Bilateral Stellate Ganglion Block As Treatment For Refractory Ventricular Tachycardia

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We present a challenging case of a refractory ventricular arrhythmia treated with bilateral stellate ganglion blockade under ultrasound guidance.

61 year old male with past medical history of coronary artery disease with secondary ischemic cardiomyopathy and congestive heart failure with an ejection fraction of 30%, COPD, type 2 diabetes, and morbid obesity presented for coronary artery bypass grafting. He underwent a five vessel coronary artery bypass grafting and did well intraoperatively with an improved left ventricular ejection fraction of 45%. The following afternoon after surgery he developed multiple short episodes of ventricular tachycardia that initially responded to antiarrhythmics but became refractory requiring cardioversion. The frequency of ventricular arrhythmias continued to increase and became essentially persistent despite cardioversion and antiarrhythmics. Extracorporeal membrane oxygenation was initiated because of hypoperfusion with shock liver and hypoxemia. Arrhythmogenic pressors were weaned off and the swan-ganz catheter was removed. At this point, he had been cardioverted over 180 times in a 24 hour period and failed to improve with pharmacologic management with maximal doses of esmolol, lidocaine, and amiodarone. Given his instability, it would be exceptionally risky to perform another surgery to sympathetically denervate the heart and would only be considered unless it could be shown that it would effective. Regional anesthesia team was consulted to perform a bilateral stellate ganglion block to treat this patient’s drug refractory electrical storm. A bilateral stellate ganglion block was performed under ultrasound guidance as fluoroscopy was not possible on the ICU bed. During the course of the procedure the patient had two episodes of ventricular tachycardia requiring cardioversion. After the block, the frequency of ventricular tachycardia decreased significantly for the duration of the lidocaine. Unfortunately, the patient's comorbidities proved too great and the family elected to pursue comfort measures.

Despite the unfortunate outcome, we show that under right circumstances a bilateral stellate ganglion block can be considered for treatment of refractory ventricular tachycardia secondary to sympathetic storm.