

Surgery over stents. New challenges to face.

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Introduction: Complex cases undergo step surgical and percutaneous procedures, including stent deployment. Concerns arise on stent removal at latest surgery. We describe our experience in this issue.

Methods: 111 stents in 90 patients were partial or totally removed at surgery. Univentricular heart was diagnosed in 40 patients. Stents were previously deployed in: ductus (17), right ventricle outflow tract (RVOT, 28), atrial septal defect (ASD, 10), right pulmonary artery (RPA, 13), left pulmonary artery (LPA, 29), inferior vena cava (IVC, 6), superior vena cava (SVC, 5) ascending aorta (AAo, 2) and pulmonary veins (1). Surgical procedures performed: 19 transplants, 11 Fontan, 6 Glenn, 2 comprehensive repair (Norwood + Glenn), 2 Glenn take-down, 17 conduit replacement, 11 Fallot, 7 Rastelli, 2 Ross-Konno, and others (11).

Results: Ten ductal stents were clipped. 29 stents in RVOT, 9 in ASD, 7 in RPA, 14 in the LPA, 7 in IVC, 2 in SVC one in the ascending aorta and one in the pulmonary veins were completely removed. Seven stents in RPA, three in SVC, one in AAo and seventeen in the LPA and two in the RVOT were split and partially retrieved. Handling the stents in ductus, RVOT and ASD was fairly seamless. On the contrary, stent removal in the ductus (for the two comprehensive cases), RPA, LPA, SVC, IVC, aorta or pulmonary veins required short periods of deep hypothermia with circulatory arrest, adding length and morbidity to the procedure.

Conclusions: surgery over stents is increasing in complex, step procedures. Univentricular hearts are most prevalent. Congenital Transplant surgery faces new challenges. Stent removal at the time of surgery may require deep hypothermic circulatory arrest.