**INTERCOMMISSURAL DISTANCE AS THE LONE ANNULOPLASTY RING SIZING STRATEGY MAY NOT PREVENT SAM**

**S. Edla**, E. Maiodna, S. Neupane, H. Rosman

St John Hospital and Medical Center, Detroit, MI, USA

*Introduction*: Systolic anterior motion (SAM) is a rare but major complication of mitral valve repair (MVr). Selecting the right ring size can be challenging given the plethora of sizing strategies available. Despite a low incidence of 2-5% of all MVr cases, SAM developing as a result of inadequate sizing can be potentially life-threatening. We report a case of SAM following MVr with a CarboMedics AnnuloFlex ring (Sorin-CarboMedics, Austin, USA) causing significant left ventricular outflow tract (LVOT) obstruction and precipitating in cardiogenic shock.

*Case*: A 67-year-old male with history of coronary artery disease presenting with exertional dyspnea had an elective cardiac catheterization which revealed significant three-vessel coronary disease. Transthoracic echocardiogram showed moderate mitral regurgitation (MR) with an ejection fraction (EF) of 55%. Hence, the patient was scheduled for coronary artery bypass graft along with MVr. After sizing the mitral valve geometry using the manufacturer-recommended intercommissural distance, MVr was performed with a CardioMedics AnnuloFlex ring. Postoperative TEE confirmed a well-seated ring with trivial MR. Around 18 hours post-procedure, the patient developed worsening hypotension. Stat TEE showed severe MR and a new SAM of the anterior mitral leaflet causing severe LVOT obstruction with a peak gradient of 103 mmHg and EF of 35%. Patient immediately underwent emergent mitral valve replacement. Postoperative TEE showed no MR and an EF of 60%. Patient remained critical but stable over the next 24 hours. However, he gradually developed multi-organ dysfunction and eventually expired 48 hours later. *Discussion*: Despite the critical importance of accurate ring size selection in MVr, the sizing strategies are fairly arbitrary and dependent on manufacturers’ recommendations. Many commercial rings use the intercommisural distance as the primary selection strategy even though no significant literature exists supporting one strategy over the other. Cases such as ours indicate a need for stronger scientific justification of sizing strategies.