Alcolizzazione percutanea o septectomia chirurgica nella miocardiopatia ipertrofica

Il punto di vista del chirurgo

Paolo Ferrazzi

Centro per la Cardiomiopatia Ipertrofica

Policlinico di Monza

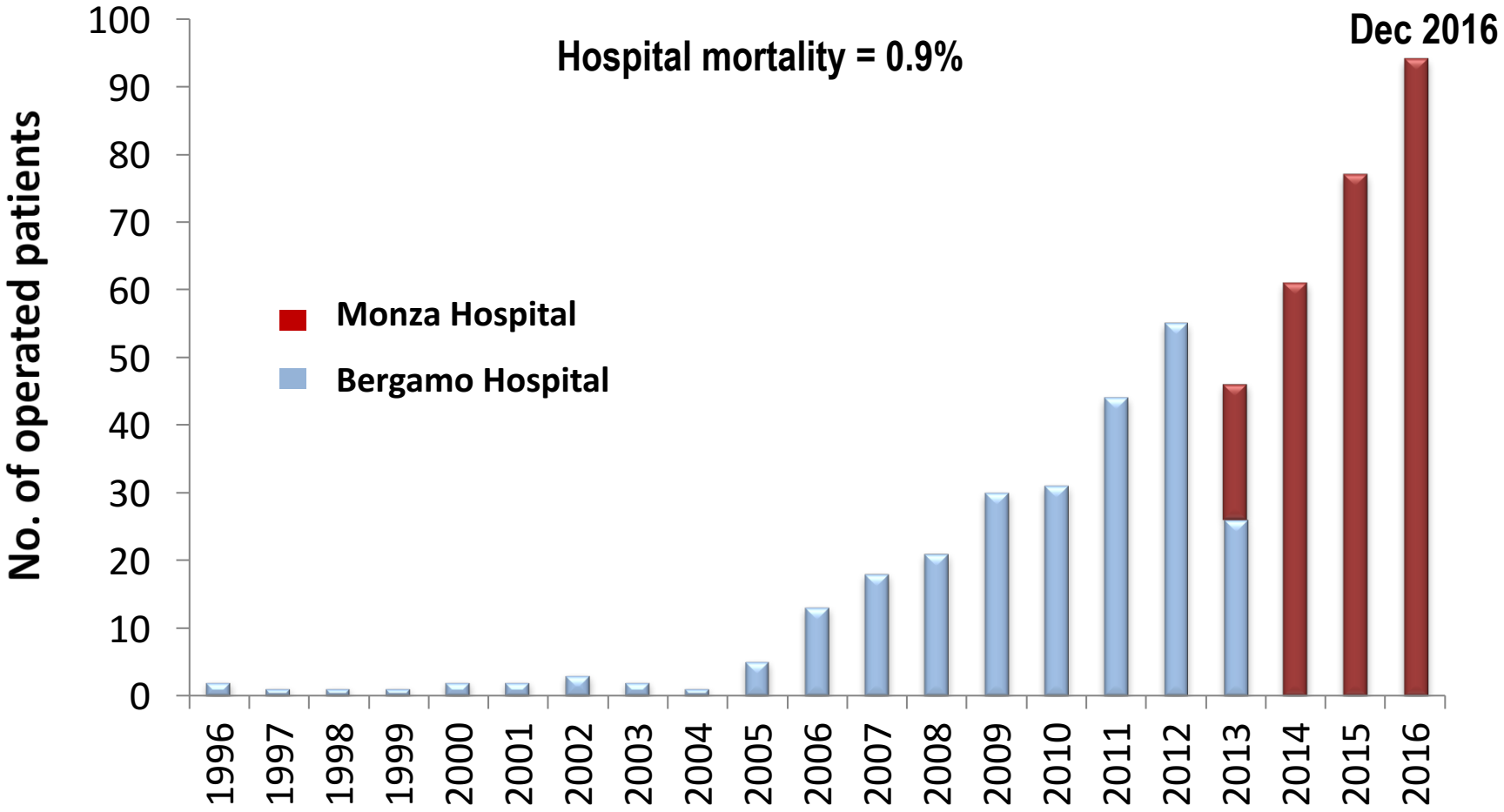
ECOCARDIOCHIRURGIA
ECO-RM-TC CHIRURGIA-INTERVENTISTICA

Milano, Marzo 29, 2017

Policlinico di Monza

Surgical Septal Myectomy in 505 Patients with HOCM

January 1996 - December 2016



Dr. Ferrazzi, personal experience

Recommendations for Invasive Treatment of LV Outflow Obstruction

"Surgical Myectomy is the first consideration for the majority of eligible patients with HCM".

"When surgery is contraindicated, alcohol septal ablation can be beneficial in eligible adult patient with HCM, LVOT obstruction and severe drug refractory symptoms".

ACCF/AHA 2011 Guidelines on treatment of HCM

"Septal alcohol ablation is associated with a higher risk of AV block, requiring permanent pacemaker implantation and larger residual LV outflow tract gradients".

ESC 2014 Guidelines on treatment of HCM

Hypertrophic obstructive cardiomyopathy-alcohol septal ablation vs. myectomy: a meta-analysis

Alcohol septal ablation and MM provide significant reduction in LVOT gradient and NYHA functional class on mid-term follow-up. A higher percentage of patients required PPM after ASA. Randomized trials are needed to confirm current findings.

Alam et al. Eur Heart J, 2009

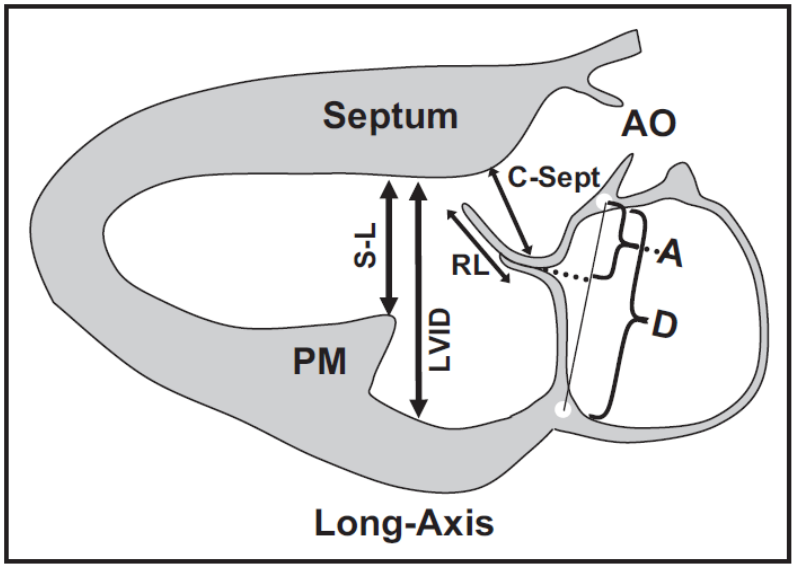
A Systematic Review and Meta-Analysis of Long-Term Outcomes After Septal Reduction Therapy in Patients With Hypertrophic Cardiomyopathy

Long-term mortality and (aborted) SCD rates after ASA and myectomy are similarly low. Patients who undergo ASA have more than twice the risk of permanent pacemaker implantation and a 5 times higher risk of the need for additional septal reduction therapy compared with those who undergo myectomy.

