

CASE PRESENTATION

- 26 year old 73 kg patient with heterotaxy syndrome, double inlet left ventricle (DILV), transposition of great arteries (TGA) and interrupted aortic arch (IAA) who underwent a staged palliation with arch reconstruction, resulting in Fontan circulation with a lateral tunnel approach (FIG 1).
- Currently with severely depressed ventricular function (EF 17%), hepatic cirrhosis listed for heart/liver transplant, and epicardial dual chamber pacemaker (sick sinus syndrome)
- Recent recurrent admissions for refractory atrial flutter
- Pacemaker - AAIR mode with 100% atrial pacing, high atrial lead threshold (7.5 V @ 0.52 ms), battery life of < 1 month - new atrial lead and generator needed
- Plan to place a transvenous pacemaker using a pectoralis block with minimal sedation.
- Patient positioned supine with nasal cannula, 2 IVs, radial arterial line and sedated with versed and ketamine
- A 13-6 Hz linear transducer at the level of the 3rd rib, with a superiomedial to inferolateral orientation (FIG 2)
- A 22g Stimuplex needle with an in-plane technique from medial to lateral. Ropivacaine 0.5% 10 ml injected (FIG 3) between pectoralis major & pectoralis minor (pec 1), followed by 20 ml injected between pectoralis minor & serratus anterior (pec 2)

DISCUSSION

- Patients with Fontan circulation face life-long morbidity from elevated systemic venous pressures. Complications include arrhythmias, PLE, thrombosis, hepatic dysfunction and heart failure.
- A classical Fontan (atria-pulmonary connection) or a lateral tunnel approach, (incorporating the right atrium with the inferior vena cava to the pulmonary artery), increases the risk of developing atrial arrhythmias. An increasing number of these complex patients require procedural management of their arrhythmias.
- This case illustrates the successful use of a pectoralis block as the primary anesthetic for high-risk patients with complex congenital heart disease.



