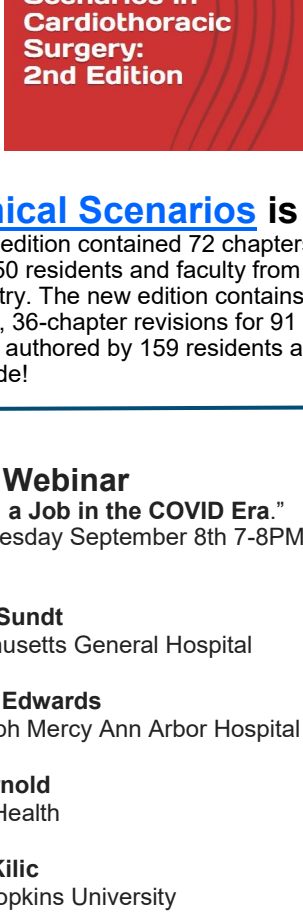


Announcements

Trainee Opportunities in CT Surgery

By: Justin Louis



JUSTIN WATSON
CLAUDEN LOUIS

Section Editors:
Alex Brescia
Jordan Bloom
Garrett Coyan

TSRA Clinical Scenarios in Cardiothoracic Surgery, 2nd Edition

By: Evan Rotar

Call for New TSRA Podcast Authors and TSRA Review 3 Textbook Chapter Authors!!!

We are expanding our popular **podcast** series with new ideas & topics see "TSRA featured podcast". We are also seeking authors for our Review Series textbook see link for sign up information.

Email: covangan@upmc.edu for Podcast
Site: TSRA Review [Sign Up](#)

Membership:

Medical Students, General surgery residents, cardiology fellows, and international cardiothoracic surgery residents are eligible for Associate Membership in the TSRA by submitting [this application form](#). (No deadline; rolling)

Clinical Scenarios is in !!!

The first edition contained 72 chapters authored by over 50 residents and faculty from across the country. The new edition contains 19 new chapters, 36-chapter revisions for 91 total chapters authored by 159 residents and faculty nationwide!

Kirklin/Ashburn Fellowship

at the Congenital Heart Surgeons' Society (July 2021-June2023)
Deadline August 31, 2020

Foundational Mitral and Tricuspid Skills Course now VIRTUAL

only meeting in October 2020. Please contact Mary Kay Keers at mary.kay.k.keers@medtronic.com.

TSRA Webinar

"Finding a Job in the COVID Era."
Date: Tuesday September 8th 7-8PM EST

Panelist:

Thoralf Sundt
Massachusetts General Hospital

Melanie Edwards

St. Joseph Mercy Ann Arbor Hospital

Scott Arnold

Banner Health

Ahmet Kilic

Johns Hopkins University

Christine Lau

University of Maryland

Vinod Thourani

Piedmont Healthcare

Register for the MD Anderson-UT Health Virtual Debate-Style Journal Club

via live webinar
SAVR vs. TAVR, 8/24 6:30pm-8pm CST

TSRA/STS Global Outreach Fellowship and Traveling Fellowship

in Cardiothoracic Surgery
(December 15, 2020)

AATS scholarships

STS scholarships

STSA scholarships

TSF Awards Program

Newsletter Editorial Staff

Clauden Louis — Editor

Evan Rotar — Editor

Jason Han — Young Surgeon's Notes

Jessica Luc — Manuscript of the Month

David Blitzer — Featured Podcast

Parth Patel — Abstract & Conference Dates

Yihan Lin — Global Health

Fatima Wilder — Diagnostic Challenge

Garrett Coyan — TSRA Educational Resources and Multiple Choice Questions

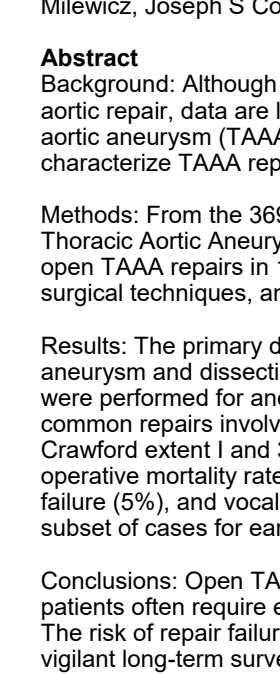
Young Surgeon's Note

The New Executive Committee Members 2020-2021

By: Jason Han

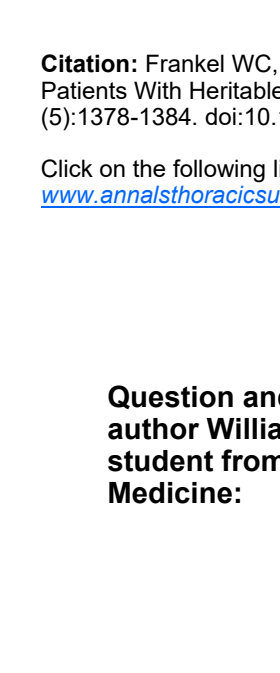
Dear TSRA membership,

As the new members of the executive committee, we would like to take this opportunity to introduce our newest executive committee members.