Liebregts et al JACC 2015

Frequency and Mechanism of Persistent Systolic Anterior Motion and Mitral Regurgitation After Septal Ablation in Obstructive Hypertrophic Cardiomyopathy

Hg, p = 0.0004; >45 mm Hg in 9 vs 0, p = 0.03, respectively) in patients with persistent SAM. Anterior malposition was present before VSA, with anterior-to-posterior leaflet coaptation position ratio <0.5 predicting SAM after VSA (p <0.0001). In conclusion, SAM and MR were often not eliminated using VSA. Mitral valve malposition was a strong predictor of SAM and MR reduction after VSA and may need to be considered in optimizing results of this procedure.



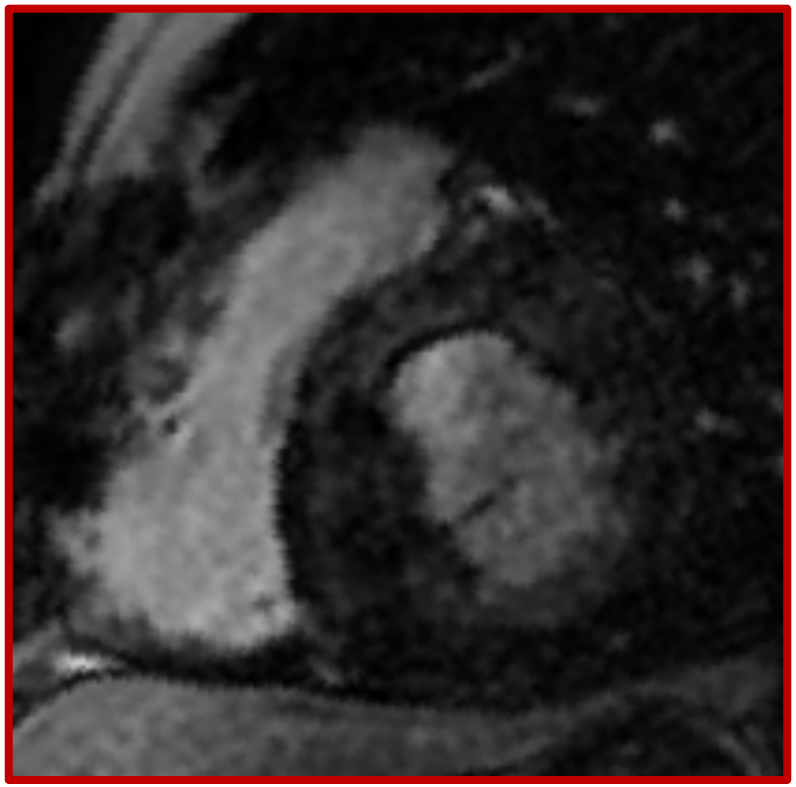
Delling et al. Am J Cardiol, 2007

SEPTAL SCARRING

Post-alcohol ablation

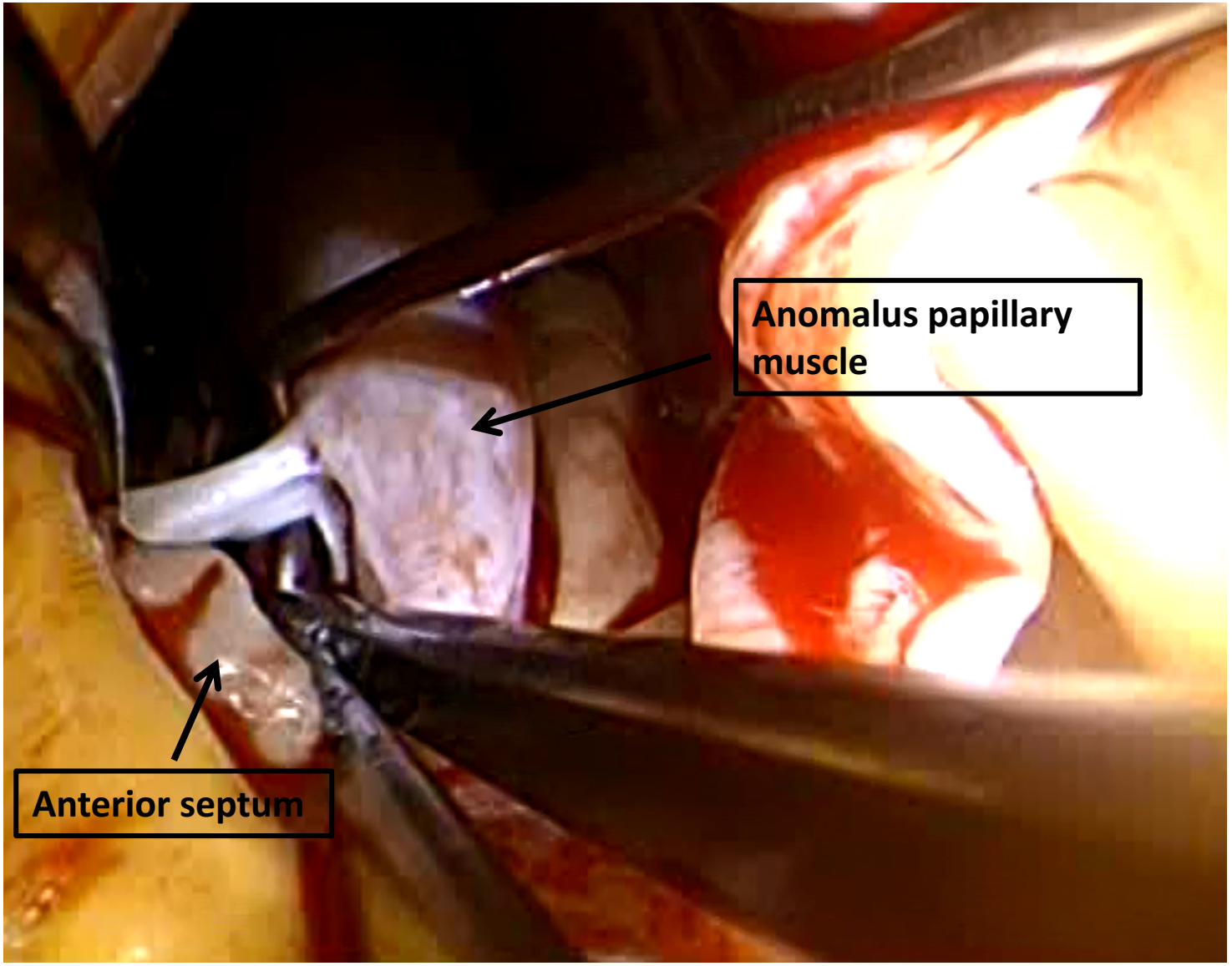
Septal Scar

Post-myectomy

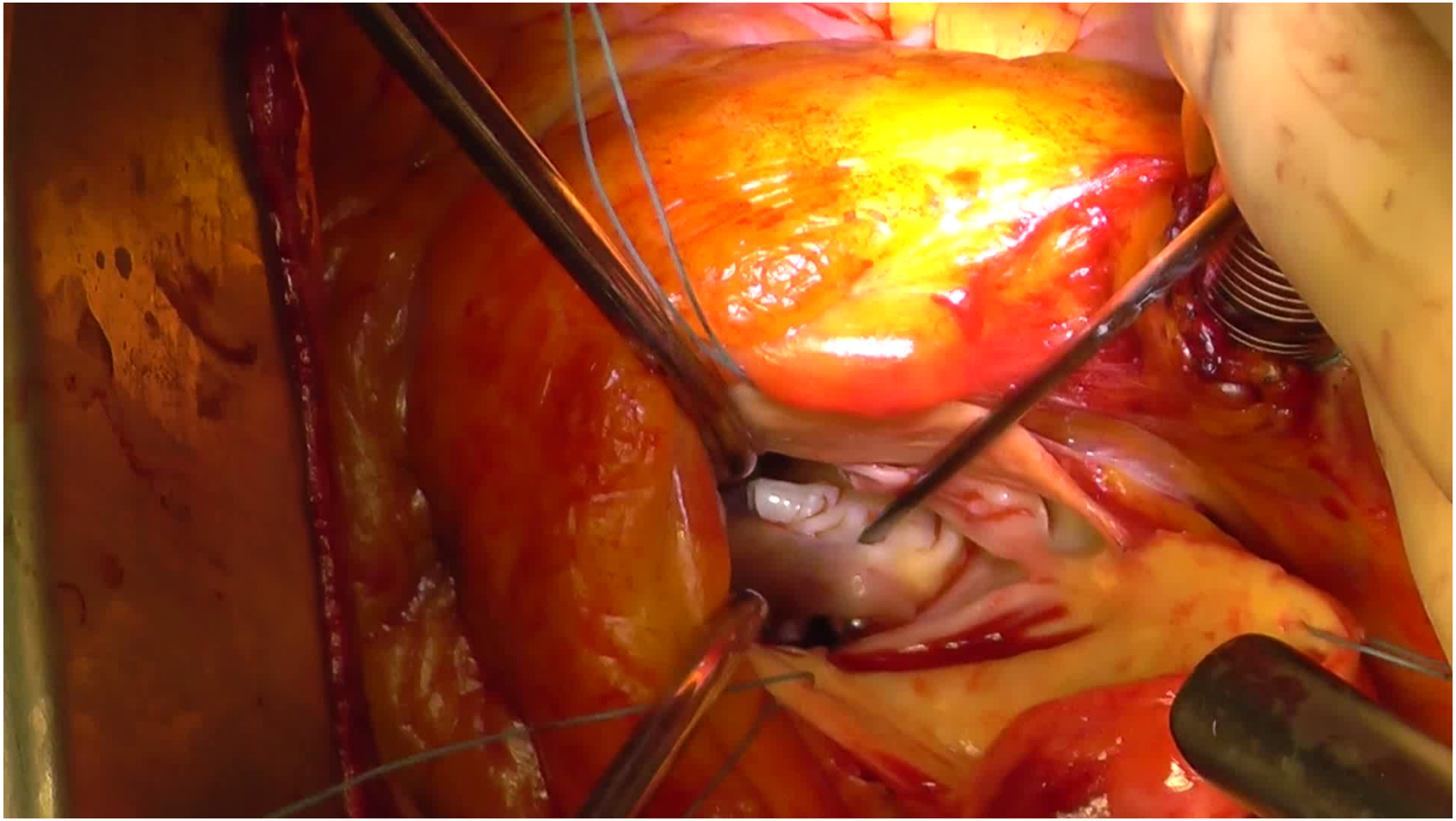


No Scar

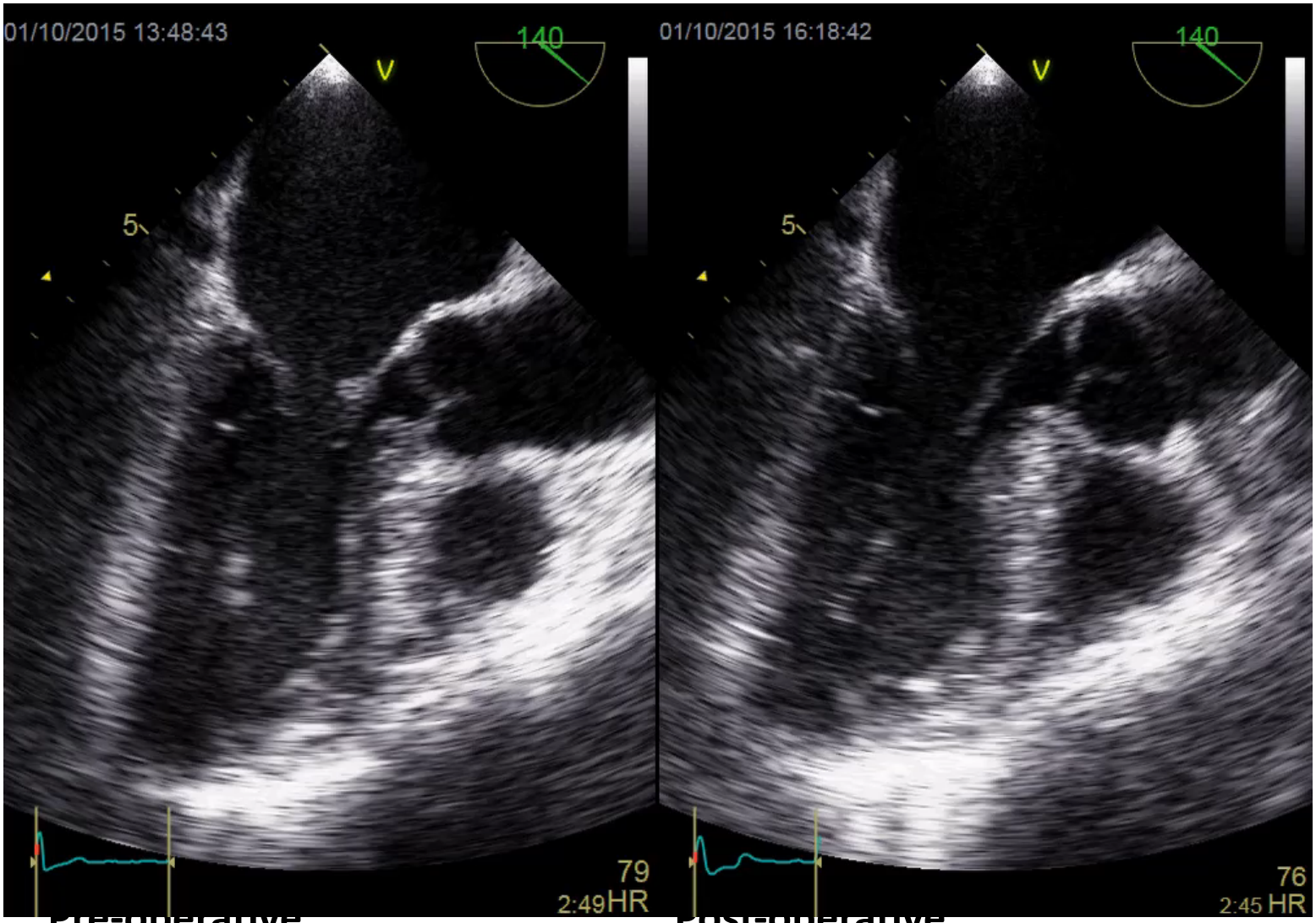
Intraoperative image of a 65 female patient with obstructive HCM who underwent septal myectomy (1.76 g) and secondary chordal cutting (3)



Intraoperative image of a 65 female patient with obstructive HCM who underwent septal myectomy (1.76 g) and secondary chordal cutting



