TOTAL SHOULDER ARTHROPLASTY EXPEDITED PATHWAY: SAME DAY DISCHARGE FEASIBILITY STUDY

Natalie Melton M.D., Shalini Dhir M.D. FRCPC, George Athwal M.D. FRCSC, Darren Drosdowech M.D. FRCSC, Kevin Armstong M.D. FRCPC
Department of Anesthesia and Perioperative Medicine, St. Joseph's Health Care, Western University - London, Ontario

Introduction

- Total Shoulder Arthroplasty (TSA) hospital stay 2-3 days
- **Medical reasons**: pain, nausea, surgical complications
- **Non-medical reasons**: discharge planning, allied health professional visits, routine hospital practices
- Subset of patients without severe medical comorbidities can have shorter length of stay
- Devise and test an Expedited Pathway for discharge of patients within 24h of admission (POD#0)
- Outpatient Regional catheter program exists
- Feasibility of early discharge for TSA studied but not used routinely.

Methods

- REB approval
- 10 patients recruited (7 completed study protocol by now)

Standard Practice:
- stop CSIB morning of discharge
- AHP, X-ray, on POD#1
- discharge POD #1-3

Expedited Pathway:
- Careful Patient Selection
- ERAS Protocol for Optimized Perioperative Process (including home Continuous Interscalene Block (CISB) for pain)
- Optimized Multidisciplinary Process

Primary outcomes:
- time to Discharge Criteria completion
- Pain on POD#1
- Opioid Consumption in 24h
- Satisfaction score

Discharge Criteria:
- Pain ≤ 6/10
- Sat O2 ≤ 92% on room air, RR 12-20
- Control of PONV
- Physiotherapy (PT) assessment
- Post-op X-rays

Table 1. Same Day Discharge after Total Shoulder Arthroplasty Process

Patient Screening	Modified ERAS Protocol	Multidisciplinary Process
Exclusion Criteria	Preoperative	Post-operative
cardiac and resp disease	preop counseling	early oral nutrition
other reasons for stay	fluid+carb loading	multimodal analgesia
OSA	no prolonged fasting	early mobilization
BMI > 35	antibiotic prophylaxis	stimulate gut mobility
study drug allergy	CISB	X-rays after PACU
severe psychiatric illness	Intraoperative	PT review
chronic pain	short-acting anesthetic	CCAC for CISB
CSIB Contraindications	Na and H2O restriction	Audit
	maintain normothermia	
	prevent PONV	

CISB = continuous interscalene block; carb = carbohydrate; Na = sodium; H2O = water; OT = occupational therapist; PT = physiotherapist; CCAC = Community Care Access Centre; PONV = post-operative nausea and vomiting

Results

Demographics
- 7 patients have completed study
- One patient had significant asthma (not noted till post inclusion)
- Analysis: intention-to-treat

Table 2. Demographic and Surgical Information

Parameter	Mean *(SD)*
age (y)	61 *(9)*
BMI (kg/m^2)	27 *(2)*
time from admission to PACU in (h)	4 h 44 min (48 min)
gender (M/F)	3/4
local residency (Y/N)	3/4
surgery start time (8 am/11 am / 1 pm)	4/1/2
anatomic / reverse TSA	6/1
	Comorbidities (Y/N)
asthma	1/6
congenital heart disease	1/6
ex-smoker	1/6
Hypertension	3/4
primary biliary cirrhosis	1/6

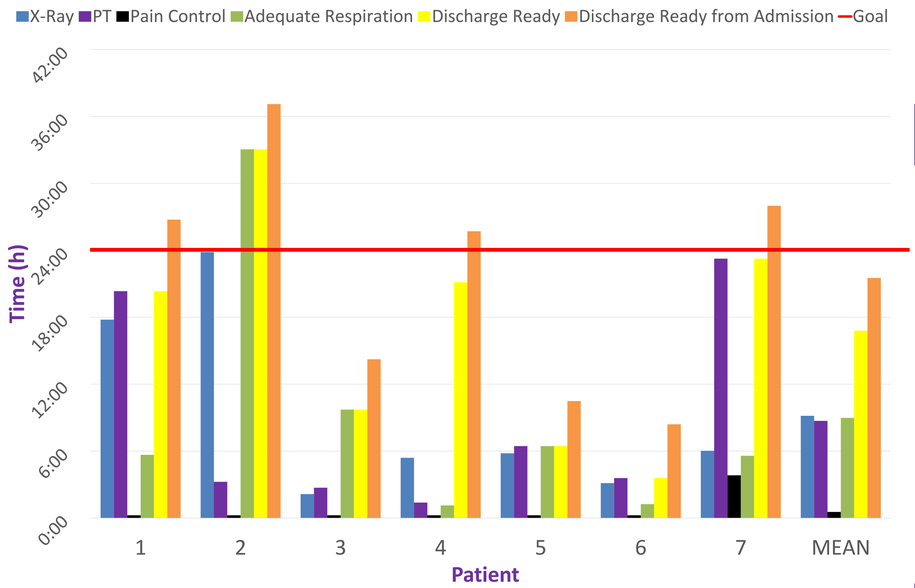

Figure 1. Time of Readiness to Discharge and other parameters

Primary Outcomes
- 6 of 7 patients achieved discharge criteria < 24h from PACU (Mean 16h 47 min, SD 10h33min). 3 of 7 did so <24h from hospital admission
- Very low pain scores: 1.4 (+/- 1.8) on morning of POD#1
- High satisfaction rates: 94% (+/- 7%)
- Low post-op opioid consumption: 29 +/-28 mg oral oxycodone equivalents with the exception of Patient 7 whose CSIB catheter got accidentally removed at 22:00 on POD#0

Results

Table 3. Outcomes

Patient	1	2	3	4	5	6	7	Mean	*SD*
Pain on POD#1	0	0	1	4	1	0	4	**1.4**	*1.8*
Satisfaction (%)	100	85	85	100	N/A	95	100	**94**	*7*
Opioid Consumption*	15	10	5	25	70	10	70	**29**	*28*

*oral oxycodone equivalents (mg)

Discussion

- We identified and addressed the logistical barriers to discharge
- Bottlenecks to discharge:
  - Delayed OT assessment (can be done as outpatient)
  - Delayed PT assessment (improved with 8 am surgery)
  - X-rays (fixed by interdisciplinary communication)
- We achieved our goal of patient readiness to discharge by 24h from PACU time in 6 out of 7 patients.
- Future:
  - Discharge with a referral to CCAC
  - CCAC support: beneficial for safety and follow-up
  - OT assessment: preop &/or home
  - 8 AM surgery: shortest time to discharge readiness

Conclusions

- Creation and testing of a screening tool to identify same day TSA candidates
- Use of our Expedited Pathway including CISB for analgesia: controls factors that increase post-operative length of stay
- TSA can potentially be performed as an outpatient procedure in a significant subset of patients
- We need rigorous pre-screening of patients to identify any conditions that may delay discharge
- Clear communication with the perioperative team regarding patients in the Expedited Pathway

References

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