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hTEE™ guides resuscitation of patient with septic shock and ARDS post-MVA

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Case Report

A 72-year old male presented with multiple orthopedic injuries post-MVA. Given the nature and the severity of the injuries, the patient underwent several orthopedic interventions, as well as a tracheostomy.

The patient was discharged to a rehabilitation facility for further ventilator weaning. During early rehabilitation, the patient developed anasarca and worsening hypotension with subsequent development of ARDS. He was transferred back to the primary facility for further management.

The patient presented with ARDS secondary from septic shock, requiring multiple vasopressors (neosynephrine, norepinephrine, vasopressin) to support his hypotension. Additionally, a high mean airway pressure was required to sustain adequate oxygenation due to ARDS.

An echocardiogram was ordered to evaluate hypotension. The results demonstrated moderately depressed left ventricular (LV) systolic function (EF 35-40%) with preserved right ventricular (RV) size and function.

The CVP was elevated at 20 mmHg and his physical exam was remarkable for profound anasarca. Diuresis with furosemide was attempted, but the patient failed to respond. The patient became progressively oliguric with concomitant development of acute renal failure. A repeat echocardiogram was attempted, but was nondiagnostic due to body habitus, anasarca, and ventilation.

Given the patient's multiple complex physiological issues, it was decided to place a ClariTEE® probe (ImaCor, Inc., Garden City, NY) to guide volume repletion and vasopressor titration. hTEE™ imaging revealed moderate RV dilation and moderately depressed RV systolic function. These findings were consistent with acute right heart failure due to anasarca and septicemia.

The patient was started on inhaled prostacyclin to reduce RV afterload and epinephrine was initiated, with subsequent titration of vasopressin and neosynephrine. Ongoing hTEE™ imaging demonstrated improvement in RV size and function. The oliguria was resolved and the patient responded to treatment.

In summary, hTEE™ imaging provided critical information on heart function, rapidly changing the medical management in a critically ill patient with ARDS and hypotension.