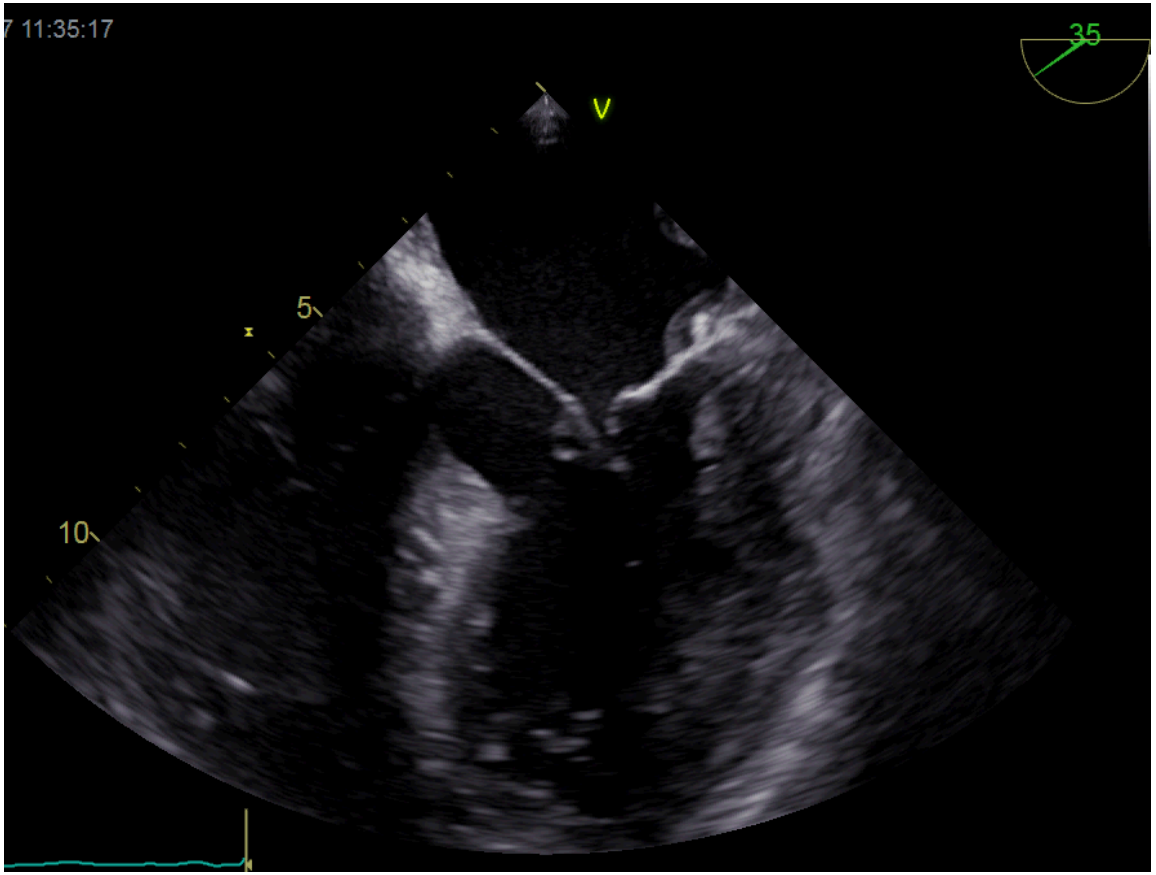
Intraoperative image of a 65 female patient with obstructive HCM who underwent septal myectomy (1.76 g) and secondary chordal cutting

