

# Cardiology

Mitral Regurgitation: Part I

Apex → Axilla

Howard J. Sachs, MD

[www.12DaysinMarch.com](http://www.12DaysinMarch.com)

E-mail: [Howard@12daysinmarch.com](mailto:Howard@12daysinmarch.com)

the Sounds: #4

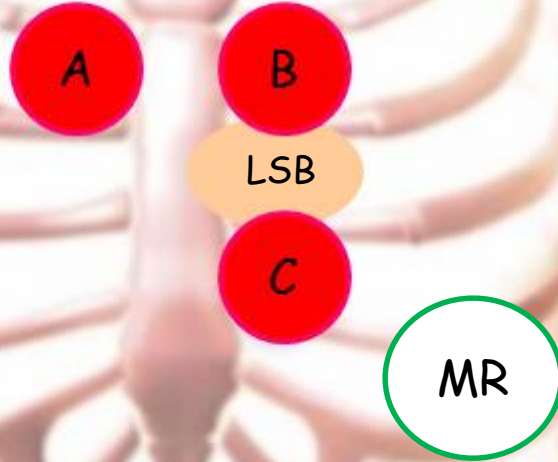


Location: Apex

Systolic: harsh

Maneuvers: NA

Murmur: → axilla



'...*systolic murmur* heard best at the *apex*'

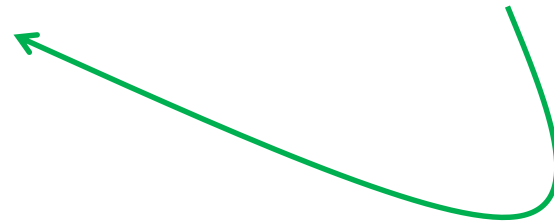
# The Valves

Mitral  
(**apex**, S1)

Stenosis  
(diastolic, opening snap)

Regurgitation  
(systolic → axilla)

Prolapse  
(midsystolic click, maneuvers)



## Mitral Regurgitation

Location: Apex → Axilla

Systolic: holosystolic

Quality: *LV ejection* → loud, harsh, hi pitch

### Key associations:

1. Papillary mm rupture (MΦ phase, d 5-10)
2. Dilated CM (any cause)
  - *Acute Rheumatic Fever*
3. Endocarditis (SBE)

## Mitral Regurgitation

Location: Apex → Axilla

Systolic: holosystolic

Quality: LV ejection → loud, harsh, hi pitch

### Key associations:

1. Papillary mm rupture (MΦ phase, d 5-10)
2. Dilated CM (any cause)
  - *Acute Rheumatic Fever*
3. Endocarditis

### Choose the Mainstay of Management?

1. Preload reduction
2. Afterload reduction
3. Chronotropic reduction
4. Inotropic agents

## Mitral Regurgitation

Location: Apex → Axilla

Systolic: holosystolic

Quality: LV ejection → loud, harsh, hi pitch

### Key associations:

1. Papillary mm rupture (MΦ phase, d 5-10)
2. Dilated CM (any cause)
  - *Acute Rheumatic Fever*
3. Endocarditis

### Choose the Mainstay of Management?

1. Preload reduction
2. **Afterload reduction** (with ACE inhibitor)
  - ~ **Increases the forward stroke volume** ~
3. Chronotropic reduction
4. Inotropic agents

