

Fontan Operation (Extra-Cardiac, Non-Fenestrated) Guideline



Admit to CVICU POD #0

- **Sedation**
 - Refer to CVICU Pain and Sedation Protocol
- **Respiratory**
 - PEEP 3
 - Ventilator mode
 - SIMV-PRVC
 - SIMV-PC
 - Consider iNO if evidence of pulmonary hypertension (Refer to Patient Care Policy I-1004 Inhaled Nitric Oxide (iNO) Protocol)
 - Early extubation
 - Utilize extubation readiness testing
- **Cardiac**
 - Vital sign goals
 - HR < 120
 - Oxygen saturation > 90%
 - Blood pressure per age normal
 - Temperature control/avoidance of fever
 - Fontan pressure < 10 mmHg
 - Monitor for low cardiac output syndrome
 - Consider milrinone infusion
 - Consider epinephrine infusion
 - Monitor Fontan pressure
 - Continuous atrial ECG monitoring for 6 hours and then PRN
- **GI**
 - Start clears 2 hours after successful extubation
- **Heme**
 - Monitor for bleeding
- **Monitor and trend Etometry T3 data**

POD #1

- **Fluid management**
 - Negative fluid balance goal
 - Furosemide 1 mg/kg IV q 8 hours
 - Chlorothiazide 1 mg/kg po bid when taking po
 - Fluid restrict to 80% maintenance while chest tubes are in place
 - Spironolactone 1 mg/kg po bid when taking po
 - Consider enalapril in consultation with cardiologist when taking po
- **Wean milrinone infusion to off**
- **Advance diet**
 - Low fat
 - Consult Nutrition
- **Minimize positive pressure ventilation**
 - Wean HFNC
 - Keep NC 0.5 LPM minimum while CTs in place
- **Wean off iNO**
 - Refer to Patient Care Policy I-1004 Inhaled Nitric Oxide (iNO) Protocol
 - Consider oral sildenafil
- **Discontinue arterial line**
- **Discontinue bladder catheter**
- **Discuss anticoagulation requirements and timing of initiation with surgeon and cardiologist**
- **Analgesia and anxiolysis**
 - Refer to CVICU Pain and Sedation Protocol
 - Consider ketorolac in consultation with surgeon
 - Wean off dexmedetomidine
 - Ambulate
 - Establish normal sleep-wake cycle

POD #2 - 5

- Consider changing to oral diuretic regimen
- Consider removing CTs when total output is < 2 mL/kg/day
- Transition to oral pain medication PRN
- Complete discharge teaching

Discharge Criteria

- CTs out for > 24 hours with clear chest radiograph the day of discharge
- Discharge teaching complete
- Discharge echocardiogram complete
- Pain controlled on oral medication
- Ambulatory (per age normal)
- Normal sinus rhythm unless cleared by EP, cardiologist and surgeon

Common Complications

- **Tamponade**
 - Consider fluid bolus
 - Consider echocardiogram
 - Notify cardiologist
 - Notify surgeon
 - Consider bedside/catheterization lab drainage
- **Junctional ectopic tachycardia**
 - Refer to Junctional Ectopic Tachycardia Guideline
- **Systemic hypotension and low Fontan pressure**
 - Consider volume resuscitation
 - Consider PRBC transfusion if anemic
 - Consider vasopressin infusion
 - Consider assessing for adrenal insufficiency
- **Hypotension and high Fontan pressure**
 - Pulmonary hypertension
 - Consider iNO initiation and pCO₂ goal
 - 35-40 mmHg (Refer to Patient Care Policy I-1004 Inhaled Nitric Oxide (iNO) Protocol)
 - Consider sedation
 - Consider paralysis
 - Fontan obstruction
 - Consult with cardiologist and surgeon
 - Consider urgent catheterization lab diagnosis and intervention
 - Ventricular failure
 - Consider echocardiogram
 - Consider epinephrine infusion
 - Consider milrinone infusion
- **Heart block**
 - Consider A-V temporary pacing
 - Minimize dexmedetomidine use
- **Bleeding**
 - Consider checking CBC
 - Consider PRBC transfusion
 - Measure coagulation panel and replace factors as indicated
 - Consider Factor 7 administration
 - Perform TEG
 - Call surgeon
- **Chylothorax**
 - Refer to Chylothorax Guideline

Patient Education

- Refer to CVICU unit specific education

Clinical Practice Guideline Created By:

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Fontan Operation (Extra-Cardiac, Non-Fenestrated) References

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