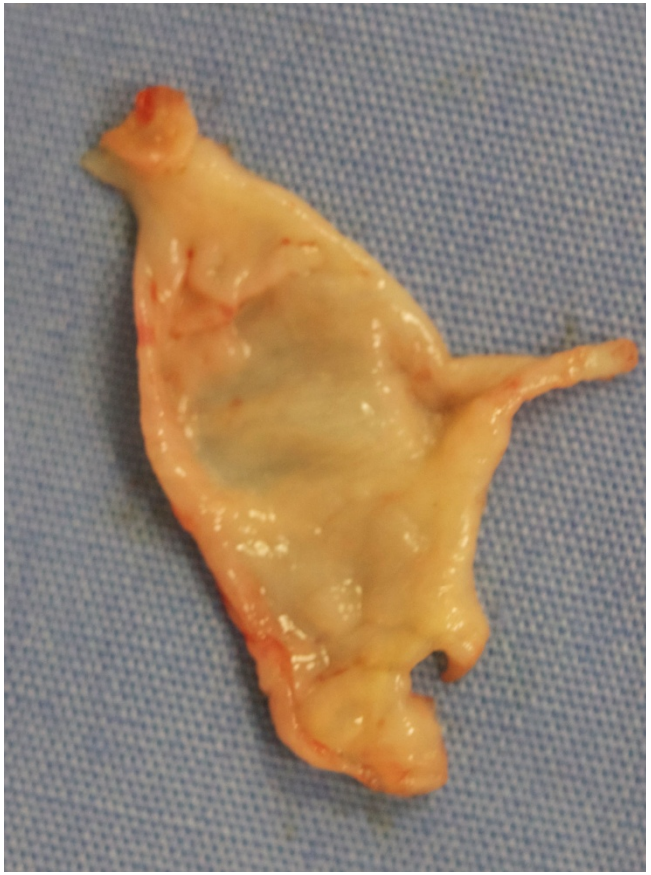


Pre-operative

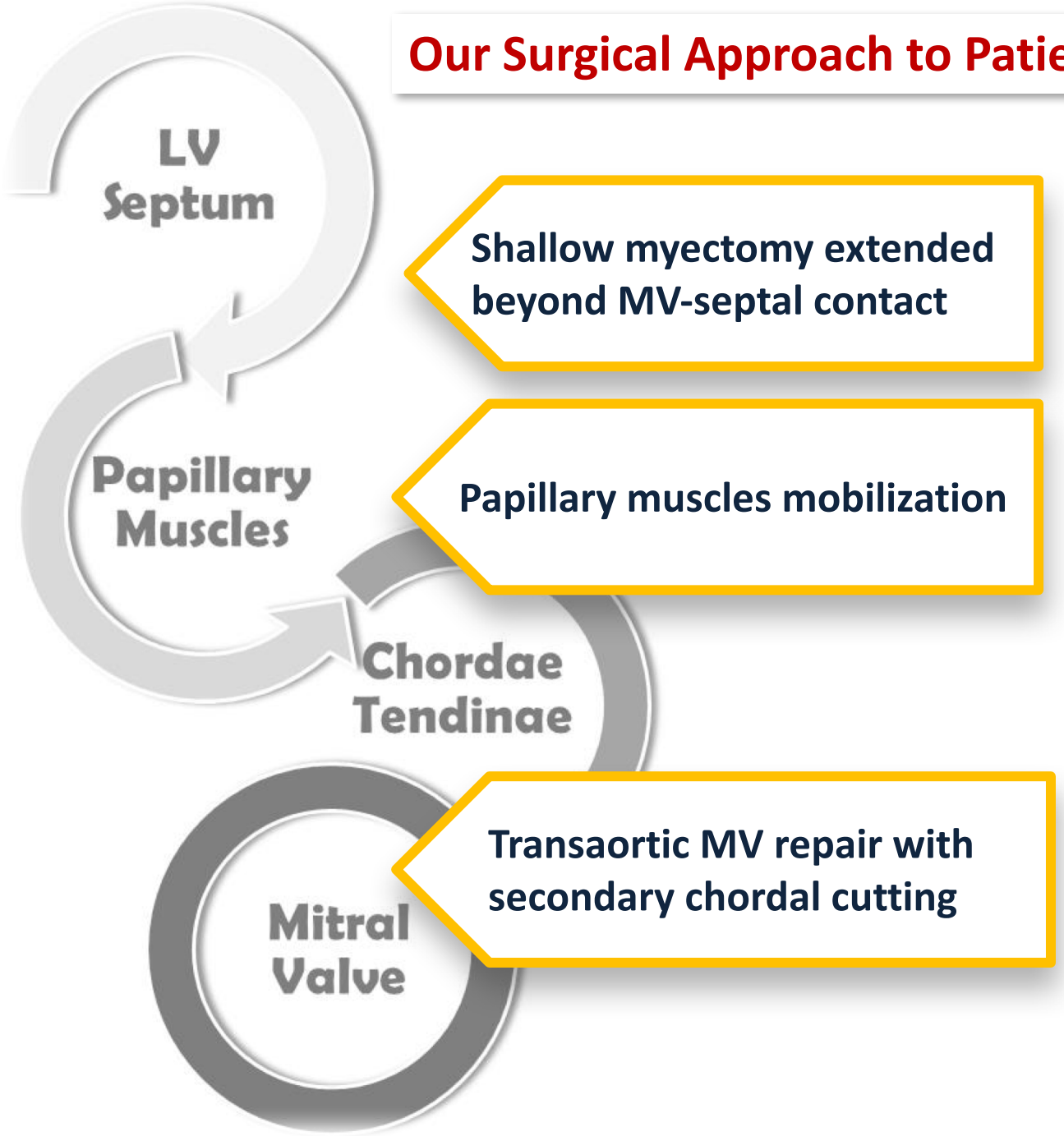
Post-operative

Intraoperative images of a 53 male patient with obstructive HCM who underwent septal myectomy (1.91 g) and secondary chordal cutting (6)

