VASCULAR SURGERY

ATTENDINGS

Matt Cunningham-Hill, MD
Cara Lyle, MD
Katsiaryna Paulovich, MD
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Thomas Serena, MD
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FELLOWS

Sagar Patel, MD 317-850-2492
Gabriel Castro, MD 787-207-1060

MIDLEVELS (71400)

David Vitez, PA-C
Landy Wang, FNP-C
Rachel Weston, NP-C, APRN

USEFUL PHONE #S

Service Phone	75279
Vascular Midlevel Phone	71400
Care Manager	75282
HVI Utility Room Code	2017#
HVI OR Front Desk	74012
HVI OR Charge Nurse	75504
HVI Charge Anesthesia	76274
HVI 2SE Pre/Post Front Desk	76373
Vascular Lab Tech	72297
Vascular Ultrasound	74127
Dialysis Unit	74108
CVICU APP	79409
CVICU APP Phone	(681) 285-7580
CVICU Attending Phone 1	(304) 216-9364
CVICU Attneding Phone 2	(304) 244-9088

CONFERENCES: **Mondays 3 pm** in HVI 7th floor

Please make every effort to attend education conferences and avoid time off on conference days.

TIPS FOR SERVICE

- Helpful order sets:
  - HVI: SVASC: ADMISSION
  - VASC INPATIENT PRE-OP
  - HVI: SVASC: PRE-PROCEDURE FOR GENERAL AND MAC PROCEDURES
  - HVI: SVASC: PERIPHERAL ANGIOGRAPHY/INTERVENTION
  - HVI:SVASC: CAROTID ARTERY STENT POST-OP
  - HVI: SVASC: CAROTID ENDARTERECTOMY POST-OP
  - HVI: SVASC: INTRAARTERIAL THROMBOLYSIS – ALTEPLASE HVI: SVASC: VENOUS THROMBOLYSIS: IP
  - SVASC EVAR: IP
  - HVI: SVASC: POSTOP TEVAR WITH SPINAL DRAINAGE
  - HVI: SVASC: OPEN AAA REPAIR POST-OP
  - HVI: SVASC: OPEN VENOUS PROCEDURE - DISCHARGE
  - VASC: DISCHARGE ORDERS: IP
  - HEPARIN PROTOCOLS: (FLAT RATE NO BOLUS, LOW INTENSITY ORSTANDARD)

- Every patient should be started on aspirin and a statin (unless otherwise specified by the attending) if they are not already - it is a Vascular Surgery Auality Initiative (VQI) measure
- **Consents for any IV sedation cases need both a procedure AND sedation consent.**

- Most patients who get an arterial stent should be started on Plavix if not already on it with a loading dose of 300 mg on the day of intervention and then 75 mg/day thereafter for three months. Be sure to clarify this with the attending.
- Before surgery every patient in the hospital should have a pre-operative check list note that is thoroughly reviewed and completed. (.VASCSURGPREOP)
- Every inpatient note has a comorbidity and risk factor assessment with smart text. DO NOT DELETE ANYTHING IN THIS, fill it out completely and update it as patient conditions change. If the patient is on another service or a consultant is managing the comorbidity, then note "Management: per primary and/or consultant team." The heading for this in the notes is: ***Current Comorbid Conditions And Risk Factors - Vascular Surgery***

VASCULAR SURGERY

ROUNDS

- Starts at 6:00 am weekdays. Weekends will vary. Be sure to check with the fellow on call regarding weekend rounding times.
- Interns should carry the vascular dressing bag onrounds and keep it stocked with supplies.
- Be proactive and help change the dressings on daily rounds.
- **DO NOT LOSE THE DOPPLER!**
  If it is lost please notify the team immediately.

