



Long-term outcomes of Video Aided Thoracoscopic mitral valve repair for Barlow’s disease

Lishan Zhong,Yanyin Huang,Zhenzhong Wang,Shuo Xiao,Dou Fang,Yuxin Li,Qiuji Wang,Chaolong Zhang,Huanlei Huang

Guangdong Cardiovascular Institution, Guangdong Provincial People’s Hospital, Guangdong Academy of Medical Sciences

Objective

It is unknown whether video aided thoracoscopic mitral valve repair(VATS-MVP) in patients with Barlow’s disease(BD) differs from conventional median sternotomy(MS) approach in terms of preoperative patient selection, intraoperative surgical strategy, perioperative results, and long-term prognosis. The aim of this study was to examine the safety, efficacy and durability of VATS-MVP in BD.

Methods

- Retrospective review of 196 cases, including 103 patients via MS approach and 93 patients via VATS approach. (Table 1)
- Range 0.2-12.4 years follow-up
- Reviewed:
 - Clinical data
 - Echocardiography results
 - Follow-up data
 - Complications

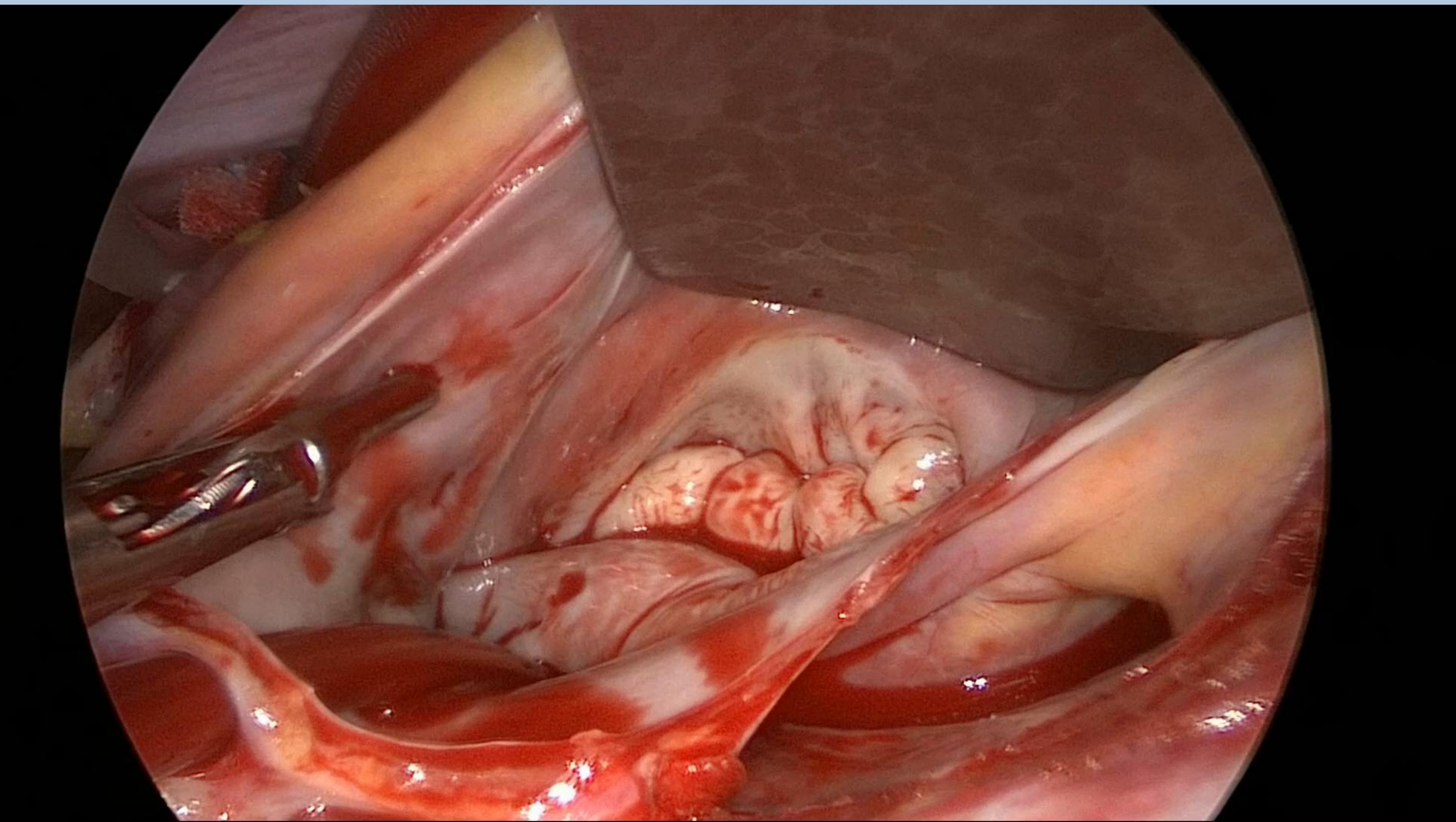
Table 1. Preoperative data of the two groups

