NOVEL USE OF TEMPORARY MEHANICAL CIRCULATORY SUPPORT FOR COMBINED BARIATRIC SURGERY & CHOLECYSTECTOMY

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Case Report

A 54-year-old male with heart failure with reduced ejection fraction (HFrEF) secondary to ischemic cardiomyopathy (ICM) and a BMI of 43 required a decrease in BMI for heart transplant eligibility. When all weight loss efforts failed, he was recommended to undergo elective bariatric surgery and cholecystectomy. The patient was considered high risk due to ICM with severely reduced left ventricle dysfunction at ACC stage C and NHYA class III. The patient's preoperative hemodynamics failed to improve with Milrinone support, hypothesized to be due to worsening ischemia caused by existing CAD resulting in failure to meet the increased oxygen demand with inotropy. An Impella 5.5® (Danvers, Massachusetts, USA) device was placed via an axillary approach for hemodynamic support. Bariatric surgery was successful with Impella 5.5® in place, and the device was removed four days POD with subsequent hospital discharge eight days POD.

Facts of case	
Proposed Surgery	▪ Laparoscopic Sleeve Gastrectomy ▪ Laparoscopic Cholecystectomy
Surgical Risk Factors	▪ Severely reduced LV dysfunction ▪ Ischemic Cardiomyopathy with LVEF of 24%. LVEDD 7.2 cm. ▪ ACC/AHA Stage C NYHA Class III
Baseline Hemodynamics	▪ RA: 3, PA: 70/27/44, PCWP: 22 ▪ SVO2: 65%, FICK CO: 5.4 L/min ▪ CI: 2.06 L/min/m2
Pre-Impella Hemodynamics on Inotropic Support	▪ RA: 21, PA: 48/36/41, PCWP: Not Remeasured. ▪ SVO2: -, FICK CO: 4.5 L/min ▪ CI: 1.7 L/min/m2
Pre-Surgical Therapy	• Impella 5.5® ▪ Swan-Ganz Hemodynamic Catheter
Complications	▪ Hypertension Requiring Nicardipine infusion ▪ Hyperkalemia

Discussion

The elective use of temporary mechanical circulatory support devices (MCS) is a promising innovative approach for providing hemodynamic support for patients undergoing non-cardiac surgical procedures. The listed case serves as the first documented example of successful use of temporary MCS in elective, outpatient, combined laparoscopic sleeve gastrectomy and laparoscopic cholecystectomy.

Contact Information

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