Stellate ganglion radiofrequency – beyond chronic pain management

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Background

The stellate ganglion is a neuronal structure formed by the fusion of the inferior cervical ganglion and the first thoracic ganglion. It is a structure with sympathetic functions.

The Electrical Storm (ES) is a life-threatening syndrome, characterized by recurrent ventricular fibrillation (VF) and ventricular tachycardia (VT). Many times unresponsive to antiarrhythmic drugs, it presents a major clinical challenge.

Case Report

- 70-year-old male – history of myocardial infarction with elevated ST in 2003, 2014 and 2015 → depressed myocardic function
- Implantable Cardioverter Defibrillator (ICD) since July 2015
- Admitted at the Coronary Unit in June 2016 – ES
- Management with lidocaine and phenytoin
- Re-admitted in 24 August with another ES
- Lidocaine as esmolol perfusion were used and ablation treatment was performed without success

•Re-admitted on 8th October with another ES and multiple ICD discharges

•11th October: Pulsated Radiofrequency treatment to the left stellate ganglion was performed, under ecographic control

•3 days after the procedure the patient was discharged to the cardiology ward

•Follow-up remain uneventful

Discussion

The use of ultrasound in critical care suffered a huge technical advance in recent years. Since we do not have to transport the patient and we have a direct view of the structures, safety is improved.

Ventricular arrhythmias management requires a multimodal approach. Sympathetic cardiac neural modulation is one of the treatments used in this situations.

Management of ES with PRF has been previously reported.¹

To our knowledge, this is the first case report of an ultrasound guided technique

References

1. Hayase J, et al. Comparative efficacy of stellate ganglion block with bupivacaine vs pulsed radiofrequency in a patient with refractory ventricular arrhythmias. Journal of Clinical Anesthesia 2016; 31: 162-165