## Mitral Regurgitation

Location: Apex → Axilla

Systolic: holosystolic

Quality: LV ejection → loud, harsh, hi pitch

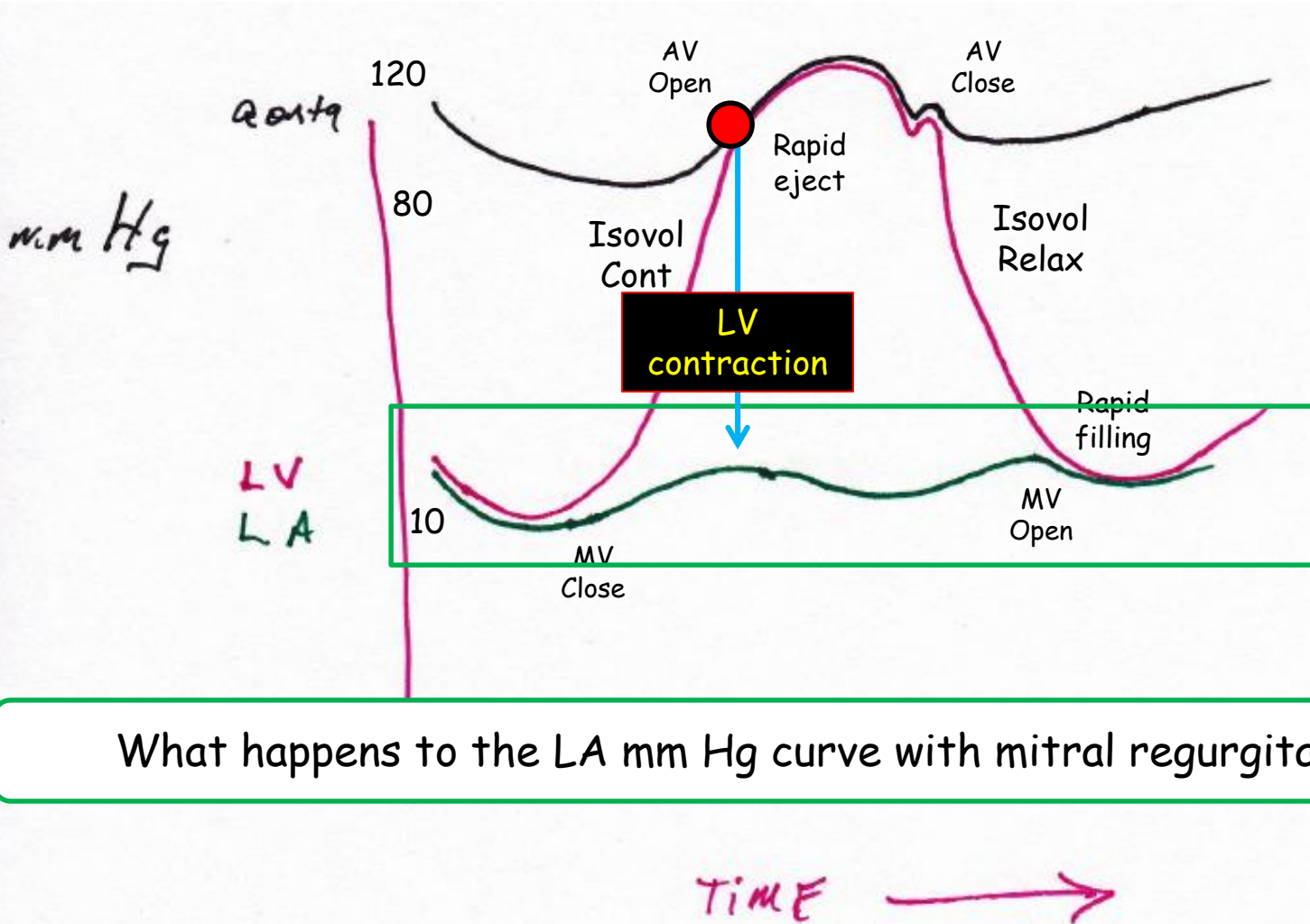
### Key associations:

