Impact of an ERAS pathway for pediatric cranial vault expansion

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Introduction

- In the US, 1 in 2,500 babies is born with craniosynostosis, cranial vault expansion is the surgical treatment
- These post-operative patients account for most of the plastic surgical division inpatient census
- An Enhanced Recovery after Surgery (ERAS) pathway, uses evidence-based practices to minimize variations in care, optimize hospital throughput and improve outcomes
- Site did not have comprehensive ERAS for this high-volume procedure, leading to variable outcomes

Purpose

The purpose of this QI project was to study the impact of an ERAS pathway on hospital length of stay and caregiver satisfaction.

Methods & Sample

- This project utilized a pre-post intervention design comparing LOS and caregiver satisfaction scores at baseline and after implementation of an ERAS pathway.
- The intervention was an ERAS pathway implemented at each stage of the peri-operative course from initial consultation to post-discharge follow-up.
- Caregiver satisfaction was assessed using a standardized site survey.

21 patients and their caregivers participated, 10 in the usual care cohort and 11 in ERAS cohort

Results

HOSPITAL LOS = NO CHANGE

Care as usual 4.27 days (IQR=3.3.1-5.27)

ERAS cohort 4.33 days (IQR= 4.23-4.51) p=0.60

	"Overall, I was satisfied with the care my child received"		"I felt well prepared for my child's procedure and hospital stay"	
Selected Response	Usual Care Count (%)	ERAS Count (%)	Usual Care Count (%)	ERAS Count (%)
Disagree	0 (0.0%)	1 (9.1%)	3 (30.0%)	0 (0.0%)
Neither agree nor disagree	3 (30.0%)	1 (9.1%)	4 (40.0%)	0 (0.0%)
Agree	1 (10.0%	2 (18.2%)	2 (20.0%)	5 (45.5%)
Strongly agree	6 (60.0%	7 (63.6%)	1 (10.0%)	6 (54.5%)

In the ERAS cohort 100% of caregivers either agreed or strongly agreed that they felt prepared for their child's surgery and hospitalization, in contrast to 30% of caregivers in the usual care cohort who agreed or strongly agreed with that statement.

Statistically significant difference, X^2 (3, N=21)=11.84, p=.008

ERAS Pathway Elements

Pre-op

1. NP leads caregiver education session, newly developed educational tools
2. Education of providers on ERAS, new tools

Inpatient (ICU and Floor)

1. Removal of the Foley catheter, Jackson-Pratt drain and arterial line at the earliest opportunity
2. antiemetic therapy as needed to encourage early resumption of feeding
3. Timed lab draws to facilitate early ICU to floor transfer
4. Request language services to improve communications
5. Encouraged all medications by mouth rather than IV
6. Nurses model wound care and medications regimen
7. Review new comprehensive discharge instructions

Post-discharge

1. NP calls caregiver 2-4 days post discharge

Conclusions & Implications

1. ERAS pathways are feasible in pediatric surgery
2. ERAS can lead to improved caregiver/patient outcomes
3. Nursing must be a stakeholder in surgery ERAS development and implementation
4. Bed management changes due to COVID-19 made assessment of LOS difficult in this QI project
5. Future QI projects should be done to explore ERAS