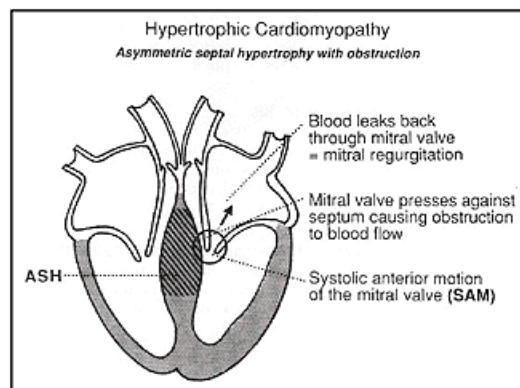


HOCM Anesthesia Management

Anesthetic Pearls: Anesthetic Implications and Management of HOCM

- **HOCM** (hypertrophic obstructive cardiomyopathy) or **IHSS** (idiopathic hypertrophic subaortic stenosis) results usually from myocardial hypertrophy with greater thickening of the interventricular septum than the free wall of the left ventricle. This pathology may cause left ventricular outflow tract obstruction requiring myomectomy (surgical removal of part of the ventricular septal muscle).

- A “**Venturi-effect**” occurs with extreme ejected velocity flow through the **LVOT** (left ventricular outflow tract) causing **SAM** (systolic anterior motion) of the mitral valve. The SAM causes obstruction of the LVOT leading to cardiac output compromise.



- **Anesthetic Goals:** Use maneuvers that maintain or increase LV chamber size thereby decreasing the LVOT obstruction:

- A. ↑ Preload
- B. ↑ Afterload (or maintain afterload, do not let SVR drop)
- C. ↓ Myocardial contractility

- **Anesthetic Management Points:**

1. Use **Volume** (↑ preload) & vasoconstrictors (Phenylephrine) to treat hypotension
2. **Avoid Catecholamines** (ephedrine, epi, nor-epi)
3. Myocardial depression with volatile anesthetic ↓ LVOT obstruction
4. Avoid vasodilators (NTP, decrease SVR) and venodilators (NTG, decrease preload)
5. Beta blockade with esmolol will ↓ LVOT obstruction by causing myocardial depression and decreasing heart rate allowing increased filling (↑ size & preload) of LV

Events That Increase Outflow Obstruction	Events That Decrease Outflow Obstruction
Increased myocardial contractility Beta stimulation (catecholamines) Digitalis Tachycardia	Decreased myocardial contractility Beta blockade (propranolol, esmolol) Volatile anesthetics (halothane) Calcium entry blockers
Decreased preload Hypovolemia Vasodilators (nitroglycerin, nitroprusside) Tachycardia Positive-pressure ventilation	Increased preload Hypervolemia Bradycardia
Decreased afterload Hypotension Hypovolemia Vasodilators	Increased afterload Alpha stimulation (phenylephrine) Hypervolemia