Post-Operative Open Craniosynostosis Pathway

Pathway Purpose: To guide postoperative management of open craniosynostosis surgery and decrease ICU and total length of stay post-operatively.

Inclusion criteria: Classic craniosynostosis

Exclusion criteria: Complex remodeling including multiple bone removal, redo remodeling, history of scalp infection or dehiscence

Post-op day #	Activity	Medications
0-1	▪ No activity restrictions ▪ No Foley ▪ Eyes will likely be shut due to edema ▪ Head of bed (HOB) >30 degrees, encourage family to hold patient ▪ Axillary temps ▪ Bacitracin BID if no dressing ▪ Regular diet ▪ Avoid pupillary checks	▪ IV antibiotics 24h post-op ▪ Acetaminophen IV q6h ATC x 48h ▪ Fentanyl IV PRN or hydromorphone IV PRN ▪ Maintenance IVF (MIVF) (start POD 0) ▪ Initiate bowel regimen (see reverse) ▪ Post-op nausea vomiting algorithm (PONV; see reverse)

Transfer to floor: Post-op day (POD) 1
Two sets of labs (CBC, coagulation panel, chem 10): POD 0 and 1
CBC : Transfuse pRBCs for hemoglobin <7

2	▪ Eyes will likely be shut due to edema ▪ HOB > 30 ▪ Axillary temps ▪ Dressing off, Bacitracin BIDx5 days ▪ Regular diet	▪ Maintenance IVF (depending on PO intake) ▪ Continue IV pain meds ▪ Continue bowel regimen ▪ PONV algorithm
3	▪ Eyes will start opening ▪ Axillary temps ▪ Regular diet ▪ Increase PO intake ▪ Wash head (soap and water, pat dry) ▪ RN to initiate discharge teaching	▪ Turn off MIVF if tolerating ½ maintenance PO ▪ Transition to PO meds PRN and begin weaning off of opioids ▪ Continue bowel regimen ▪ PONV algorithm
4	▪ If discharge criteria met, patient ok to discharge home once both eyes are open	▪ PO pain meds PRN ▪ Continue bowel regimen (see reverse for escalation if needed)

Patient Education:
- To reduce swelling, keep patient in upright position.
- Encourage holding to reduce anxiety from swelling.
- Continue acetaminophen when awake for 3 days once home.
- Bacitracin – only if directed by primary team
- POD 3 Ok to bathe with soap and water. Pat dry.
- No submerging for 1 month

Discharge Criteria:
- Adequate PO intake
- Pain controlled
- PO meds
- Eyes open
- Incision is clean, dry, and intact. No drainage.

Feedback?

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Pathway Team: May Casazza, NP, Amelia Sperber, CNS
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Associated Order Set: n/a
Associated Policies and Procedures: n/a

Target length of stay (LOS): 4 days

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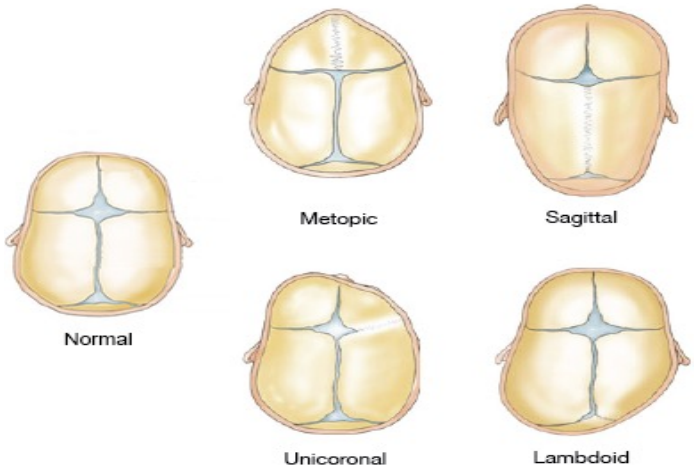
Definitions:

- Craniosynostosis = Birth defect in which one or more of cranial sutures close prematurely. Happens before baby is fully formed. Baby's brain grows, skull can become more misshapen depending on which sutures are fused. Can cause increased pressure in brain and decreased growth in that specific region.

Pathophysiology:



Bowel Regimen: Add medication from next line if no stool within 24h or at provider discretion.

- 1st: Osmotic and lubricant laxatives: polyethylene glycol (MiraLAX)
- 2nd: Stimulant laxatives: Senna; or bisacodyl; or glycerin suppositories (poor PO or very young patients)
- 3rd: Fleet Enema: Sodium phosphate is a saline laxative that is thought to work by increasing fluid in the small intestine (not for standard use in infants)
- 4th: Chocolate bomb (magnesium hydroxide/mineral oil/senna: combination of osmotic lubricant and stimulant (do not give chocolate bomb with other laxatives)

Nausea Pathway:

- Admission: Ondansetron 0.1 mg/kg IV q6h (max 4mg/dose) x 24-48 hrs ONLY IF patient did NOT receive aprepitant (Emend) in OR (If received Emend → ondansetron PRN) (Can consider metaclopramide PRN as second line)
- PONV Score
  - 0 – No symptoms
  - 1 – Nausea
  - 2 – Retching
  - 3 - Emesis
- 12-24 Hours: PONV >1 → Add scopolamine 0.5-1 patch
- ≥24 hours: PONV >0 → Change ondansetron to granisetron 20mcg/kg IV q12h (max 1mg/dose)
- >36 hours: Ask neurosurgery about first line antiemetics (discuss with neurosurgery before starting benzodiazepines)
- >48 hours: If nausea remains refractory discuss with neurosurgery re: dexamethasone

Nursing Considerations:

- Accurate intake/output documentation to reflect PO toleration, voids, emesis and bowel movements

References:
https://www.plasticsurgery.org/reconstructive-procedures/craniosynostosis-surgery/results#:~:text=Antibiotic%20ointment%20is%20typically%20applied,type%20of%20craniosynostosis%20surgery%20performed