Is It Safe To Perform Robotic Approach In Cardiac Surgery With Previous Multiple Redo Sternotomy?

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Introduction :

Redo cardiac surgeries are known to be complicated procedures that contribute to an elevated operative risk. The collective experience in robotic surgery has been limited to low-risk patient. Hence, excluding this group of patients, who can benefit greatly from this technology. We are presenting our experience in redo robotic cardiac surgery.

Methods:

In our institute, 158 patients underwent robotic cardiac surgery, in the period between Feb.2019 till June2021. Out of the total cohort; 12.6% (20 patients) underwent a Robotic Redo cardiac surgery. 1st redo and 2nd redo in 17 and 3 patients, respectively. Thirteen patients (65%) underwent a Redo Mitral valve surgery while the rest underwent a Redo combined Mitral and tricuspid valve surgery. Mean age 44 years, 25% were male. Mean BMI 27 kg/m2. History of DM 30%, HTN 20%, mod-severe PHTN 45%, Chronic A. Fib. 45%, CKD & Dialysis 10%, 5%, respectively. Previous CHF 15% and mean STS score 3.33% (1.3 -13.18%)

Variable	%
A.Fib	0%
Wound infection	10%
ECMO	5%
Stroke	0%
MI	0%

RESULTS:

Hospital mortality in one patient. One-year Survival was 95%. Mean mechanical ventilation in a single valve versus double valve surgery were 12 and 23 hours, respectively. Median LOS was 8 days for single valve patients and 13 days for double valve patients. Only 3 patients required hospital readmission and 1 patient required ICU readmission. 3 patients required reoperation for bleeding.

No patients developed post op new onset atrial fibrillation or perioperative MI. Recovered stroke in one patient and AKI in 5 patients, none required dialysis. One patient needed elective ECMO while weaning from CPB due to pre-op biventricular failure.

CONCLUSION:

Reoperative Robotic assisted cardiac surgery is a safe procedure in an experienced hand with comparable post-operative outcome to the STS data base for conventional redo surgery. Moreover, it has the advantage of avoiding resternotomy with associated adhesion and risk of reentry injury.