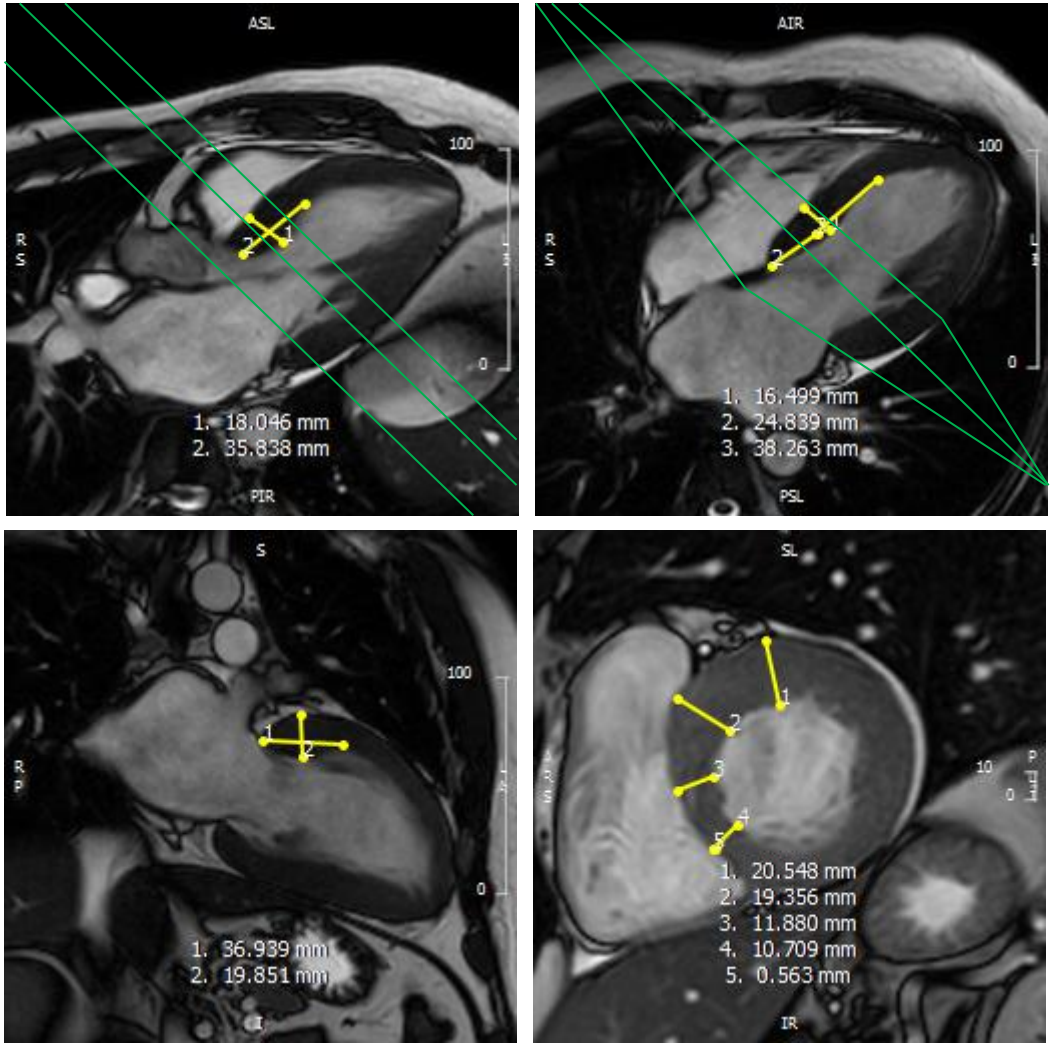




Our Surgical Approach to Patients with HOCM



Pre-op Cardiac MRI allows a Tailored Shallow Myectomy

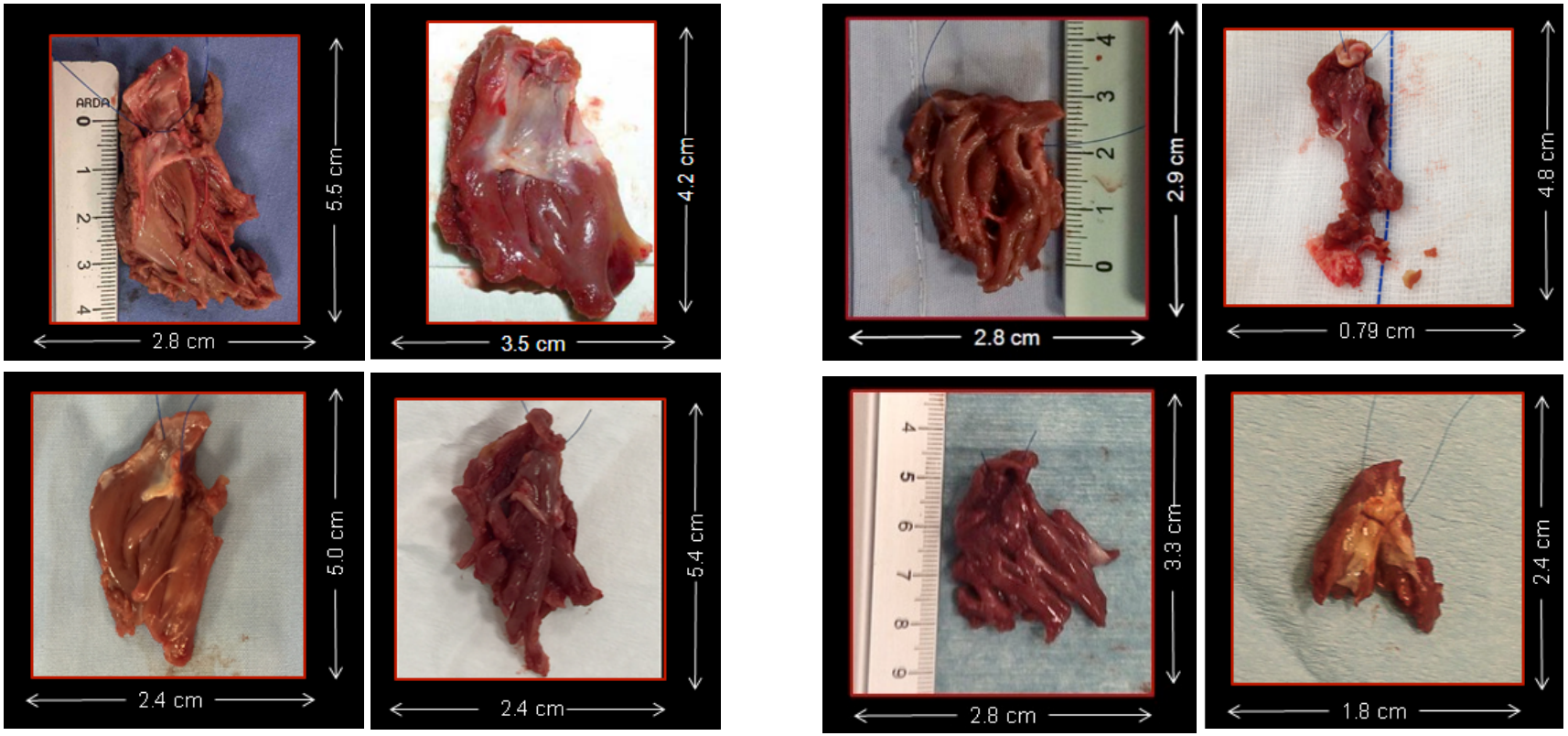


- Septal thickness/max depth distribution of hypertrophy
- Presence of crypts
- Base to apex extension of hypertrophy (Related to anterior or posterior septum)
- Anomalies of papillary muscles attachment and bundles

"Shallow" Myectomy
(patient with septal thickness 17 mm)

