



AmSECTOMORROW

THE NEWSROOM

Advice from a 2nd Year Perfusion Student



BY CHISTINE TOONE, UTAH

1=3

Synergy is the idea that when people work together collaboratively, the result is greater than the sum of their individual efforts. In the case of a perfusion class, this means that by combining their knowledge, skills, and perspectives, they can achieve more as a team than they could as individuals. One important thing my class did early on was set aside competitiveness and egos. Choose to help each other through the difficult material and concepts, rather than facing it alone.

Love the Lab

The simulation lab is a safe and controlled environment to gain practical, hands-on perfusion skills without any risk to patients. The lab is the best place to build confidence and proficiency with the circuit. When possible, experiment with clamps, stopcocks, and transducer placement. You will soon learn that there are often many ways to accomplish the same result.

Make Checklists Your Friend

Checklists aren't just for bypass. Checklists will help you stay focused, organize workloads, reduce stress, and manage time effectively. Juggling numerous responsibilities, it can be overwhelming to determine which tasks are most important. Identify high-priority tasks and move them to the top of your checklist. One of my favorite pieces of advice is, "If it takes less than 2 minutes of your time, just do it now."

Get to Know Your Faculty

Most perfusion programs often offer generous teacher/student ratios allowing for an intimate classroom setting. Use this to your advantage by building relationships with approachable professors. Reach out to professors during their office hours for questions, discussions, and feedback.

Be Patient with Yourself

Everyone will make mistakes, and have setbacks, even failures. Learn to accept obstacles and move forward. Receiving constructive feedback is another crucial skill

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to learn. Try to separate your feelings from the feedback and see it objectively. This feedback will make you stronger and better your practice, even if it doesn't feel like it in the moment.

Make a Budget

Start by tracking your expenses and identifying spending habits. Make a comprehensive list of expenses (rent, tuition, transportation, etc.). Identify sources of income, including scholarships, grants, financial aid, and other support. Allocate money to each expense category. Continue to track and review your budget monthly to ensure financial goals are met. Lastly, find and use all student discounts available to you. Student discounts can apply to more than just your local lunch spot- check with your insurance provider, cell phone carrier, streaming services, and even Amazon Prime.

Reach Out if You Need Help

Perfusion school is HARD. You *will* reach a point where you feel like maybe this isn't for you, or maybe you're not cut out for this. That feeling is normal and we have all been there. Lean on those around you and be vocal about those feelings. If possible, reach out to a fellow classmate, upperclassman, or perfusion mentor regarding your situation. Work closely with counseling services or mental health professionals at your institution. If you feel comfortable, discuss your challenges with your program director who may be able to provide additional resources and accommodations.

Build Your Support System

Perfusion school presents a unique set of challenges that nobody can face alone.

**"HAVING A STRONG SUPPORT SYSTEM
CAN BE THE DIFFERENCE BETWEEN
"MAKING IT' OR LETTING IT BREAK
YOU. "**

The Newsroom continued...

Build a support system that includes faculty and perfusionists, in addition to friends, family, and significant others. Mentorship is crucial to success. A quality mentor can help you navigate research projects, professional development, conflict management, and career opportunities.

BACK TO THE STACKS



BY CHARLOTTE CLONTS, UTAH

Classroom learning and lab simulations are the basis for learning in 1st year. Luckily, other ways exist to learn about cardiac surgery and perfusion-specific history.

Something the Lord Made is an inspirational movie telling the true story of Vivien Thomas and "Blue Baby doctor" Alfred Blalock-- where together they complete the first successful operation on a tetralogy of Fallot patient. If you enjoy reading, *Open Heart* is a thrilling memoir by Dr. Stephan Westaby, a cardiac surgeon who tells the stories of his time in the OR. This book is informative, moving, and fascinating.

GOOFS & BLUNDERS

I was bumping up to the aortic cannula. First time on a centrifugal pump and had the RPMs a bit too high, took off the clamp and *WOOSH...* started spraying the field with plasma-late. Ultimate sign of a new guy! - ZG

I was breaking down a pump and may or may or may not have left the water lines open. I disconnected from the oxygenator and starting flooding the floor. So, turn water lines OFF before removing them. - CC

MAKE MISTAKES, LEARN FROM IT AND MOVE ON QUICKLY!