Patient characteristics	Total (n=196)	VATS group (n=93)	MS group (n=103)	P value
Age,y(X±s)	43.8±14.9	45.5±14.5	42.3±15.1	0.135
Male,n(%)	133 (67.9%)	69 (67.0%)	64 (68.8%)	0.784
BMI,kg/m²(X±s)	22.4±4.0	22.0±3.7	22.8±4.2	0.134
NYHA class,n (%)	196			0.062
I	38(19.4%)	16 (17.2%)	22 (21.4%)	
II	120(61.2%)	62 (66.7%)	58 (56.3%)	
III	28(14.3%)	8 (8.6%)	20 (19.4%)	
IV	10(5.1%)	7 (7.5%)	3 (2.9%)	
Comorbidities				
Hypertension, n (%)	36(18.4%)	14 (15.1%)	22 (22.4%)	0.255
Diabetes mellitus,n (%)	6(3.1%)	2 (2.2%)	4 (3.9%)	0.685
Coronary artery disease, n (%)	7(3.6%)	2 (2.2%)	5 (4.9%)	0.449
Atrial fibrillation,n (%)	29(14.8%)	8 (8.6%)	21 (20.4%)	0.020
Stroke,n (%)	4(2.0%)	1 (1.1%)	2 (1.9%)	1.000
Chronic kidney disease, n (%)	0(0%)	0(0%)	0(0%)	
Echocardiography				
MR grade≥3+, n (%)	189(96.4%)	89(95.7%)	100(97.1%)	0.601
LAD,mm(X±s)	44.6±9.3	43.7±8.8	45.4±9.7	0.194
LVDd,mm(X±s)	56.4±6.7	56.2±6.3	56.6±7.1	0.681
LVDs,mm(X±s)	33.7±5.4	33.7±4.7	33.7±6.0	0.967
LVEF,%(X±s)	67.2±5.1	67.7±4.8	66.8±5.8	0.290
Mitral valve prolapse				
Anterior	29(14.8%)	14 (15.1%)	15 (14.6%)	
Posterior	62 (31.6%)	24 (25.8%)	38 (36.9%)	
Bileaflet	105 (53.6%)	55 (59.1%)	50 (48.5%)	

Abbreviations: MR, mitral regurgitation; LAD, left atrial diameter; LVEDD, left ventricular end-diastolic diameter; LVESD, left ventricular end-systolic diameter; LVEF, left ventricular ejection fraction.

Results

- No hospital death was observed. Follow-up was 94.2% complete (4.0±2.4 years)
- Repair techniques: Artificial chordae implantation:VATS group vs MS group, 91.4% vs 79.6%,*P*=0.020
- Total operation time:VATS group vs MS group, 244.3±59.2 vs 255.4±78.7 min, *P*=0.265
- Cardiopulmonary bypass time: VATS group vs MS group, 163.7±44.3 vs 137.1±41.1 min, *P*=0.000
- Aaortic clamp time:VATS group vs MS group, 110.6±37.8 vs. 91.5±32.9 min, *P*=0.000
- Perioperative complications: VATS group vs MS group, *P*>0.05
- Mechanical ventilation time(*P*=0.025), ICU time(*P*=0.206), and postoperative hospitalization time(*P*=0.000) were all shorter in the VATS group
- Two patients in the MS group died non-cardiacally during the follow-up period
- The 3-year, 5-year and 10-year survival rates of all patients were 99.2%, 99.2%, and 82.6%, respectively
- Compared with MS group, there was no significant difference in the survival rate, recurrence rate of mitral regurgitation, reoperation rate of mitral valve and incidence rate of adverse cardiovascular and cerebrovascular events in VATS group(*P*>0.05).



Conclusions

Minimally invasive approach achieved great long-term durability and effectiveness of MVP in BD, and its valvular performance remained stable over time.