Physician - Minimal Invasive, TAVI, Robotic Cardiac Surgery

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Minimally Invasive Tricuspid Valve Surgery Without Inferior Vena Cava Clamping

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Objective: This study aimed to investigate the results of minimally invasive tricuspid valve surgery performed under vacuum assistance without inferior vena cava (IVC) clamping.

Methods: All 125 patients who underwent minimally invasive tricuspid valve surgery by the same surgical team between January 2023 and August 2024 were included in this study. Cannulation was performed peripherally, and the superior vena cava was clamped in all patients. The IVC was clamped in 112 patients (Group 1). In the remaining 13 patients (Group 2), vacuum assistance was used, and the IVC was not clamped during cardiopulmonary bypass. Operative success, morbidity and mortality rates, bleeding, and hemolysis were investigated in the postoperative period.

Results: The demographic characteristics were similar between groups. However, redo cases were more common in Group 2 compared to Group 1 (53.8% *vs.* 14.3%, p<0.01). A total of 121 mitral valve surgeries and 125 tricuspid valve surgeries were performed. The operation success rate was 100% in both groups. Operative mortality occurred in one patient in Group 1 (0.9%). Bleeding and other postoperative data were similar between the groups (p>0.05).

Conclusion: Minimally invasive tricuspid valve surgery can be safely performed by vacuum assistance without IVC clamping.

Keywords: Inferior vena cava clamping, minimally invasive tricuspid valve surgery, tricuspid valve replacement.

Table 1. Operative and post-operative datas

	Group 1 (n=112)	Group 2 (n=13)	p value
MV replacement	68 (62.4%)	7 (58.3%)	>0.05
MV repair	41 (37.6%)	5 (41.7%)	>0.05
TV replacement	5 (4.5%)	2 (15.4%)	>0.05
TV ring annuloplasty	17 (15.2%)	3 (23.1%)	>0.05
TV bicuspidization	90 (80.4%)	8 (61.5%)	>0.05
Ischemic time(min.)	75.9±14.2	72±13.9	>0.05
Bleeding	8 (7.1%)	1 (7.7%)	>0.05
Discharge(days.)	5.88±0.9	5.54±0.6	>0.05
Mortality	1 (0.9%)	0	>0.05

MV: Mitral valve; TV: Tricuspid valve.