

# Endoscopic Mitral Surgery versus Conventional Redo Sternotomy for Redo Mitral Valve Surgery: A single-center experience

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## • OBJECTIVE:

- Redo sternotomy for heart surgery comes with relatively higher perioperative morbidity and mortality.
- Adhesions from previous sternotomy increases the risk of injury to important structures such as patent grafts , heart, great vessels and lungs.
- These complications have been found to significantly contribute to increased need for blood transfusion, the length of hospital stay, post-op renal complications as well as overall mortality.
- Several studies have shown that endoscopic mitral valve surgery in those with previous sternotomy may be a safer option in well selected patients.

## METHODS:

We retrospectively analyzed the data from a single center from June 2009 to August 2024.

All patients had at least one prior heart surgery via sternotomy.

Those who had redo sternotomy plus mitral valve surgery were compared to those who had endoscopic mitral valve surgery.

Outcomes of interest include; length of ITU stay, length of hospital stay, post-op stroke, post-operative blood loss, AKI requiring dialysis, in-hospital mortality.

## RESULTS:

A total of 102 patients(with previous heart surgery via sternotomy) who had mitral valve surgery (mean age: 63yrs) underwent endoscopic mitral valve surgery were included in the study.

|                         | Redo sternotomy + MVr/R | Endoscopic + MVr/R |
|-------------------------|-------------------------|--------------------|
| Number of patients      | 53                      | 49                 |
| Mean age (years)        | 62                      | 68                 |
| Euro Score II           | 4.2                     | 5.7                |
| Mean CPB time (minutes) | 134                     | 163                |

|                                | Open<br>N=53  | Endoscopic<br>N=49 |          |
|--------------------------------|---------------|--------------------|----------|
| Blood Loss on D0               | 340(120-1350) | 270(40-1570)       | P=0.003* |
| Duration of Ventilation (Days) | 1(1-5)        | 1(1-6)             | P=0.431  |
| ICU Stay (Days)                | 1(1-38)       | 1(1-15)            | P=0.442  |
| Post operative stay (Days)     | 11(2-56)      | 7(2-45)            | P=0.007* |

|                                                   | Open<br>N=53 | Endoscopic<br>N=49 |         |
|---------------------------------------------------|--------------|--------------------|---------|
| Mortality                                         | 2 (3.7%)     | 3 (6%)             | P=0.34  |
| Returned to the theater for bleeding or tamponade | 1 (2%)       | 1 (2%)             | P=0.535 |
| Deep sternal wound infection                      | 2(3.7%)      | 0                  | P=0.137 |
| New haemo-filtration or dialysis                  | 4(7.5%)      | 2(4.1)             | P=0.457 |
| Post-op permanent stroke                          | 2 (3.7%)     | 1 (2%)             | P=0.095 |



## Conclusion:

Endoscopic approach for redo cardiac surgery has favorable outcomes.

Ventilation times and ITU stay were shorter with hospital stay being significantly shorter.

Blood Loss, Deep sternal wound infection, Post-op dialysis, Post-op permanent stroke were lower in the endoscopic group.

