

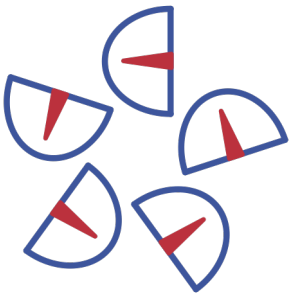
CLAP Snaps

5 Key Messages

Mitral Valve

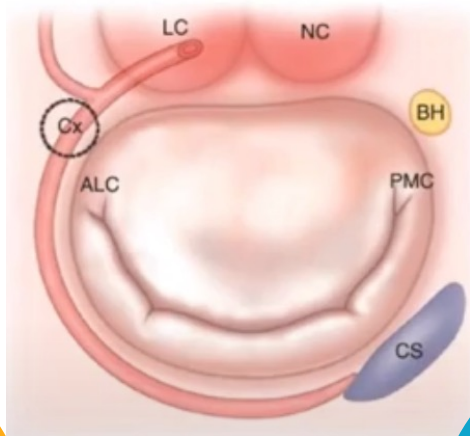
Thursday 25th October 2021

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Anatomy and Pathophysiology of the MV

Miss Sara Volpi
(St Bartholomew's Hospital)



See more of Sara's great images in the recorded presentation in our Members' area



Orifice and Annulus

Well defined zone between atrium and base of cusps

Approximately circular, almost vertical in diastole



Cusps

Continuous veil around the circumference of the annulus

Carpentier classification A1, A2, A3 and P1, P2, P3



Cordae Tendinae

Primary cords from free edges to pap muscles provide variable tension throughout cardiac cycle



Papillary Muscles

ALPM has single head, supply = LCx

PMPM multiple heads, supplied by RCA



Neighbouring Structures

Aortic LCC & NCC

LCX

Coronary sinus

Bundle of His

(See diagram)

TOE Assessment of the Mitral Valve

Dr Michiel du Toit (St Bartholomew's Hospital)



ME four-chamber

Mid Oesophageal 4 Chamber

0-20°

At 15°, A3 segments on screen left, P1 on right

At 0°, A2 on left, P2 on right



ME two-chamber

Mid Oesophageal 2 Chamber

90°

A2 and A1 to the right of the screen

P3 on left of the screen



ME LAX

Mid Oesophageal Long Axis

120°

Perpendicular to coaptation line with A2 on left, P2 on right

Turn probe to pt's RHS = A3, P3

Turn probe to pt's LHS = A1, P1

Measure MR jet velocities, VC, interpeak distance



TG basal SAX

Transgastric Basal Short Axis

0°

A1, P1 far field and towards screen right

A3, P3 near field and towards screen left

Helpful to locate origin of MR



TG two-chamber

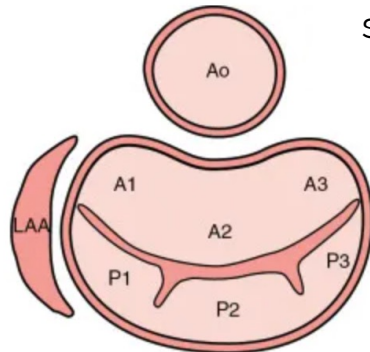
Transgastric 2 Chamber

90°

Posteromedial papillary muscle in near field

Anterolateral papillary muscle in far field

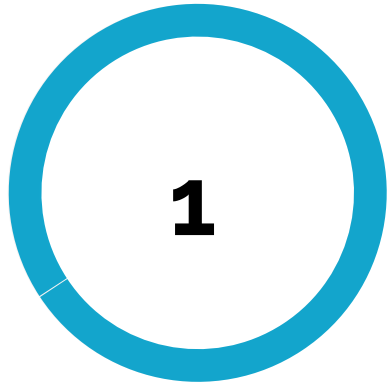
This view to assess subvalvular apparatus and chamber dilatation



Post-Operative Care for Mitral Surgery

Dr Giuseppe Bozzetti

(Golden Jubilee National Hospital,
Glasgow)



Consider assessing LV strain intra-op to help you select the best drug for the job
– dobutamine or milrinone

Choose your drugs wisely



The LCx runs very close to the mitral annulus and may be caught by sutures or compressed by a haematoma – consider LCx injury post-op and correlate with echo

Remember the Circumflex



Rare but disastrous complication of MV surgery, associated with mitral annular calcification

Emergency pericardial patch repair

LV Rupture



High suspicion for systolic anterior motion if unstable post-op

Risk factor

AL/PL ratio <1.3

PML >15 mm

AML >27 mm

Distance between coaptation and interventricular septum (C-sept) <25 mm

Small angle between the aortic and mitral annular planes (<120°)

Small ventricle (<36 mm)

Think SAM!



