Complications of transthoracic intracardiac lines and central venous lines in neonates undergoing cardiac surgery

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Background

- Neonates undergoing congenital heart surgery require central venous access for diagnostic and therapeutic purposes
- Transthoracic intracardiac lines can be placed at the time of surgery in the right atrium, left atrium, pulmonary artery or right ventricle, or common atrium in single ventricle physiology

Methods

- Retrospective chart review
- August 1, 2015 – July 31, 2016
- Less than 30 days old
- Cardiac surgery at BCH (excluding PDA ligation)

Results

- 124 neonates
- Mean age 8.9 +/-7 d and mean weight 3.1+/-0.6 kg
- 176 intracardiac lines in 113 patients
- 97 central venous lines (96 RIJ, 1 femoral) by anesthesia
- 18 preoperatively placed central venous lines
- 35 umbilical venous catheters and 21 PICC lines

	Intracardiac lines (n=113)	CVLs (n=115)
Median time to last line removal (d)	6 (1-20)	6 (0-19)
Transfusion for prophylaxis prior to line removal (platelets or FFP)	5 (4%)	0
Transfusion of pRBCs <=24h of line removal	25 (22%)	2 (1.7%)
Line thrombosis	1 (0.9%)	3 (2.6%)
CLABSI	0	1 (0.9%)
Surgical reintervention	1 (0.9%)	0
Death, CPR, ECMO	0	0

Conclusions

- In this cohort, there were very few complications of thrombus, infection, or requirement for surgical intervention
- Transfusion following transthoracic line removal occurred in 22% of patients with transthoracic lines
- This study is small, retrospective, and limited to a single center
- There were multiple clinical indications for transfusion.
- Further study is warranted to identify risk factors for bleeding and to identify ways to mitigate that risk