CONSULTS

- All consults from 8 am – 5 pm during the week should go to the patient's primary physician if they have an established provider.
- After 5 pm weekdays and on the weekends all consults and patient issues should go to on call staff **(this includes all notes including post-operative check notes).**
- All vascular patients allergies should be reviewed ESPECIALLY CONTRAST ALLERGY and REACTION and Heparin Induced Thrombocytopenia (HIT)
- For wound consults, start with a detailed motor, sensory and pulse exam. If pulses are not palpable, but dopplerable, then recommend ABI/PVRs.If the extremity is pulseless and there is concern for acute limb ischemia, notify the senior resident, fellow or staff urgently/emergently.
- Please take and upload wound photos to the EMR when possible.
- Obtain CXR post-operatively for a TCC placement and write an MD to nurse order stating it is cleared for use after this is reviewed

- All lines should be placed with junior, senior OR fellow level supervision and under sterile conditions.
- **Must know information for line consults:**

Niagra (Temporary Dialysis Line):

- Is dialysis need urgent or emergent?
- Are they on anticoagulation?
- Review prior imaging to check for central stenosis or thrombus
- Selecting lines:
  - **The femoral vein is the preferred access site for a temporary dialysis line.**
  - Trialysis catheters (triple lumen, one can be used for other infusions):
    - Right IJ 12.5 Fr 16 cm
    - Left IJ 12.5 Fr 16 cm or 24 cm depending on pt size (needs to reach RA)
    - Femoral 12.5 Fr 24 cm
  - Double lumen catheters:
    - Right IJ 13.5 Fr 16 cm
    - Left IJ 13.5 Fr 16 cm or 24 cm depending on pt size (needs to reach RA)
    - Femoral 13.5 Fr 24 or 30 cm

TCC (Tunneled Cuffed Catheter):

- Can the patient lay flat?
- How many lines have they had in the past? If multiple, then obtain venous duplex of neck
- Are they on anticoagulation?
- Do they need it (i.e. does nephrology think they need)?
- Do they have a fistula, is it mature, can it be used?
- Are blood cultures negative?

- **Must know information for IVC filter consults:**
  - Do they need it (i.e. what is the true contraindication to anticoagulation)?
  - Where are the DVTs and how extensive?
  - Are they allergic to contrast dye?
  - Calf Vein DVTs with contraindication to anticoagulation can be followed with duplex in most situations
  - If patient has had a massive pulmonary embolus or pulmonary hypertension, then a filter may be indicated to prevent death from further embolic event
  - What are their renal function parameters (do they need to be done with IVUS)?

- **Must know information for fistulas:**
  - Need conscious sedation and procedure consent.
  - **Need POTASSIUM check on the day of procedure. Procedure will be canceled for hyperkalemia.**
  - Can patient lay flat – if not, does patient need Niagara and go to dialysis
  - When was last dialysis – will patient need dialysis after the procedure before leaving the hospital (may require telephone call to Nephrology)

- **Must know information for angiograms:**
  - Need conscious sedation and procedure consent if being done under moderate seadtion
  - Can patient lay flat?
  - Are access sites (particulalry grions) free from rashes, infection?
  - Contrast allergy – pretreatment indicated?
  - BUN/Creatinine: if elevated creatinine – CO2 may be indicated

CALL

- 24 hour call is 6am – 6am.
- After 5 pm weekdays and on the weekends all consults and patient issues should go to on call staff **(this includes all notes including post-operative check notes).**
- Junior on call should be called for vascular issues. If there is a vascular surgery fellow on call, all calls should be discussed with the fellow on call first who will then discuss with the attending. If for some reason you are unable to reach the fellow, then call the attending. Sign out night time events every morning before leaving the hospital
- Preop patients need preoperative note.
- Postop patients need postoperative note.