1. Papillary mm rupture (MΦ phase, d 5-10)
2. Dilated CM (any cause)
  - *Acute Rheumatic Fever*
3. Endocarditis

### Choose the Mainstay of Management?

1. Isosorbide dinitrate
2. Lisinopril
3. Metoprolol
4. Digoxin

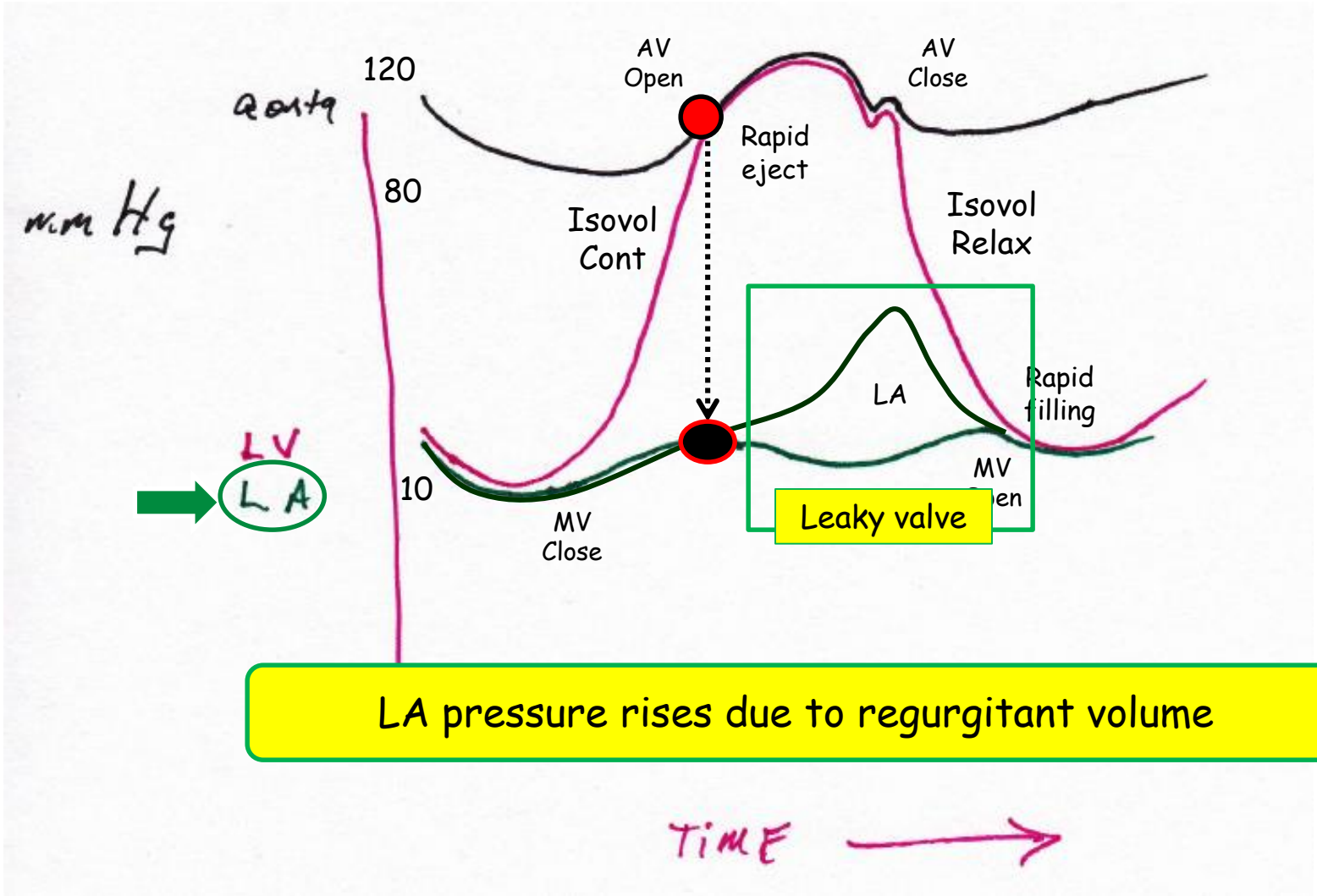
# Mitral Regurgitation: Hemodynamics



What happens to the LA mm Hg curve with mitral regurgitation?