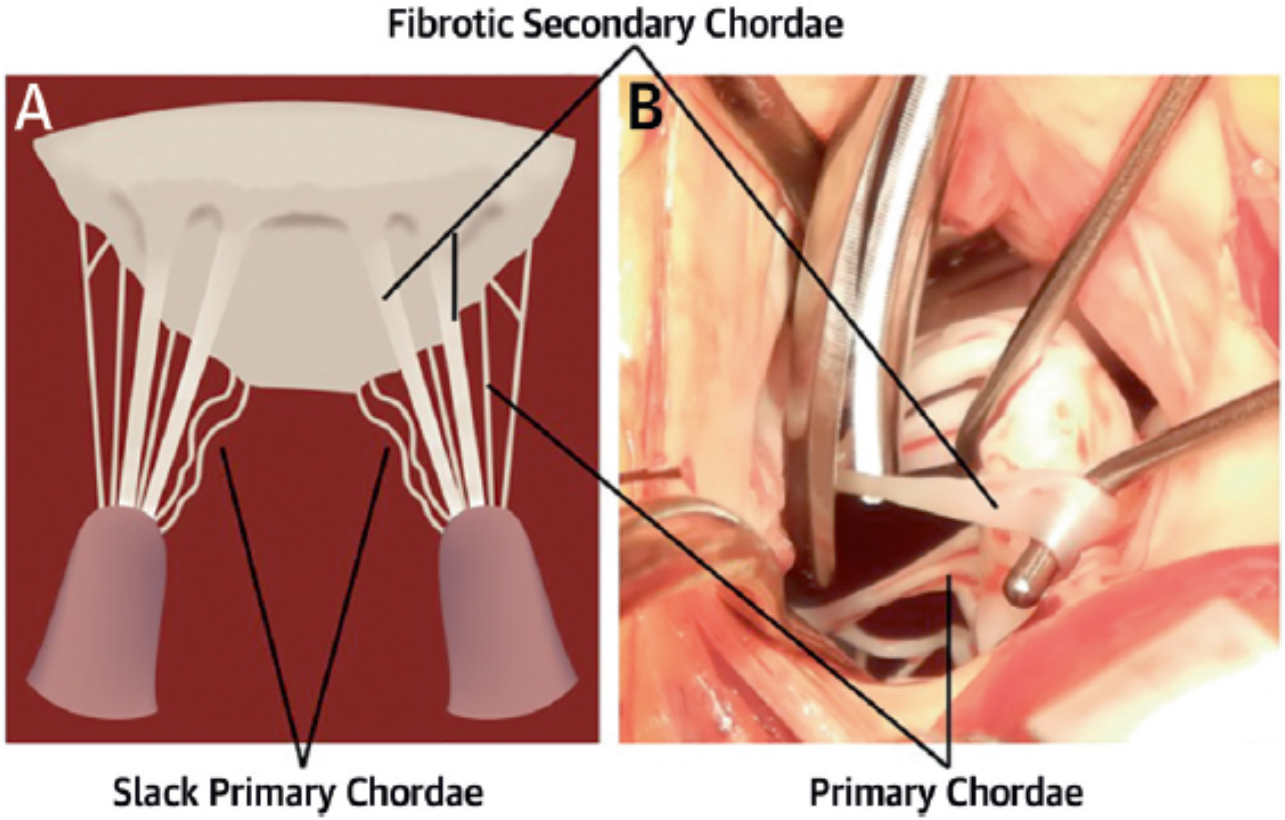
HOCM: Tailored Extended Myectomy

One-piece technique



Transaortic Chordal Cutting

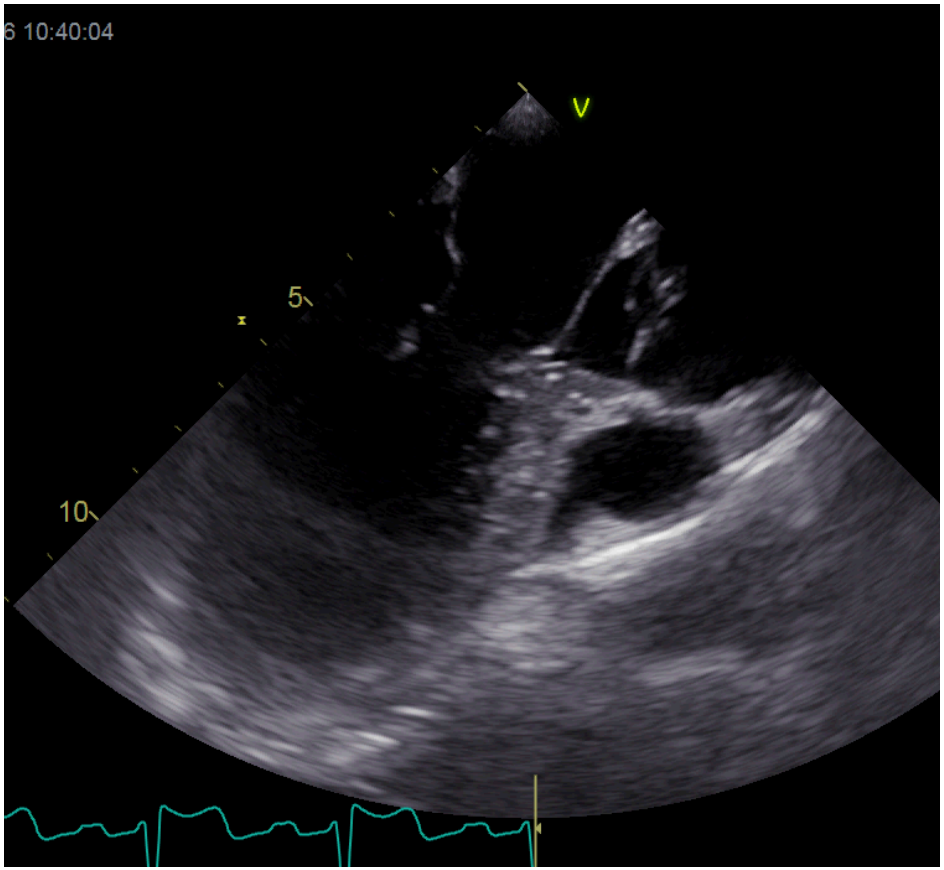
Mitral Valve Repair for Obstructive Hypertrophic Cardiomyopathy With Mild Septal Hypertrophy

