

Vena Cava Versatility



Thomas Maxey, MD

The congenital heart surgeon not uncommonly experiences a persistent left superior vena cava (pLSVC). This relatively common venous anomaly either drains through the coronary sinus into the right atrium (RA) or directs some of the systemic venous return into the left atrium (LA). The congenital surgeon must be skilled and facile with a variety of not only cannulation techniques, but also have the versatility to reroute this systemic return to the RA in association with repair of other congenital heart lesions. There are several described techniques to disconnect and reconnect a pLSVC to either the RA or right superior vena cava by extracardiac procedures. Each technique has advantages as well as limitations and patient-specific factors (age, associated cardiac lesions, need for further operations, etc.) need to be considered. The goals of reimplantation to the RA include a wide, tension-free anastomosis and minimize, if not eliminate foreign patch material. Siddartha et al¹ nicely describe a subtle variation of extracardiac reimplantation of a pLSVC to the right atrium using a broad-based left atrial cuff. As the authors reference, the atrial cuff technique has been described by the Buenos Aires group over a decade ago.² The modification described in this manuscript involves harvesting the entire left atrial appendage in continuity with the mobilized LSVC. Inclusion of the left atrial appendage intuitively creates a longer and broader-based anastomosis with native material. The technique described is relatively simple, likely decreases injury to a pulmonary vein, and meets all the goals of pLSVC reimplantation.

The authors¹ are to be commended for expanding the techniques for pLSVC reimplantation. While the technique satisfies the criteria of a wide, tension-free anastomosis and no foreign patch material, I would caution that wide left atrial resection is not without risk and may not be needed in all cases. The authors report no patch material was needed in the left atrium following the broad-based harvest. As with any left atrial surgery, the pulmonary veins must be clearly identified and avoided. While not mentioned in the manuscript, a cavopulmonary connection is another reasonable option for pLSVC. A cavopulmonary anastomosis of the left SVC meets all the goals of reimplantation (tension-free, ease, autologous material,



Thomas Maxey, MD.

Central Message

Regardless of surgical technique, the goals of reimplantation of pLSVC to the right atrium include a wide, tension-free anastomosis and minimize, if not eliminate foreign patch material. The authors describe a variation of extracardiac reimplantation of a pLSVC to the right atrium using a broad-based left atrial cuff.

no need for cardiac arrest) as well as avoids a retrosternal venous structure, though does result in at least some “pulsatile Glenn” physiology. Siddartha et al harvest technique is creative, simple, and can add another layer of options for the surgeon tasked with pLSVC reimplantation.

REFERENCES

1. Siddartha C, Aggarwal N, Joshi R, et al: Extracardiac rerouting of left superior vena cava to the right atrium. *Semin Thorac Cardiovasc Surg* 31:571–572, 2019
2. Vargas F, Rozembaum J, Lopez R, et al: Surgical approach to left ventricular inflow obstruction due to dilated coronary sinus. *Ann Thorac Surg* 82:191–196, 2006

Levine Children's Hospital, Charlotte, North Carolina

Address reprint requests to Thomas Maxey, MD, Levine Children's Hospital, 1001 Blythe Blvd, Ste 200, Charlotte, NC 28203. E-mail:

thomas.maxey@atriumhealth.org

DOI of original article: <http://dx.doi.org/10.1053/j.semtcvs.2019.04.009>.