# Mitral Regurgitation: Hemodynamics

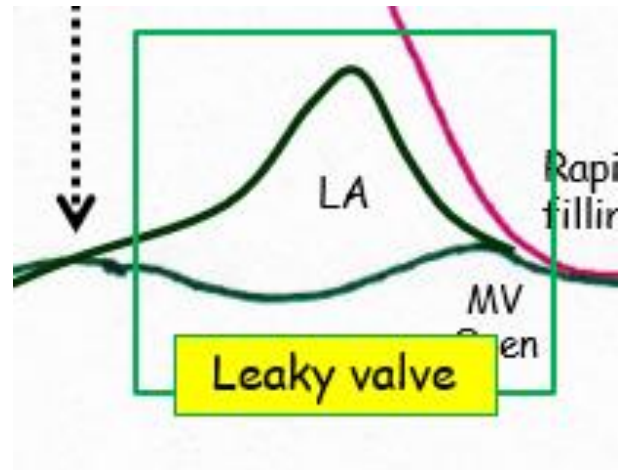


LA pressure rises due to regurgitant volume

TIME →

# Mitral Regurgitation: Hemodynamics

*Regurg, Bro...  
it's heading back  
into the atrium.*

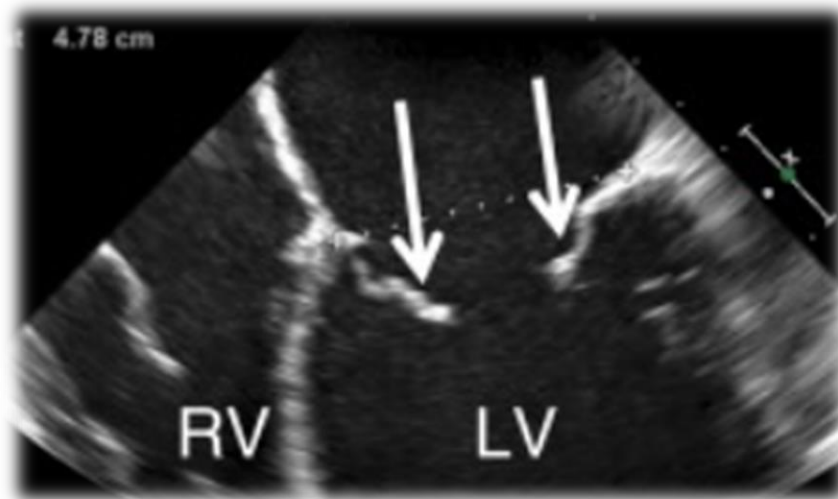


Afterload Reduction and Regurgitation:  
Make the blood go forward, not backward

## Mitral Regurgitation and Common Step One Scenarios

### I. Chamber (annulus) dilation (DCM, ARF)

Patient presents with shortness of breath. PE: II/VI systolic murmur heard at apex...



## Mitral Regurgitation and Common Step One Scenarios

### I. Chamber (annulus) dilation (DCM, ARF)

Patient presents with shortness of breath. PE: II/VI systolic murmur heard at apex...

'...they report fleeting joint pain and skin rash...'

'...they had MI 5 days ago...'

# Mitral Regurgitation and Common Step One Scenarios

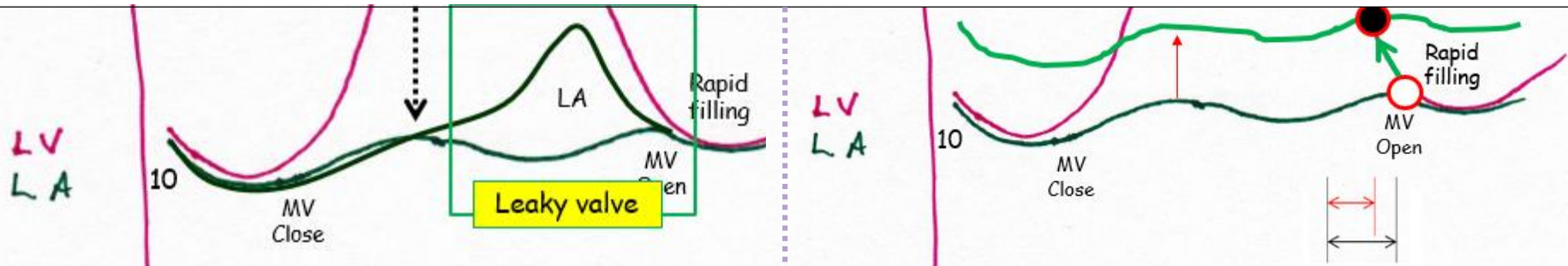
## I. Chamber (annulus) dilation (DCM, ARF)

Patient presents with shortness of breath. PE: II/VI systolic murmur heard at apex...

