

Case : 76yr / F

- **C.C: Dyspnea on exertion (D; 1 month)**

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PA

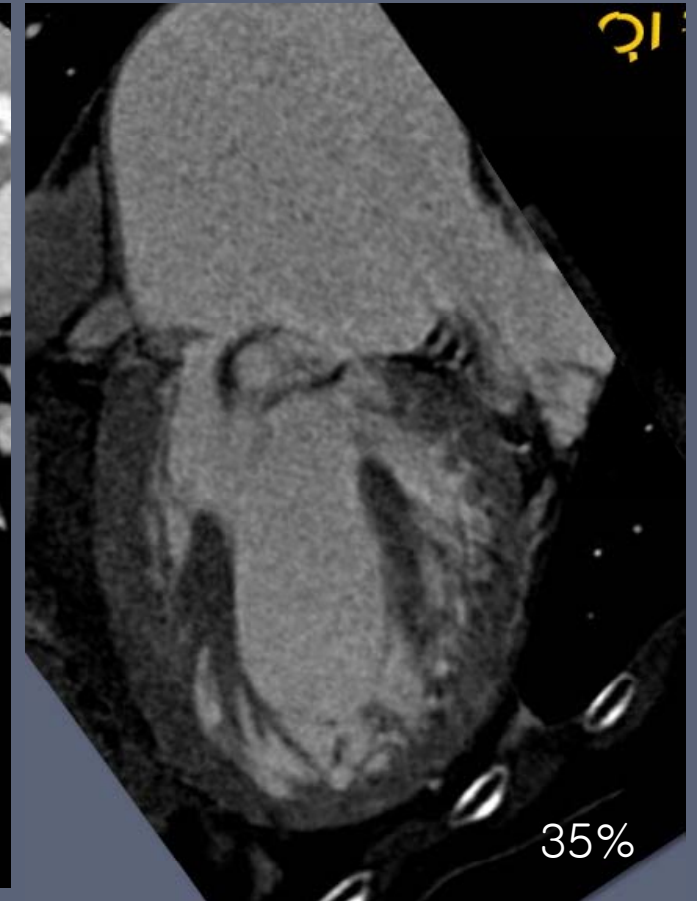




Mid-diastolic phase

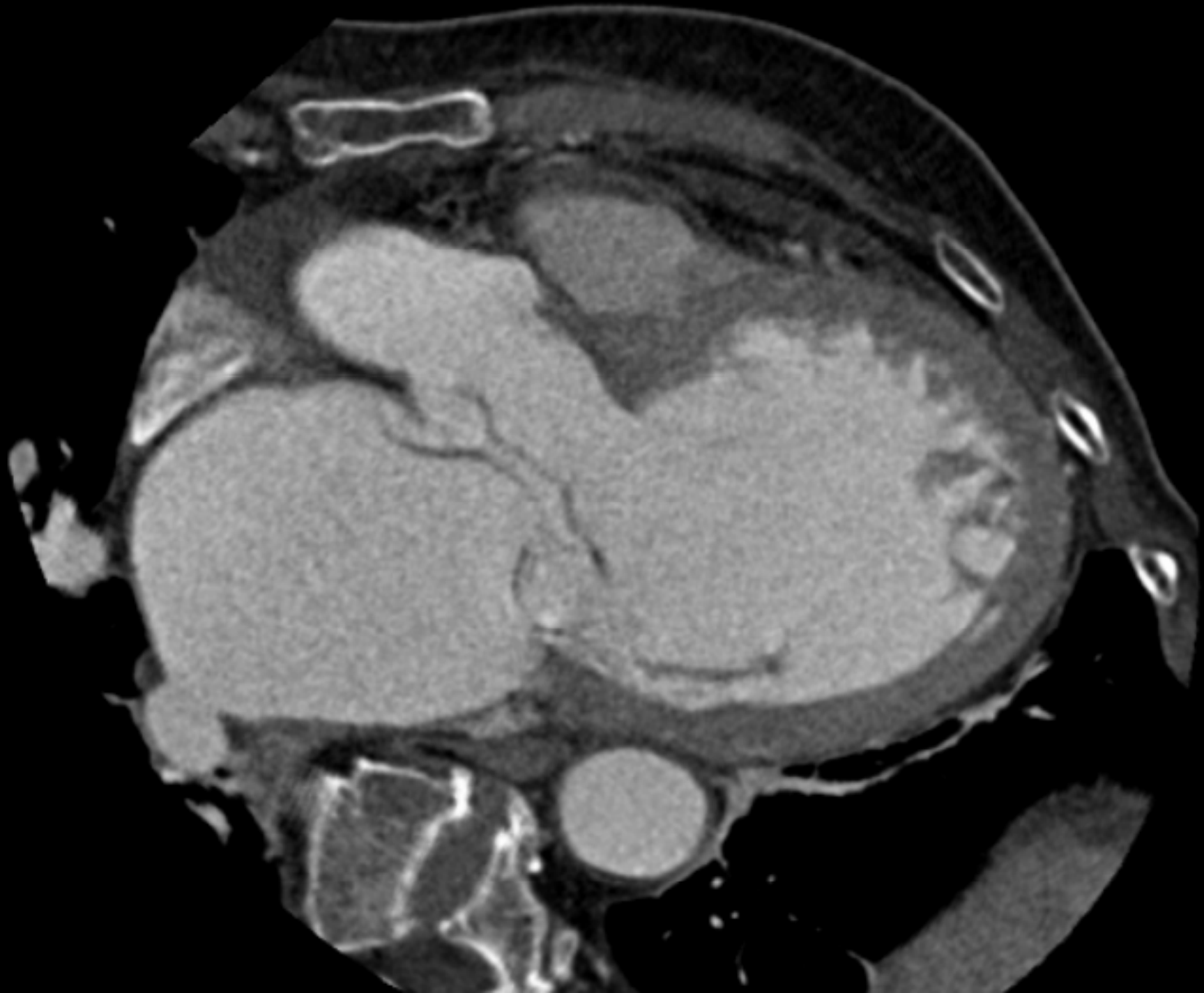


End-systolic phase



Mid-systolic phase

35% mid systolic phase superior



Radiologic findings

- Chest PA;
 - cardiomegaly with LV enlargement
 - left costophrenic angle obliteration
- Cardiac CT;
 - posterior mitral leaflet shows flail motion on serial phase 4-chamber view
 - End-systolic phase shows discontinuity of chorda (arrow), suggesting chorda rupture
 - Mid systolic phase 3-CH view well demonstrated flail leaflet of mitral valve

MV prolapse

- systolic displacement of mitral valve leaflets below the mitral annulus plane of 2 mm or greater toward the left atrium
- 2 types
 - 1) Billowing (bowing of leaflet body) : myxomatous degeneration
 - 2) Flail leaflet (free leaflet edge prolapse) : chordal rupture in the presence of rheumatic disease or by infective endocarditis