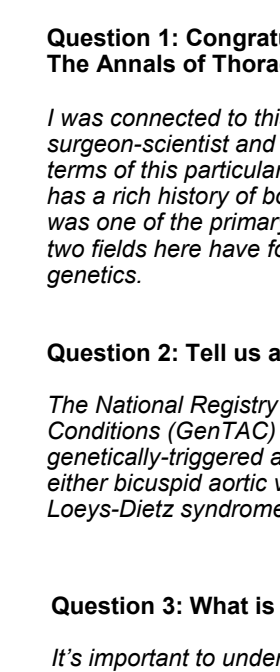
Jessica Luc: I am Jessica Luc and I am a PGY3 Cardiac Surgery resident from the University of British Columbia, Canada, with a passion for medical education, digital scholarship, surgical ethics, global surgery, and clinical and translational research. I am incredibly grateful for the opportunity to join the TSRA Executive Committee to further the mission of the Association and contribute to the Association's goals to create resources and provide support for residents to prepare them for success in residency and beyond.

Email: jessicagyluc@gmail.com or Twitter @JessicaLuc1



Yihan Lin: I am a PGY9 CT fellow at the University of Colorado, and am dedicated to expanding surgical care to underserved populations. I spent a few years living and working in Rwanda, Zambia, and the World Health Organization to advocate for and implement policies to increase surgical access in communities that need it the most. I hope to expand the TSRA's exposure and contributions to global surgery, and increase outreach to our colleagues and patients beyond North America. Let's work together to build sustainable global partnerships in service, education, and research.

Email: yihan.lin@mail.harvard.edu



Fatima Wilder: I am a clinical PGY9 CT surgery fellow at Johns Hopkins University. I am passionate about clinical and surgical education, research, mentorship and outreach to underrepresented minority groups in CT surgery. I am thrilled to be part of the TSRA Executive Committee and look forward to working with my colleagues to better serve our members. In addition to supporting the many ways in which the TSRA strives to support its members, it is my hope that we as new members can provide a unique perspective and support for women and minorities in the field of cardiothoracic surgery.

We are in the midst of a pandemic and social unrest that poses unprecedented challenges to surgical training. However, with any challenge, there, too, exist opportunities for improvement and innovation.

The role of the TSRA as a uniting force for our specialty's trainees is more important now than ever as we work towards enhancing the connection and collaboration among CT surgery trainees and find strength in our community. Although we are physically distanced, we must remain socially connected. Let's work together to create opportunities and resources for our current and future colleagues.

Please do not hesitate to reach out if you have ideas or initiatives you would like to see accomplished through the TSRA, any resources you would like created or shared, or if you have any questions or concerns at all. We look forward to serving and connecting with you all.

Manuscript of the Month

By: Jessica Luc

Title of Feature Manuscript:

Open Thoracoabdominal Aortic Repair in Patients With Heritable Aortic Disease in the GenTAC Registry

Authors:

William C Frankel, Howard K Song, Rita K Milewski, Sherene Shalhoub, Norma L Pugh, Kim A Eagle, Mary J Roman, Reed E Pyeritz, Cheryl L Maslen, William J Ravakes, Dianna M Milewicz, Joseph S Coselli, Scott A LeMaire, for the GenTAC Investigators

Abstract

Background: Although patients with various types of heritable aortopathy often require distal aortic repair, data are limited regarding the most extensive operations-open thoracoabdominal aortic aneurysm (TAAA) repairs. The objective of this multicenter registry study was to characterize TAAA repairs in a large cohort of patients with different heritable aortic diseases.

Methods: From the 3699 patients enrolled at 8 participating centers in the Genetically Triggered Thoracic Aortic Aneurysms and Cardiovascular Conditions (GenTAC) Registry, we identified 155 open TAAA repairs in 142 unique patients. We examined data related to clinical characteristics, surgical techniques, and outcomes.

Results: The primary diagnoses included Marfan syndrome (n = 76; 54%), familial thoracic aortic aneurysm and dissections (n = 31; 22%), and Loeys-Dietz syndrome (n = 10; 7%). Most repairs were performed for aneurysms associated with aortic dissection (n = 110; 71%). The most common repairs involved the entire descending thoracic aorta with distal extension (21% Crawford extent I and 36% extent II). Adjuncts used during repair varied substantially. The operative mortality rate was 1.3%. Other complications included paraplegia (4%), acute renal failure (5%), and vocal cord paralysis (21%). Reoperation after TAAA repair was required in a subset of cases for early bleeding (n = 15; 10%) and late repair failure (n = 7; 5%).