Stop Inotropes
Optimise preload
Consider beta-blockers
Vasoconstrictors for hypotension

Manage SAM

Robotic Mitral Valve Surgery

Mr Paul Modi
(Liverpool Heart
and Chest Hospital)

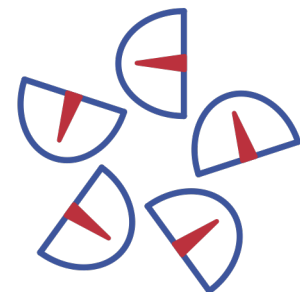
01 **Decide what matters** Patient Safety > Best Quality of Repair > Least Invasive Approach

02 **Mini-mitral is the fall back** Surgeon needs to be an expert in mini-mitral surgery before considering robotics: the fall-back approach is mini-mitral and only if this fails to consider sternotomy

03 **Teamwork** The entire team (surgeons, anaesthetists, perfusionists, scrub staff, ODPs) need to be involved in the development of the team and then kept together to allow optimum performance and development

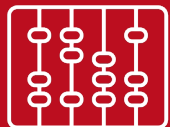
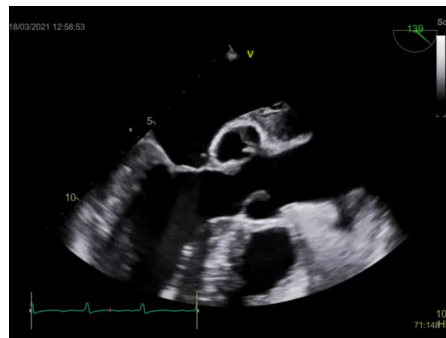
04 **Good for patients** Robotic MV Surgery allows patients to go home on Day 2 post-op, and have much smaller incisions (and of course NO sternotomy)

05 **Bypass access** Arterial bypass cannula and cardioplegia via combined line in femoral artery up to aortic sinus. Venous drainage cannula placed in RIJV by anaesthetist (alongside CVC), removed and closed with purse string by anaesthetist in theatre



Anaesthetic Considerations For Endocarditis

Dr Liz Ogilvie (St Bartholomew's Hospital)



Dukes Criteria

Pathological Criteria

Positive histology or culture from pathological material obtained at autopsy or cardiac surgery

Major Criteria

Two positive blood cultures with typical organism

Persistent bacteraemia

Positive serology for Coxiella

Positive echocardiogram

- 1) Vegetation OR
- 2) Abscess OR
- 3) New regurgitation OR
- 4) Dehiscence of prosthetic valves

Minor Criteria

Predisposing heart disease or IVDA

Fever > 38%

Immunological phenomena

Vascular Phenomena

Microbiological evidence not fitting major criteria



Echo Appearance

Vegetations

Perivalvular Aneurysm

New dehiscence of prosthetic valve



Changing Microbiology

Staph is now becoming more prevalent than strep as a causative organism for IE



Multi-System Disorder

Needs multidisciplinary approach

Consider a vascath intra-op: may have stormy post-op period



Refractory Vasoplegia

...May be an issue if septic shower post op
-norad
-vasopressin
-corticosteroids
-methylene blue

Surgical Considerations for Endocarditis

Mr Gianluca Lucchese (St Thomas's Hospital)



1

Increasing Case Numbers

Relatively higher numbers of valves including TAVI

IVDU

More intra-cardiac devices being implanted

2

When to Operate?

Healed IE has a better postoperative prognosis than active IE

If the patient is stable and does not need immediate surgery, the procedure to repair/replace a damaged valve can wait

3

Which Procedure?

Pt demographics and extent of tissue damage determine type of valve implanted

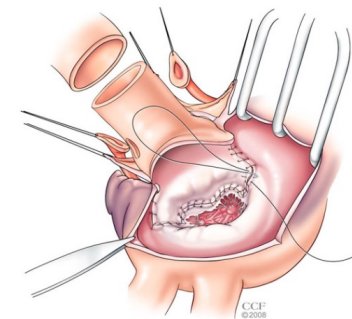
Repair or replace? Case-by-case basis but vegetectomy is NOT supported by evidence
[no way to tell if all microscopic vegetations have been excised]

4

Simple or Complex Procedure?

Disruption of the aorto-mitral continuity may need a complex op:

Commando procedure: bovine pericardial patch aortic and mitral valves



5

Instability

MR and especially acute AR can be very challenging to manage

Severe pulmonary oedema

Potential for acute RV dysfunction and severe tricuspid regurgitation