

CASE STUDY:

Minimally Invasive Case Study

MVA Trauma – Splenectomy

INTRODUCTION

Minimally invasive monitoring is helpful in the guidance of rapid resuscitation of trauma patients. Usual indicators of preload such as CVP may be inconclusive or misleading indicator of volume needs. The use of stroke volume index (SVI) and stroke volume variation (SVV) are helpful in determining the appropriateness and timing of volume resuscitation.

Clinical Events

A 74-year-old female, 5'2", 70 kg

Medical History:

Chronic atrial fibrillation treated with anticoagulant, hypertension under control with treatment, and osteoarthritis

CASE NOTES

Medications; Lipitor 10mg QD, Atenolol 50mg QD, Amitriptyline 25 mg HS, Lanoxin .25 mg QD, Coumadin 3mg QD, Glucosimine daily

This elderly woman's car went off the road at high speed for unknown reasons and became airborne. Presented to emergency department awake and alert, c/o nausea, pain with deep inspiration, complaining of left sided pain as well as abdominal pain, and hypotension refractory to volume resuscitation. Diagnosed with ruptured spleen and prepared patient for surgery. Patient is of significant surgical risk for death secondary to her current injuries and history of anticoagulation. ASA class 3. Patient typed and

crossed for 4 units of packed red blood cells (PRBC) along with fresh frozen plasma (FFP).

Patient underwent general anesthesia with rapid sequence induction for an emergent splenectomy. Intubated with a number 7 ETT, right radial arterial line started for frequent laboratory samples, continuous arterial pressure monitoring and continuous cardiac output monitoring using the Edwards FloTrac sensor and Edwards Vigileo monitor. Output: Blood loss estimated at 1500cc, urine output 2000. Input: 4 units PRBC, 4 units of FFP, 450cc Autotransfusion blood, NaCl 4 liters, and Hespan 1 liter. Patient underwent successful procedure, extubated and sent to recovery stable and awake.



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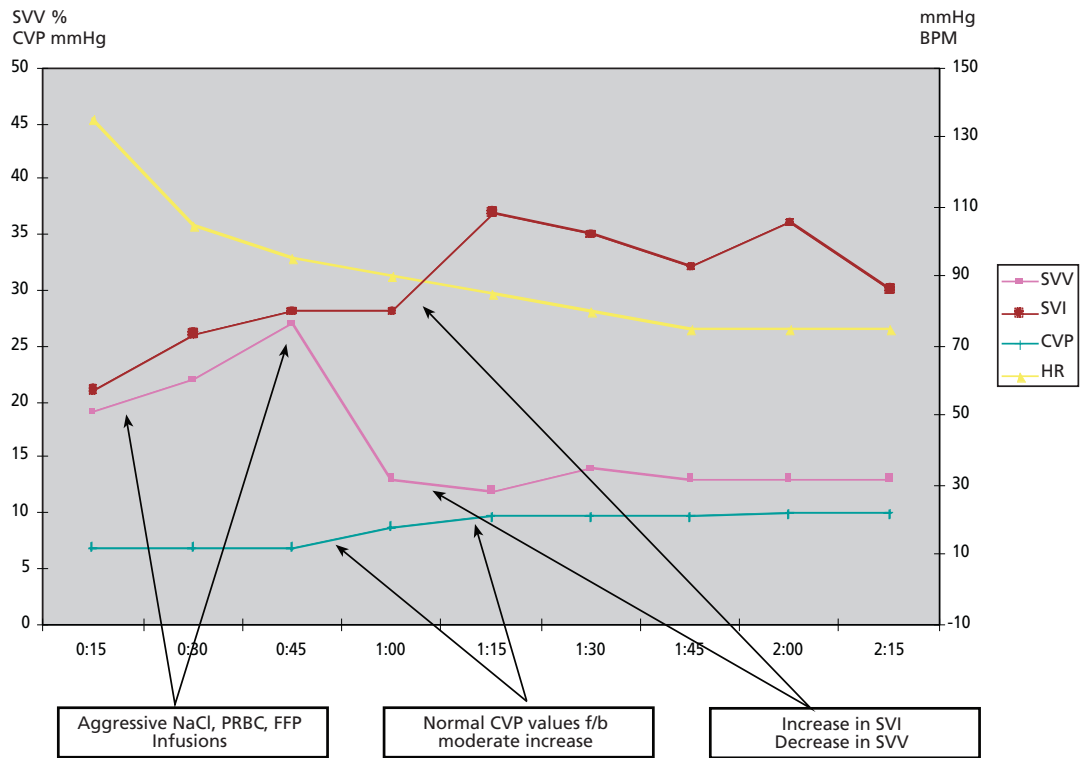


Figure 1

DISCUSSION

Use of minimally invasive monitoring allowed for continued and aggressive volume resuscitation guided by Stroke Volume Index and Stroke Volume Variation when CVP values indicated normal filling pressures. Use of SVV and SVI gave confidence in direction and magnitude of resuscitation which resulted in a successful outcome.

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