'...they report fleeting joint pain and skin rash...'

'...they had MI 5 days ago...'

Select the LA pressure curve seen in this patient?



*Regurgitation*

*Stenosis*

## Mitral Regurgitation and Common Step One Scenarios

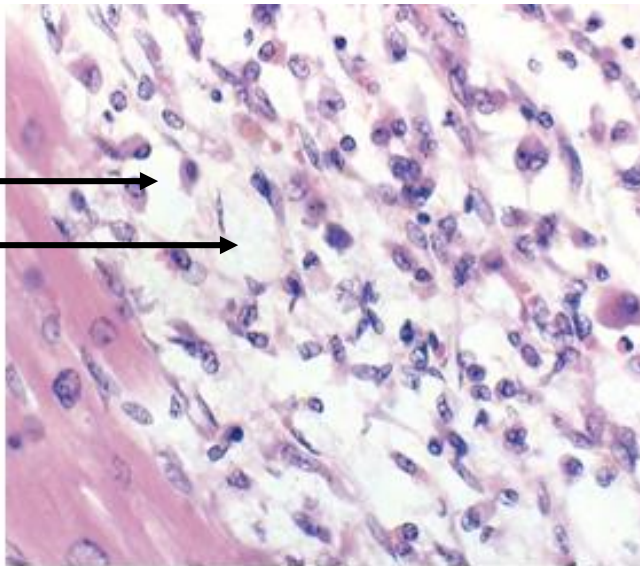
### II. Post AWMi (day 5-10)

Patient is recovering well

Develops acute SOB with s/s of CHF (no CP).

**New murmur heard** radiating to the axilla

Answer: Papillary mm (or chordae) rupture



*Gk: phage – 'to eat'*

## Mitral Regurgitation and Common Step One Scenarios

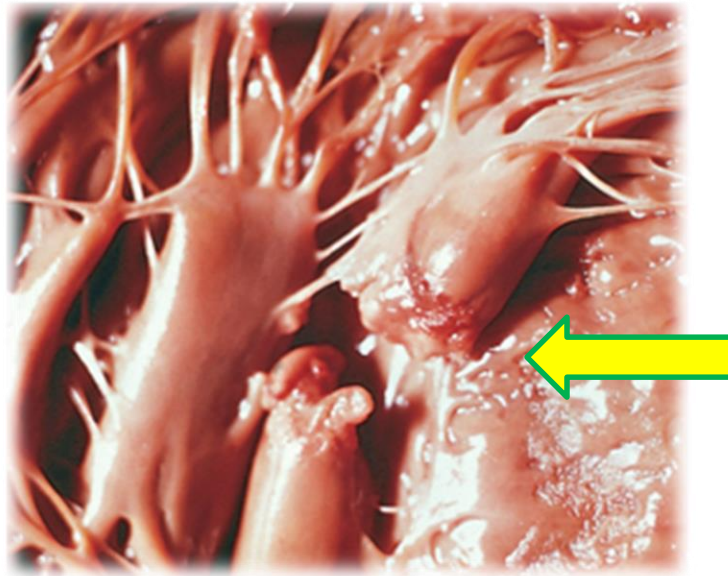
### II. Post AWMi (day 5-10)

Patient is recovering well

Develops acute SOB with s/s of CHF (no CP).

**New murmur heard** radiating to the axilla

Answer: Papillary mm (or chordae) rupture



Physical Exam, Histopathology and Pathophysiology

## Scenario III. Vegetations

Acute  
Infectious  
Endocarditis

Subacute  
Bacterial  
Endocarditis

Nonbacterial Thrombotic  
Endocarditis (NBTE)



# Cardiology

Mitral Regurgitation: Part I

Apex → Axilla

Howard J. Sachs, MD

[www.12DaysinMarch.com](http://www.12DaysinMarch.com)

E-mail: [Howard@12daysinmarch.com](mailto:Howard@12daysinmarch.com)

the Sounds: #4

