

A STUDY TO EVALUATE THE OUTCOMES AFTER MINIMALLY INVASIVE CARDIAC SURGERY IN ADULT PATIENTS WITH TOF PHYSIOLOGY

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BACKGROUND

- Despite the complexity of cardiac surgery, minimally invasive cardiac surgery (MICS) has been applied to coronary artery bypass surgery, valve repairs and replacement and even for congenital heart defects (CHD).
- Literature review of MICS in CHD showed a spectrum of septal defects and valve repairs but only few cases of TOF and isolated case reports of adult patients with TOF.
- This study was designed to fill this lacuna and to evaluate outcomes after MICS in these patients.

METHODS

- TOF patients ≥ 14 years of age were randomly divided into 2 groups with 25 patients per group, one undergoing surgery with full median sternotomy and the second with minimally invasive surgery via upper mid sternotomy.
- Intraoperative details like incision length, aortic cross clamp time, cardiopulmonary bypass time and postoperative details like duration of mechanical ventilation, ICU stay, postoperative complications, total hospital stay and surgical site complications were compared.

OBSERVATION AND RESULTS

S.NO.	Characteristics	Median Sternotomy (n=25)	Minimally Invasive Cardiac Surgery (n=25)	P- value
1	Age(years)	21.2 $\pm$ 3.85	23.32 $\pm$ 5.34	0.113
2	Males	10(40%)	9(36%)	0.386
3	Females	15(60%)	16(64%)	0.386
4	Incision length (cm)	16.84 $\pm$ 1.43	6.24 $\pm$ 0.58	<0.001
5	Aortic cross clamp time (Mins)	68.16 $\pm$ 5.36	71.84 $\pm$ 8.35	0.11
6	Cardiopulmonary bypass time (Mins)	119.88 $\pm$ 6.62	126.48 $\pm$ 15.51	0.056
7	Duration of mechanical ventilation (Hours)	7.12 $\pm$ 1.33	6.56 $\pm$ 0.98	0.096
8	ICU stay (Days)	2.8 $\pm$ 0.63	2.48 $\pm$ 0.80	0.122
9	Postoperative complication: 1- Bleeding 2- Pleural/pericardial effusion 3- Residual pulmonary stenosis	1(4%) 6(24%) 3(12%)	0 5(20%) 1(4%)	0.367
10	Total hospital stay (Days)	5.64 $\pm$ 0.88	5.28 $\pm$ 0.77	0.130

CONCLUSION

- This study provides an insight about the application of MICS in patients with TOF requiring multiple intracardiac repairs.
- Although technically challenging, we found TOF repair via upper mid sternotomy to be safe and feasible with an excellent cosmetic outcome.