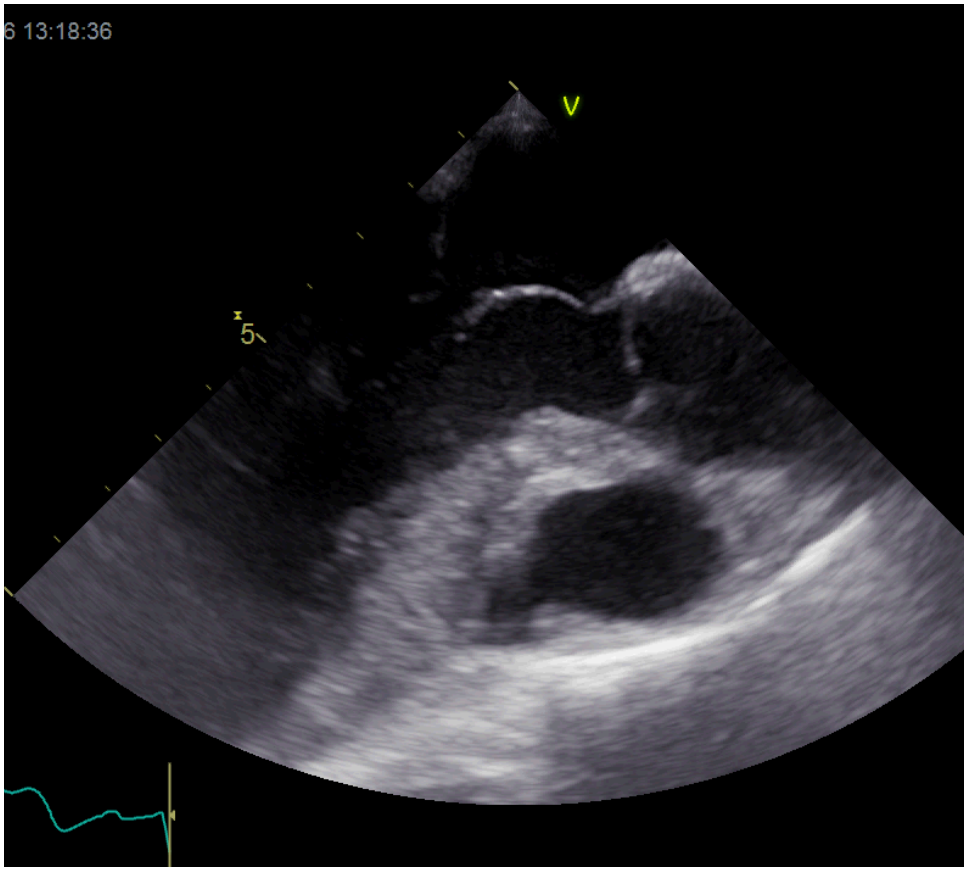


P. Ferrazzi, MD, P. Spirito, MD et al. JACC VOL. 66, NO. 15, 2015

Transaortic Chordal Cutting

TEE Echo before and after myectomy and MV chordal cutting

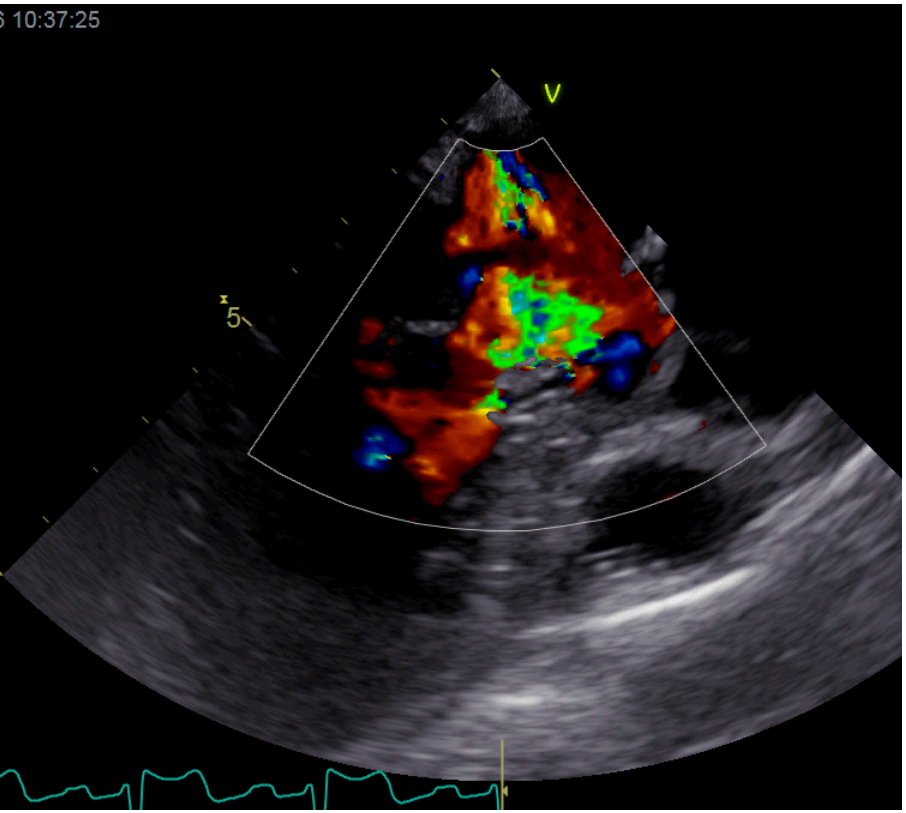


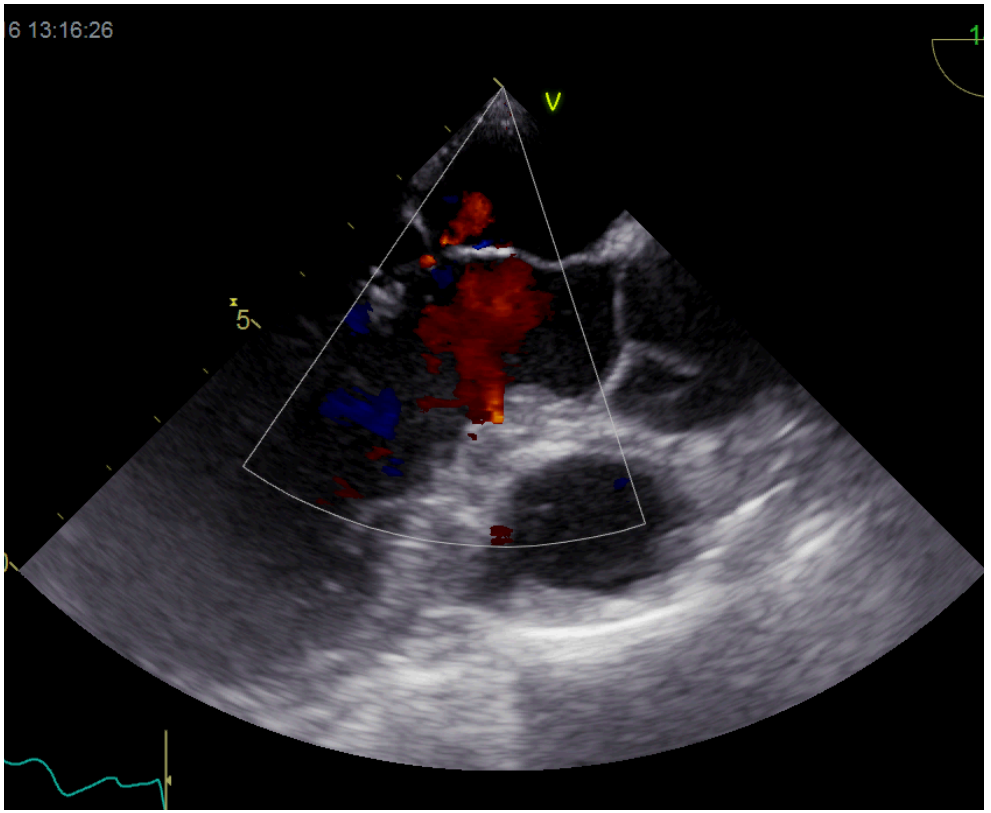


Pre-operative

Post-operative

TEE Echo before and after myectomy and MV chordal cutting

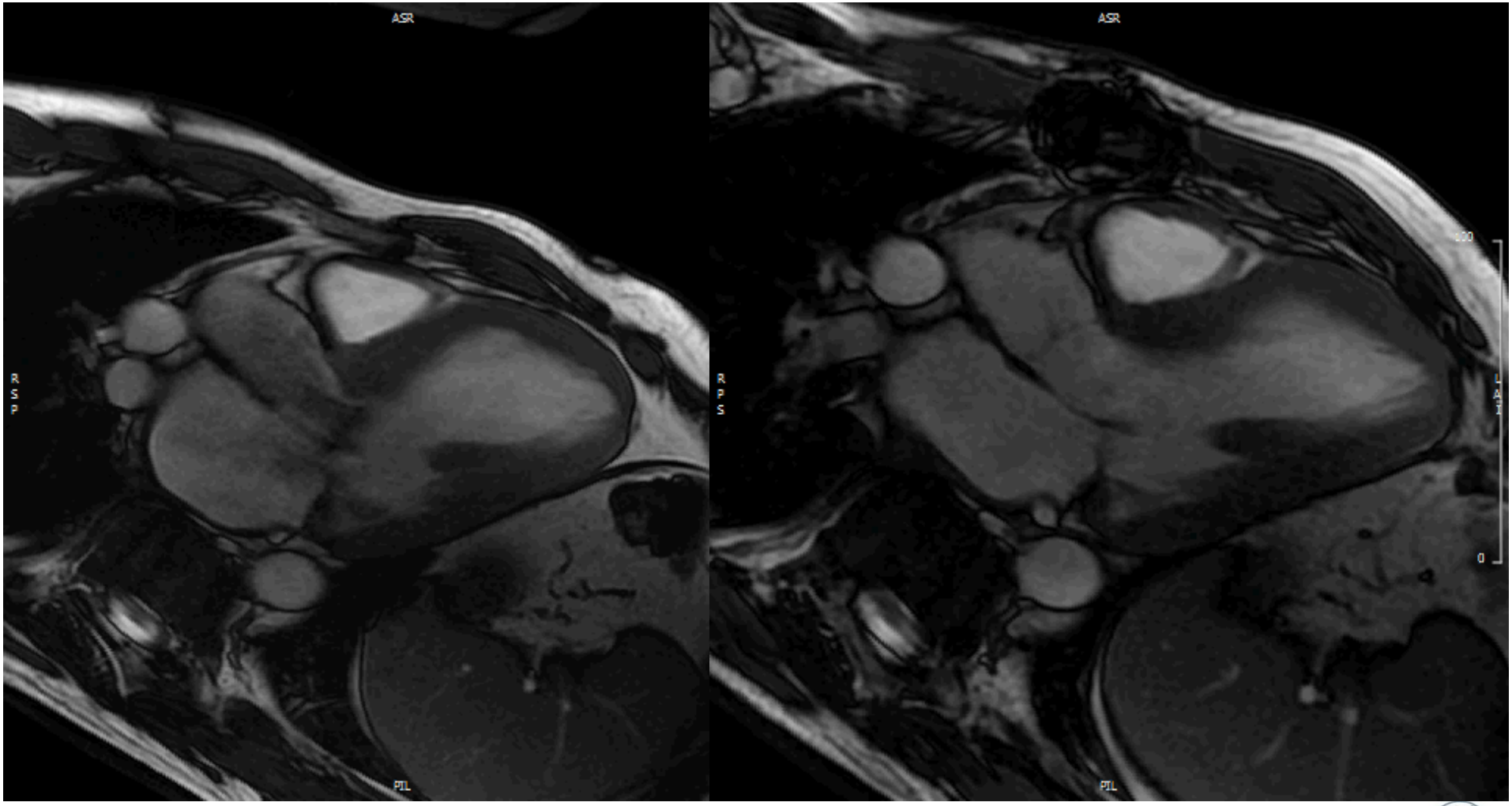




Pre-operative

Post-operative

MRI before and after myectomy associated with resection of secondary MV chordae



Pre-operative

Post-operative

Conclusions

- It is recommended that septal reduction therapies be performed by experienced operators, working as part of a multidisciplinary team expert in the management of HCM

  (ACCF/AHA guidelines HCM Circulation 2011; ESC guidelines HCM 2014)

- Alcohol septal ablation should not be done in patients with HCM who are less than 21 years of age and is discouraged in adults less than 40 years of age.

  (ACCF/AHA guidelines HCM Circulation 2011; ESC guidelines HCM 2014)

- HOCM is an heterogeneous disease, requiring surgical tailored approach, guided by multi-imaging studies

- Surgical transaortic approach allows:
  - ✓ Extended myectomy
  - ✓ Papillary muscle mobilization
  - ✓ Secondary chordal cutting
  - ✓ Relief of midventricular obstruction