

TIMING ERRORS

Early Deflation

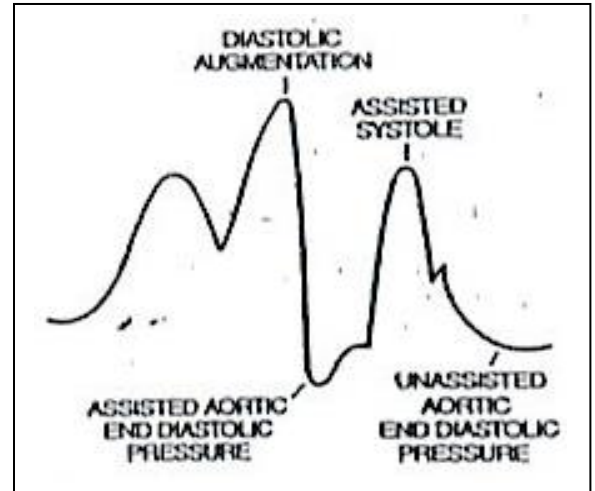
Premature deflation of the IAB during the diastolic phase.

Waveform Characteristics:

- Deflation of IAB is seen as a sharp drop following diastolic augmentation
- Suboptimal diastolic augmentation
- Assisted aortic end diastolic pressure may be equal to or less than the unassisted aortic end diastolic pressure
- Assisted systolic pressure may rise

Physiologic Effects:

- Sub-optimal coronary perfusion
- Potential for retrograde coronary and carotid blood flow
- Angina may occur as a result of retrograde coronary blood flow
- Sub-optimal afterload reduction
- Increased MVO₂ demand



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Late Deflation

Waveform Characteristics:

- Assisted aortic end-diastolic pressure may be equal to or greater than the unassisted aortic end diastolic pressure
- Rate of rise of assisted systole is prolonged
- Diastolic augmentation may appear widened

Physiologic Effects:

- Afterload reduction is essentially absent
- Increased MVO₂ consumption due to the left ventricle ejecting against a greater resistance and a prolonged isovolumetric contraction phase
- IAB may impede left ventricular ejection and increase the afterload

