UC Davis Lower Extremity Free Flap
ERAS Pathway

Updated 4.7.23

Preop Pathway

Inpatient

Potential Tests to be Ordered:

- CTA BLE (eval thigh-based perfs and vascular status of leg) - should include entire external iliac with runoff to foot
- Duplex BLE: eval for DVT and venous insufficiency superficial/deep system

Outpatient

Oral Intake

NPO solids after midnight, clears until 2 hours prior to surgery
12oz carbohydrate beverage en route to hospital

Meds (To be given in Preop)

SQH Heparin 5000
Gabapentin 600mg (reduce to 300 mg if CrCl 30–60 mL/min or age >65; hold for CrCl <30)
Celecoxib 400mg

Intraop Pathway

Avoid arterial line placement (unless warranted secondary to comorbidities per anesthesia)

Volume:
Balanced electrolyte solution aimed at euvolemia, 1–4 mL/kg/h (minimize fluid overload)
Maintain systolic pressures at or above pre-op values. Albumin preferred, then pressors if needed.
If vasopressors are needed please inform the operating surgeon.

- 1st Choice - Norepinephrine - Dosage 0.04-0.4 mcg/kg/min (2-20mcg/min)
- 2nd Choice - Dobutamine - Dosage 2-20 mcg/kg/min
- May use ephedrine and phenylephrine, attempt to avoid if possible prior to flap dissection.

Maintenance of neuromuscular blockade with vecuronium infusion

Temperature:
Before induction please use the under body + lower body Bair hugger. During the procedure please use a hotline, under body + lower body Bair hugger and cover the patient's head to keep the patient warm.

Medications:
Acetaminophen 1000 mg IV q 8 hours following preop dose
Ondansetron 4mg IV 30 minutes prior to emergence

Postop Pathway

POD 0

Flap
Q1 hr nursing flap checks
Evening resident flap check at 6 hours following anastomosis
Bair hugger at medium temperature over flap

Meds
ASA 325 PO immediately postop

Perioperative Ancef x24hrs (if not on antibiotics already)

- Confirm with attending (may need longer course depending on hardware exposure, etc)
- Clinda if Ancef allergy or PCN anaphylaxis

Acetaminophen 1g q8hrs
Gabapentin 100 TID (hold if excessively sedated, hold for CrCl<30)
Roxicodone 5/10mg q4h PRN moderate to severe pain

Miralax
Zofran PRN (+ 2^{nd}/3^{rd} line agents)

Hydroxazine prn pruritis (no Benadryl)
Melatonin qHS PRN

Resume specific home meds (hold HTN meds and gradually restart later over hospitalization if hypertensive)

PO
Clears
Maintenance IVF

Activity
Strict Bedrest, Foley stays
Position: Strict leg elevation

Prophylaxis
Incentive spirometer (ensure using + deep breathing exercises)
SCD on contralateral extremity

Other
Intermittent pulse ox/vitals; tele if medically indicated for other comorbidities

POD1

Flap
Early AM resident flap check
Noon resident flap check, Evening flap check by night team
Q1hr -> Q2hr flap checks after 24hrs (if no flap issues)

Labs
AM CBC + BMP

PO
Regular diet (if no flap concerns) + protein shake supplementation
D/c maintenance IVF

Activity
Continue Foley
Continue strict bedrest with leg elevation

Meds
ASA 81mg PO daily in AM
Lovenox vs SQH PPX to start in AM

POD2

Flap
Q4 hr flap checks

Labs
Every other day labs if no critical values

Activity
OOBTC with strict leg elevation on chair & pillow - no dangling
D/c Foley
PT/OT for transfers to chair and upper extremity exercises

POD6

Flap
D/c Bair Hugger

POD7

Start Dangle Protocol

5 min dangle x1 **without compression**

- Monitor signals and for clinical congestion during dangle
- If any signs of congestion, stop dangle and repeat same dangle length following day (applies for congestion at any subsequent time as well)
- Confirm healthy flap and good signals upon re-elevation
- If no issues, advance as follows:

5 min TID subsequent day **with gentle ACE compression at all times including dangles**
(confirm compression with attending - should only be done by residents/PAs/attendings)

- Wrap from toes over flap (most important) and proximal, not too tight but not falling off
- Nurses can peak under wrap for flap checks
- Continue same monitoring and advancement criteria by day

10 min TID

15 min TID

- Can start crutch training with PT during dangles

20 min TID

30 min TID

Discharge

When achieved 30 min TID dangle

Meds:

- ASA 81mg daily x1 month
- Acetaminophen 1g q8 hours x 2 weeks
- Roxicodone 5mg q6hr PRN – prescribe based on inpatient hospital requirements. Do not exceed 2 weeks.
- Gabapentin 100mg q8h x 2 weeks (hold for compromised renal function)
- Miralax
- Lovenox PPX if pre-op Caprini >7 (confirm with attendings)

Post Operative Flap Checks

If a nurse calls you about a potential flap problem - please see it! Most of the time it's fine, but often something is brewing.

And subsequently if you have ANY concerns - please call the attending!

Flap Exam

- Doppler – triphasic arterial signal at blue prolene stitch
- Cap refill 1.5-3 seconds
- Temp difference – skin island vs control
- Color – look for flap paleness, duskiness/congestion (vs hyperemia)
- Firmness – flap should be soft
- Swelling – new fullness/ swelling is concerning. Hematoma is secondary to flap congestion until proven otherwise
- SBP goal is at or above preop BP. Lower extremity vessels can go into spasm when hypotensive. HTN meds held first few days – (if absolutely needed: consider PRN IV for SBP>160 ***sustained*** – confirm with RN BP checked in arm not leg - must order 'cardiac monitor during and 2 hours post' – clear with Chief Resident)

Emergency – notify team immediately for possible OR take back for the following:

- Venous congestion – possible thrombosis vs. more likely kink, twist, turn in pedicle
  - Dusky, congested skin island, swollen flap, dark & rapid blood egress on scratch
  - Blood not exiting so will continue to have Doppler signal (though may be more water hammer – biphasic/monophasic)
  - Cap refill <3 sec (brisk)
  - Possible hematoma (any hematoma in flap pt is suspect for congested flap)
- Arterial compromise – possible thrombosis or anastomotic compromise
  - Loss of Doppler, cap refill >3 sec, decrease temp, pale skin island, poor turgor