

The importance of intraoperative transesophageal echocardiography in the evaluation of congenital heart diseases: 2 years experience of our center

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Introduction (or Basis or Objectives): Preoperative transesophageal echocardiography(TEE) provides a review of the preoperative diagnoses and decisions. Postoperative TEE gives ideas for further initiatives through the evaluation of surgical repair surgical repair.

Methods: 553 patients underwent surgery due to congenital heart disease between November 2009 and December 2011 in our center. 186 patients who were operated underwent TEE in the operating room. The application rate of TEE among all procedures was found to be 34%. TEE could not be performed in patients under 6 kg, who had contraindication for TEE, due to technical reasons. In addition, TEE could not be performed in cases that do not require intracardiac repairs (PDA closure, shunts, coarctation repair, repair of vascular rings, pulmonary band surgery) and in patients with ASD. The preoperative TEE was compared with preoperative transthoracic echocardiography. The surgical procedure was assessed by postoperative TEE and the consideration of whether there was a need for a re-intervention was established.

Results: The surgical plan was changed according the preoperative TEE in four patients scheduled for surgery after TTE. The rate of patients in whom the surgical plan was changed among all the patients was found to be 2%. The status of 4 patients in whom surgical strategy was changed was summarized in Table 1. There were 7 patients for whom heart-lung pump was needed again with perioperative TEE in operations scheduled by preoperative TEE and the decision of the council. (Table-2) This ratio was determined as 3.7% among all patients.

Conclusions: TEE is a method providing important information that can change the surgical strategy in patients in whom TEE must be applied in pediatric cardiac surgery centers.

Table-1
Table-2

TTE	Decision	TEE	Per-op decision
VSD (perimembranous, wide)	VSD closure	Multiple apical muscular defects	Pulmoner banding
Tetralogy of Fallot	VSD closure, transanular patch	Aortic valve obstructing RVOT	VSD closure and aortic valve repair
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VSD(perimembranous, wide)	VSD closure	Additional subpulmonic defect	The closure of both VSD

Pre-operative diagnosis	Preoperative diagnosis	Additional surgical procedures	Postoperative control
C-TGA Rastelli	Significant tricuspid regurgitation	Conduit banding	Minimal TR
TAPVD	Stenosis in the connection point of pulmonary vein-left atrium	Expansion of anastomosis line	No obstruction
Supravalvular aortic stenosis	Stenosis in the supravalvular region	Expansion of stenosis	No supravalvular stenosis
c-TGA +VSD+PS	Significant PS	Conduit application	No stenosis in conduit
Subaortic ridge	Subaortic stenosis	Expansion of ridge resection	No stenosis
VSD	Residual ventricular septal defect	No residual VSD.	No residual VSD
DORV	LVOT obstruction	Elimination of LVOT obstruction	No LVOT obs. AV Block