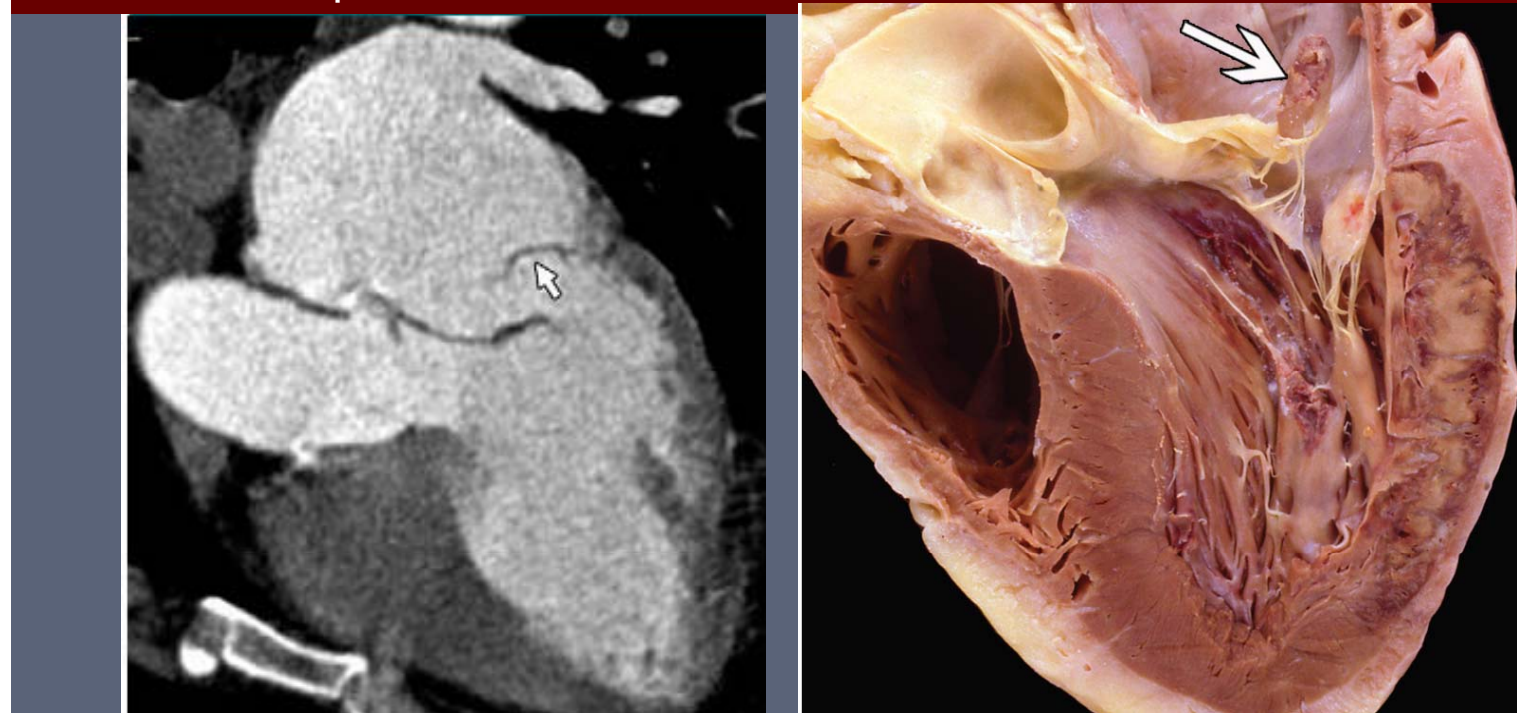
Table 2
Causes and Imaging Findings of Chronic Mitral Regurgitation

Cause	Primary Imaging Features	Associated Imaging Features
Mitral valve prolapse	Systolic bowing of the mitral leaflet (protrusion > 2 mm into the atrium)	Thickened leaflet (> 5 mm), flail leaflet
Flail leaflet	Systolic eversion of the leaflet tip into the atrium	Severe mitral regurgitation
Ischemic cardiomyopathy	Left ventricular wall motion abnormality, left ventricular dilatation, annular dilatation	Late gadolinium enhancement, mural thinning
Hypertrophic obstructive cardiomyopathy	Signal dephasing in the left ventricular outflow tract	Posterior jet of mitral regurgitation

MVP with billowing (bowing of leaflet body) of both leaflets



MVP with flail posterior leaflet



Cardiac CT Angiography for the Diagnosis of MVP

Table 3

Diagnostic Performance of Coronary CT Angiography Compared with TTE for Diagnosis of MVP

CT Plane	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)	Accuracy (%)
Four-CH view	94 (50/53; 85, 98)	90 (53/59; 79, 95)	89 (50/56; 78, 95)	95 (53/56; 85, 98)	92 (103/112; 86, 96)
Three-CH view	81 (43/53; 69, 89)	98 (58/59; 91, 99)	98 (58/59; 88, 99)	85 (58/68; 75, 91)	90 (101/112; 83, 94)
Three- and/or two-CH view	96 (51/53; 87, 99)	93 (55/59; 84, 97)	93 (51/55; 83, 97)	96 (55/57; 88, 99)	95 (106/112; 89, 98)
Either three- or two-CH and four-CH views	91 (48/53; 79, 96)	93 (55/59; 83, 97)	92 (48/52; 81, 97)	92 (55/60; 82, 97)	92 (103/112; 85, 95)
At least one view with positive findings	98 (52/53; 90, 99)	90 (53/59; 80, 96)	90 (52/58; 79, 95)	98 (53/54; 90, 99)	94 (105/112; 88, 97)

Note.—In parentheses, the first two numbers are the numerators and denominators used to calculate the percentages, and the percentages were rounded; the last two numbers are the 95% confidence intervals. Both subtypes of MVP (ie, billowing and flail leaflet) were included in this analysis.