During a case, we were 4 hours into our pump run, and the surgeon asked how I was doing. I said, "I'm good, how are you?" She played it off and responded, "I'm good, thank you". She was definitely asking about the patient, not me. I was mortified. - CC

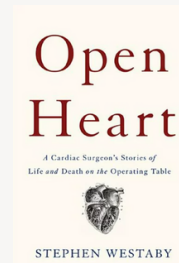
Second time in the OR as a student.

Anesthesia gave me a sample for baseline ACT that we (perfusion) can run on the HMS machine. I thought he was just showing me what a sample looked like... so I took it said thank you and threw it away. - KS

I was priming my pump and noticed a large puddle of water underneath my reservoir. Didn't attach the vent line from the MPS, it was just laying there. Oops. - AD



SAVE THE DATE!



Trivia Question: A dissection that is confined to the ascending aorta is classified as Type ___ DeBakey.

Answer on bottom of pg.4

THE VITALS

BY LAUREL EGERTER, UPMC



Totally Endoscopic Robotically Assisted Coronary Artery Bypass (TECAB)

Open heart surgery through a full median sternotomy with bypass is arguably as invasive as it gets. As surgical robots become more sophisticated and with surgical techniques progressing, the idea of performing minimally invasive heart surgery becomes more of a reality. The main benefit associated with using robotic assist with cardiac cases is the decrease of surgical trauma leading to quicker wound healing and return to normal life for the patient. The main caveat associated is the increased bypass and myocardial ischemic times compared to patient's undergoing a full sternotomy.

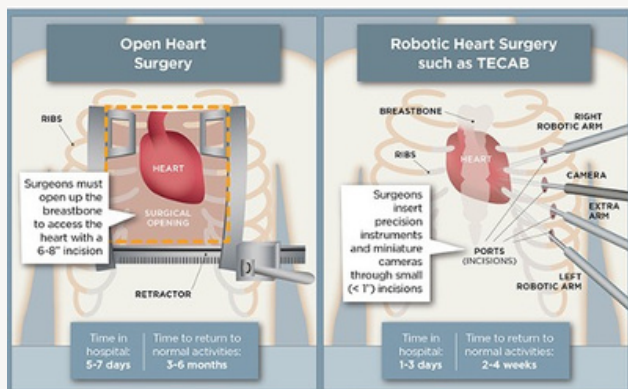


Figure 1.

Totally Endoscopic Robotically Assisted Coronary Artery Bypass (TECAB) at the University of Pittsburgh Medical Center allows for one or multiple grafts to be performed without a sternotomy but with the heart arrested. It begins with 4-5 one inch incisions along the chest wall where the ports are introduced so the robot's arms can gain access (Figure 1). Once inside the chest, the LIMA was harvested, if needed the RIMA could also be. The drainage cannula in this case was a 25 multistage femoral venous cannula. For return,

19 Edwards Endo balloon sheath with a 19 Fr Getinge femoral cannula was utilized in the right femoral artery. For distal perfusion, a 6 FR perfusion cannula was used. The arterial cannula's side arm allows for an endo-balloon cross clamp, called the Intraclude (Figure 2a), to be advanced to the aortic root with a guide wire. The balloon's placement is confirmed in the aortic root via TEE. The correct placement of the balloon is critical to the success of the surgery. It is connected back to pressure tubing on the heart lung machine to monitor.

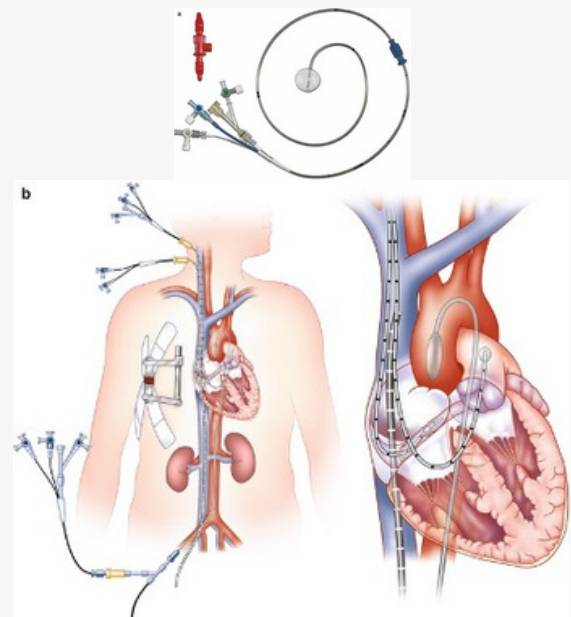


Figure 2.