VASCULAR SURGERY PROTOCOLS

POSTOPERATIVE ORDER SET FOR CSF DRAINAGE FOR VASCULAR SURGERY

Vital Signs

- Neuro Checks. Call **Vascular Surgery Attending** immediately if any change in neuro status. **Q 1 hour**

Activity

- HOB Elevation < 30 degrees during bed rest
- Clamp drain for any patient turning/moving
- Strict bed rest while drain is actively draining
- Ok for OOB to chair once drain capped (must stay capped while in chair)
- Bed rest x 2 hours after drain removal

NURSING

Nursing - Monitoring

- Transduce and document CSF pressure using a flush-

less transducer system and the bedside monitor **Q 1hour**

- Monitor and record CSF volume drained **Q 1hour**
- Transduce and monitor MAP, call **Vascular Surgery Attending** if MAP < 90 **Q 1hour**

Nursing – Wound and Drain

- Assess CSF drainage site/dressing every 4 hours until CSF drain discontinued; document and notify ifchange
- If CSF becomes blood tinged, immediately cap drainand call **Vascular Surgery Attending** and **Neurosurgery on call**

Nursing – Drain management

- Level zero-point of CSF drainage assembly to right atrium
- Set drainage set –point to 10 mmHg. Do not change level without speaking with the **Vascular Surgery Attending**
- a) If CSF pressure > 10 mmHg, open the drain and drain 10 mL CSF, then reclose the drain and check CSF pressure

  b) If CSF pressure remains > 10 mmHg, repeat step a)to a maximum amount of 20 mL CSF in 1 hour

  c) If CSF drainage is required more than twice in 1 hour and the total amount of drainage would exceed20 mL in 1 hour, notify **Vascular Surgery Attending**

MEDICATIONS

- Phenylephrine in NS 100 mg/250mL (400 mcg/mL) IV

infusion 25 mcg/min (3.75ml/hr), IV infusion, CONTINUOUS

To maintain MAP greater than 90 IF neuro changes occurin lower extremities. Call **Vascular Surgery Attending** prior to starting.

Recommended starting dose: 25 mcg/minute

Recommend to titrate/taper: 12.5-25 mcg/minute every 3 minutes to MAP greater than 90. If no response may titrate in increments of up to 50 mcg/min every 1 minute
Soft maximum dose: 300 mcg/minute

DRAIN REMOVAL

- CBC
- PT/PTT
- Transfuse platelets if platelets < 100
- Transfuse FFP if INR > 1.3
- Cap drain x 6 hours, if any neurologic changes occur, re-open drain and call **Vascular Surgery Attending**

SURGICAL/PROCEDURE FOLLOW UP FOR VASCULAR SURGERY

The following is subject to attending preference. Always check with the fellow and/or attending to be sure:

Phlebectomy/Open Vein Stripping - 1 week f/up for wound check and suture removal if necesssary

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AVF creation - 2 week f/up for wound check, 4-8 week f/up thereafter w duplex for flow volume

AVF graft creation - 2 week f/u for wound check, 4-8 week f/up thereafter
w/ duplex for flow volume

Fistula revision - 2 week f/u for wound check, 4-8 week f/up thereafter w/
duplex for flow volume

Aortogram with runoff - 4 week f/up with arterial duplex study and ABI/PVR,

Angiogram Lower Extremity - 4 week f/up with arterial duplex study and ABI/PVR

Fistulogram - no f/up needed unless specified by attending surgeon. Stitch can be removed at dialysis in 1 week.

IVC filter placement - f/up in 3 months to evaluate for removal

IVC filter removal - no f/up needed unless a stitch needs to be removed

TCC exchange – 2-4 week f/up for upper extremity dialysis access mapping for dialysis access creation

TCC placement – 2-4 week f/up for upper extremity dialysis access mapping fordialysis access creation

CEA/CAS/TCAR - 4 week f/up with carotid duplex

AKA/BKA - 2 week f/up for wound check

EVAR - 4 week f/up w/ CTA stent graft protocol and aortic duplex

Bypass - 2 week f/up for wound check and 4 week f/up w/ arterial duplex study and ABI/PVR

Iliac artery angioplasty or stent - f/up 4 weeks with aortoiliac arterial duplex study and ABI/PVR

Updated 5/2025 CL