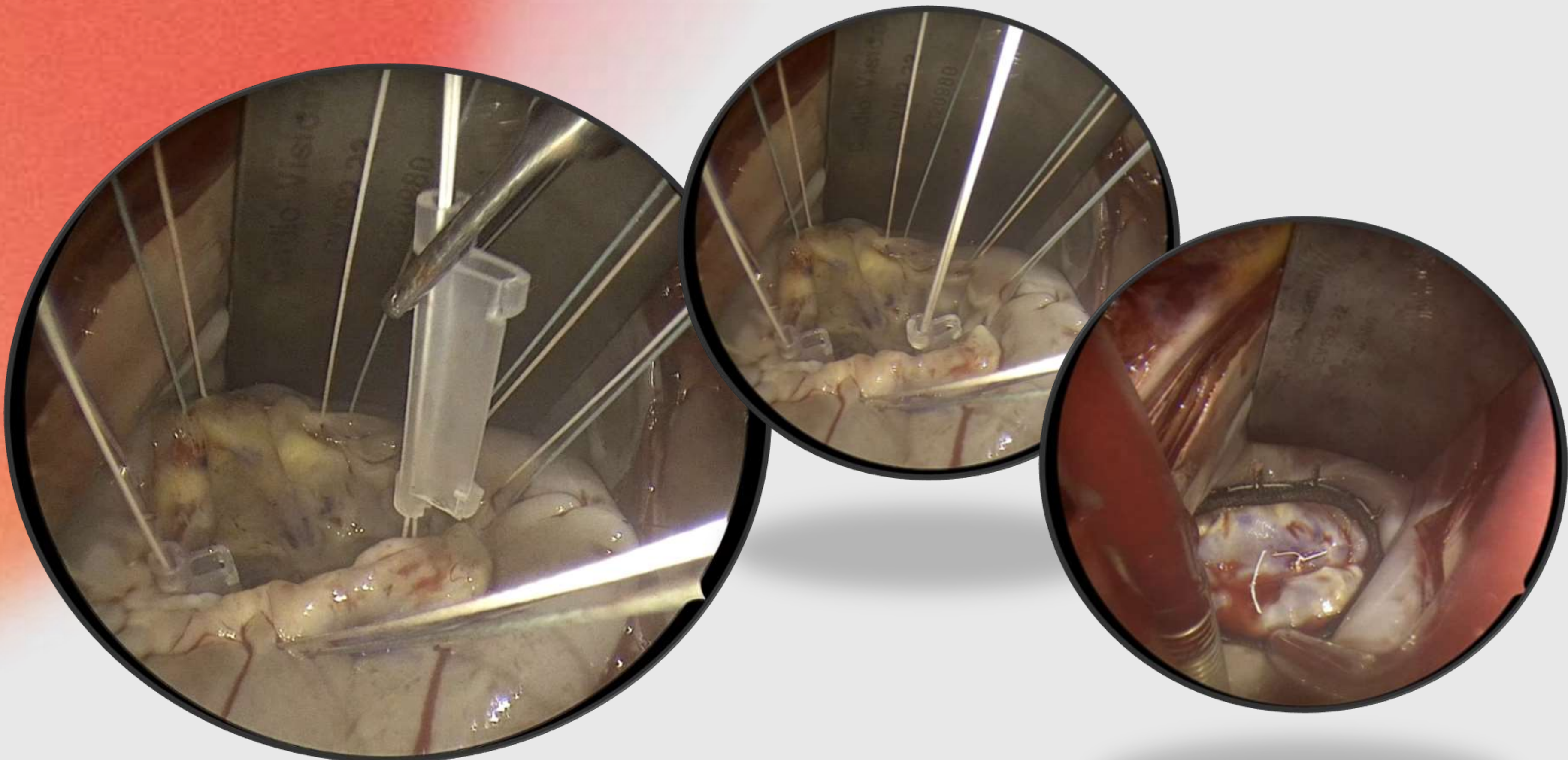
size 10 mm



size 20 mm



size 25 mm

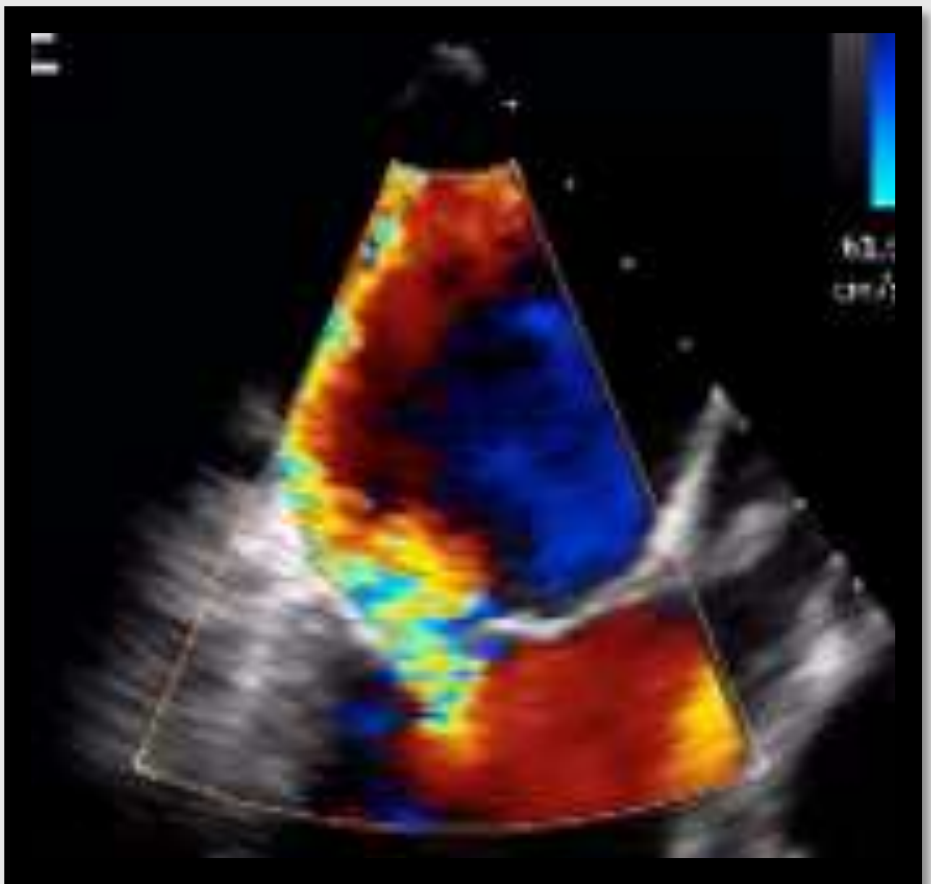


## case report

Two patients with severe degenerative mitral valve prolapse underwent minimally invasive mitral valve repair utilizing the TS at our institution. In both cases, the mitral valve was accessed through a 6 cm video-assisted mini-thoracotomy.



Following percutaneous femoral cannulation and aortic cross-clamping, mitral valve endoscopy confirmed the transesophageal echocardiography (TOE) findings, revealing P2 and P3 prolapse caused by chordal rupture in both patients.



For each patient, two pairs of **Gore-Tex CV4** neochords were placed under endoscopic guidance on the posterior papillary muscles. In the first case, two **20 mm** TS devices were required, while in the second case, two **25 mm** TS devices were used. The TS was used to calibrate and secure the neochords with precision. After performing the water test to verify the quality of the repair, the TS devices were **easily detached** from the neochords using a long needle holder. The aortic cross-clamp times were 65 and 67 minutes, respectively.

Postoperatively, TOE confirmed **successful mitral valve repair** with no residual regurgitation, and the neochords were of uniform length, **tailored to each patient’s anatomical requirement**. Both patients experienced uncomplicated postoperative recoveries, were extubated within three hours, and were discharged on postoperative day five. Clinical follow-up at 30 days confirmed stable mitral valve repairs without residual regurgitation.