Once heparinized, CPB was initiated slowly. Upon increasing flows, the arterial line pressure was notably increased and was alerted to the surgeon. The surgical team decided to cannulate the left femoral artery for dual return from the heart lung machine. Throughout the case, the root, endo-balloon and patient pressure were all closely monitored. At this point, the balloon is inflated to a pressure of 300-400 mmHg and infusion of cardioplegia begins. The cardioplegia used was an initial syringe of 6 mg adenosine and Del Nido solution at a 1:4 blood to crystalloid ratio. Maintaining the placement of the balloon while running cardioplegia into the root is complex and critical. If the balloon's placement shifts due to a root pressure

The Vitals continued...

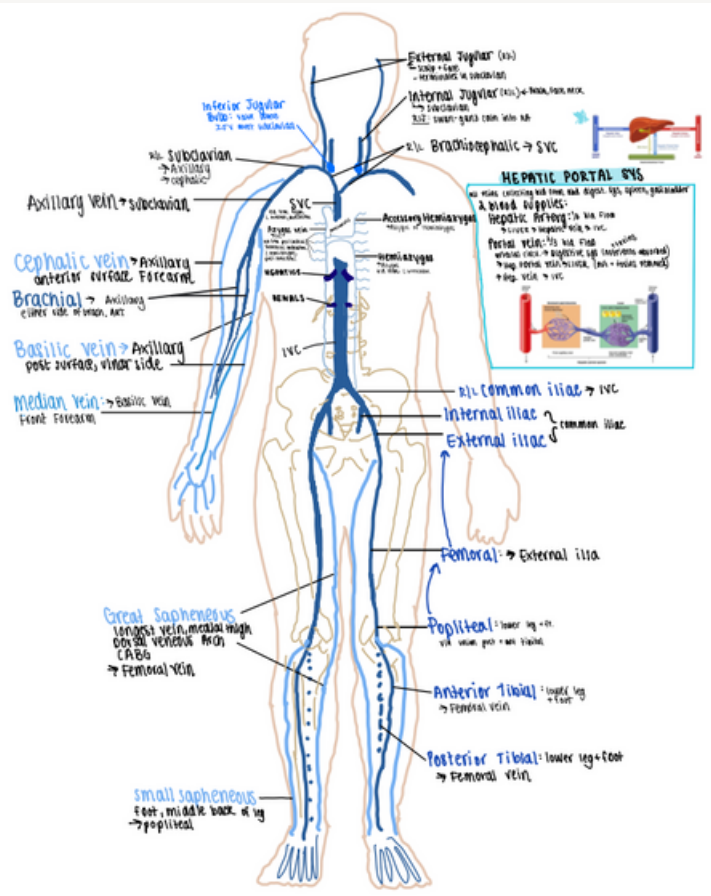
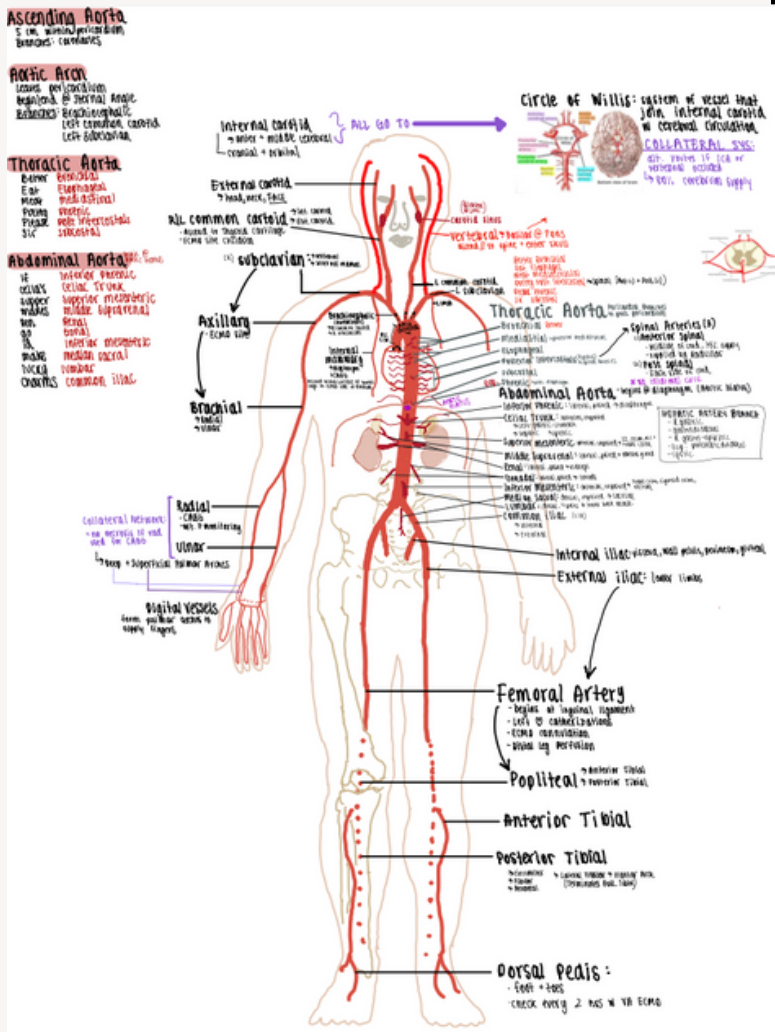
greater than the balloon's pressure, it could slide distally and block head vessels. Vice versa, if the root pressure is too low and the patient's pressure is elevated, the balloon could move proximally and block the coronaries. Root pressure is controlled throughout the case using a root vent. The root pressure was very sensitive to volume changes and only needed to be on 1 RPM for the most the case with slight increases to 2 RPM with quarter inch tubing.

