**Craniosynostosis v.3.0: Diagnostic Phase**

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**Guidelines for surgical procedure and timeframe**
- Endoscopic strip craniectomy ≤ 4 months of age
- Fronto-orbital advancement 9-12 months of age
- Posterior vault switch cranioplasty 4-9 months of age
- Posterior vault modified p3 3-6 months of age

**Inclusion Criteria**
- Child with Craniosynostosis "AND"
- Candidate for Cranial Vault Expansion

**Exclusion Criteria**
- Children with diagnosis other than Craniosynostosis or without Cranial Vault Expansion

**Initial Assessment**
- Ensure patient meets inclusion criteria AND surgery is recommended
- Determine surgical procedure

**Further assessments**
- If murmur, ECHO and consider cardiology consult
- If personal or family history of bleeding disorder, obtain PT, PTT, INR, Von Willebrand antigen, stored specimen and hematology consultation
- If positive MRSA history, obtain MRSA screening swab

**To Pre-Surgical Phase**

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Last Updated: December 2016
Next Expected Review: August 2015
Pre-Surgical PHASE

Guidelines for surgical procedure and timeframe

- Endoscopic strip craniectomy ≤ 4 months of age
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Inclusion Criteria

- Child with Craniosynostosis "AND"
- Candidate for Cranial Vault Expansion

Exclusion Criteria

- Children with diagnosis other than Craniosynostosis or without Cranial Vault Expansion

Pre-surgical Assessment

- Ensure patient meets inclusion criteria AND surgery is recommended
- Confirm planned surgical procedure

MRSA

- Screen all patients for a personal or family history of MRSA in order to provide optimal peri-operative antibiotics

Patients with a bleeding disorder must be cleared by Hematology; Review PASS assessment; Review MRSA screening

Ensure appropriate evaluations have been completed

- Order blood
- Obtain consents:
  - Blood consent
  - Neurosurgery consent
  - Plastic Surgery consent
- Complete Phase 2 of CIS PowerPlan and Checklist 2

Pre-operative teaching and prepare for OR

All patients must complete an evaluation in PASS clinic

To Holding Area Phase

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Order antibiotics early
Vancomycin must be initiated 2 hours prior to incision, if used

Ready for surgery by Anesthesia evaluation?

Yes

Order FFP and peri-operative antibiotics

- Cefazolin first-line
- Clindamycin if history of cefazolin allergy, severe penicillin reaction, or history of MRSA sensitive to clindamycin
- Vancomycin if history of MRSA resistant to clindamycin or with unknown sensitivities

Ensure appropriate pre-surgical preparation

- Complete Phase 3 of CIS PowerPlan and Checklist 3
Craniosynostosis v.3.0: Transfer Phase

PICU Transfer and Surgical Unit Transfer PHASES

Transfer to ICU

Continue peri-operative antibiotics
- Cefazolin first-line
- Clindamycin if history of cefazolin allergy, severe penicillin reaction, or history of MRSA sensitive to clindamycin
- Vancomycin if history of MRSA resistant to clindamycin or with unknown sensitivities

Complete surgery
- Complete Phase 4 of CIS PowerPlan and Checklist 4 to track intra-operative activities for ICU handoff

Post-operative monitoring
- Jackson-Pratt drain
- Hemodynamic stability
- Continue peri-operative antibiotics
- Encourage oral intake
- Pain control

Prepare patient for floor transfer
- Discontinue foley catheter
- Discontinue arterial catheter
- Establish oral pain control regimen
- Establish oral feedings
- Complete Phase 5 of CIS PowerPlan and Checklist 5

To Discharge

Citation Information

Summary of Version Changes
Craniosynostosis v.3.0: Discharge Phase

Receive patient on floor

Discharge Planning
- Remove Jackson-Pratt drain
- Ensure clinic follow up established
- Establish oral pain control
- Encourage oral feeding
- Discharge teaching

Evaluate readiness for discharge
- Complete Phase 6 of CIS PowerPlan and Checklist 6

Discharge Criteria
- Temperature < 38°C for last 24 hours
- Pain controlled without IV meds > 4hrs
- Tolerating enteral feeding
- Bowel movement
- Evaluation of periorbital edema by ARNP or MD
- Jackson-Pratt drain discontinued

Discharge Instructions
- Keep the incision clean with soap and water
- Call for: nausea or vomiting; fever > 101.5°F; increased swelling, redness, or drainage from the incision; decreased level of consciousness or increased irritability
Summary of Version Changes

- Version 1.0 (08/08/2012): Go live
- Version 2.0 (05/28/2014): Changes to Inclusion/Exclusion criteria to reflect single and multi suture Craniosynostosis
- Version 3.0 (12/16/2016): Added Cervical CT for patients with syndromic synostosis
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Medicine is an ever-changing science. As new research and clinical experience broaden our knowledge, changes in treatment and drug therapy are required.

The authors have checked with sources believed to be reliable in their efforts to provide information that is complete and generally in accord with the standards accepted at the time of publication.

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Craniosynostosis Approval & Citation

Approved by the CSW Craniosynostosis for May 28, 2014

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