

## **C95. Echo Based Classification Of The Mitral Valve Pathology With Relevance To Valve Repair**

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**OBJECTIVES:** The Carpentier classification of mitral valve pathology, although in common use, was developed prior to the introduction of intraoperative transesophageal echocardiography (TEE). A more comprehensive TEE based classification to address lesion specific repair is proposed.

**METHODS:** Four hundred consecutive cases underwent valve repair with a detailed assessment of mitral valve pathology using intraoperative multiplane TEE and surgical inspection. The valve repair techniques were individualized on basis of echocardiographic and surgical findings.

**RESULTS:** A new TEE based comprehensive classification is offered expanding on framework of the Carpentier approach.

Type I – Normal valve motion

- A. Perforation
- B. Congenital cleft
- C. Dilated annulus without systolic tethering

Type II – Valve Prolapse

- A. Flail segment with eccentric jet
- B. Bileaflet billowing with central jet
- C. Bileaflet billowing with more pronounced segmental prolapse with central and eccentric jets

Type III – Restricted Valve Motion

- A. Systolic and diastolic restriction (e.g. rheumatic)
- B. Symmetric systolic restriction involving both leaflets (central jet)
- C. Asymmetric systolic restriction involving leaflet segment with attachment to ischemic papillary muscle with override of normally moving leaflet (eccentric jet)

Type IV – Systolic Anterior Motion (SAM) of the mitral valve with posterolateral jet

Type V – Hybrid Motions

- A. Systolic restriction of posterior leaflet with prolapsing flail anterior leaflet
- B. SAM of anterior leaflet and prolapse of posterior leaflet

**CONCLUSIONS:** This new TEE based classification provides a more accurate delineation of mitral valve pathology resulting in successful implementation of lesion specific repair techniques with 96 percent rate of success in these 400 consecutive patients.