After the surgeon completed his anastomoses, the root was actively vented, and the endo balloon deflated to initiate reperfusion. Magnesium sulfate and lidocaine were administered due to surgeon protocol. Sinus rhythm returned and the patient was weaned from bypass.

Additional resources:
AmSECT also provides the Perfusion Without Borders Student Scholarship, which is a fantastic resource for making more mission trips possible for students!
<https://www.amsect.org/About/Awards-Designations-Scholarships/Cardiac-Missions/PWOB-Student-Scholarship>

THE HEART ROOM

Notes submitted by Laurel Egarter



THE RESERVOIR

AmSECT Student Membership

Student membership is now FREE! Register now and become an official part of the perfusion community.

<https://www.amsect.org/Members/Student-Corner>

Have a Perfusion blunder you want to share?

Please email charlotte.clonts@utah.edu to have your blunder included in the next issue!

Additional Resources:

The AmSECT website has a helpful page with information about different charitable organizations that provide cardiac care:

<https://www.amsect.org/About/Awards-Designations-Scholarships/Cardiac-Missions/Charitable-Organizations>

Before you go...

The AmSECT Student Council exists to promote student involvement within AmSECT. While our current members hail from half a dozen different programs, our goal is to have every perfusion program in the country represented on the council. Our major projects include an annual fundraising event and this very newsletter, with multiple opportunities for student leadership.

Our current officer team consists of a president/chief student liaison, vice president, fundraising project lead, communications coordinator, and newsletter editor. The Student Council meets monthly via Zoom for one hour, so the time commitment designed to be manageable!

INTERESTED IN JOINING THE STUDENT COUNCIL?

PLEASE EMAIL AMSECTSTUDENTHQ@GMAIL.COM AND BE SURE TO INCLUDE YOUR CONTACT INFORMATION. SHARE YOUR VOICE, DEVELOP YOUR NETWORKING AND LEADERSHIP SKILLS, AND BECOME INVESTED IN THE PROFESSIONAL DEVELOPMENT OF OUR FIELD! WE LOOK FORWARD TO SEEING YOU JOIN THE TEAM.