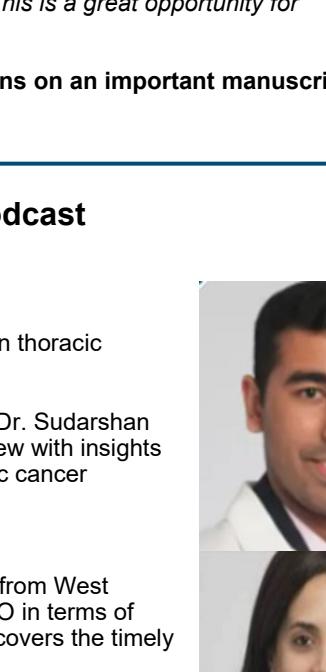
Conclusions: Open TAAA repairs are necessary in a variety of heritable aortic diseases. These patients often require extensive surgical repair, and a variety of adjunctive techniques are utilized. The risk of repair failure and the need for reoperation in a subset of patients support the need for vigilant long-term surveillance after repair.

Citation:

Frankel WC, Song HK, Milewski RK, et al. Open Thoracoabdominal Aortic Repair in Patients With Heritable Aortic Disease in the GenTAC Registry. Ann Thorac Surg. 2020;109(5):1378-1384. doi:10.1016/j.athoracsurg.2019.08.047

Click on the following link to read the full manuscript in The Annals of Thoracic Surgery:

[https://www.annalsthoracicsurgery.org/article/S0003-4975\(19\)31437-7/abstract](https://www.annalsthoracicsurgery.org/article/S0003-4975(19)31437-7/abstract)



Question and answer with lead author William Frankel, medical student from Baylor College of Medicine:

Question 1: Congratulations on your work and first-authored manuscript published in The Annals of Thoracic Surgery. What got you interested in this topic?

I was connected to this project through my mentor, Dr. Scott LeMaire, who is an incredible surgeon-scientist and the type of mentor who makes any project interesting and rewarding. In terms of this particular topic, I am incredibly fortunate to be at Baylor College of Medicine, which has a rich history of both cardiothoracic surgery as well as genetics (Baylor College of Medicine was one of the primary sites for the Human Genome Project). The history and culture of these two fields here have fostered my interest in the intersection of cardiovascular surgery and genetics.

Question 2: Tell us about the GenTAC Registry?

The National Registry of Genetically Triggered Thoracic Aortic Aneurysms and Cardiovascular Conditions (GenTAC) is an NIH-funded registry of patients with confirmed or suspected genetically-triggered aortic disease. The multi-center registry includes over 3,000 patients with either bicuspid aortic valve, Marfan syndrome, Turner syndrome, Ehlers-Danlos syndrome, Loeys-Dietz syndrome, familial thoracic aortic aneurysms and dissections, or other conditions

Question 3: What is the take-home message of your study?

It's important to understand that the study population is derived from a multi-center database, including several centers with extensive experience with open thoracoabdominal aortic aneurysm repair along with multi-disciplinary teams for patients with genetically-triggered aortopathy. In this context, I think the major take home message is that patients with genetically triggered aortopathy can have excellent outcomes after open thoracoabdominal aortic aneurysm repair at experienced centers. It's also worth mentioning that these excellent outcomes were achieved despite variation in adjunct utilization (eg, cardiopulmonary bypass vs. left heart bypass), suggesting that institutional and surgeon experience with this unique population may be at least as valuable as the particular armamentarium of adjunct techniques.

Question 4: What are the next steps for this study?

Although our multi-center database represents one of the largest cohorts of patients with genetically-triggered aortopathy, the low adverse event rates in our study (operative mortality and paraplegia/paraparesis rates of 1% and 4%, respectively) precluded rigorous analysis of risk factors for these events in this unique population. We know from a large single-center series of all comers that open thoracoabdominal aortic aneurysm repair is a major operation with significant morbidity and mortality. Therefore, in the future, we will need even larger databases in order to power more rigorous analyses which may help us better risk stratify and elucidate the optimal perioperative management of these patients. This is a great opportunity for collaboration down the road.

Once again, thank you for your time and congratulations on an important manuscript.

Featured TSRA Podcast

By: David Blitzer

Featured TSRA Podcast

This month, we feature two podcasts on important topics in thoracic surgery. In the first featured podcast

Dr. Mujtaba Mubashir discusses mediastinal staging with Dr. Sudarshan from the Cleveland Clinic. This podcast offers a good review with insights into what is an important part of clinical care for all thoracic cancer patients. In the second featured podcast

[MEDIASTINAL STAGING:](#)

Dr. Ankit Dhamija discusses VV ECMO with Dr. Hayanga from West Virginia University. This is an excellent review of VV ECMO in terms of patient selection, clinical care, troubleshooting, and even covers the timely issue of ECMO for COVID-19 patients.

[VV ECMO:](#)

Call for New TSRA Podcast Ideas

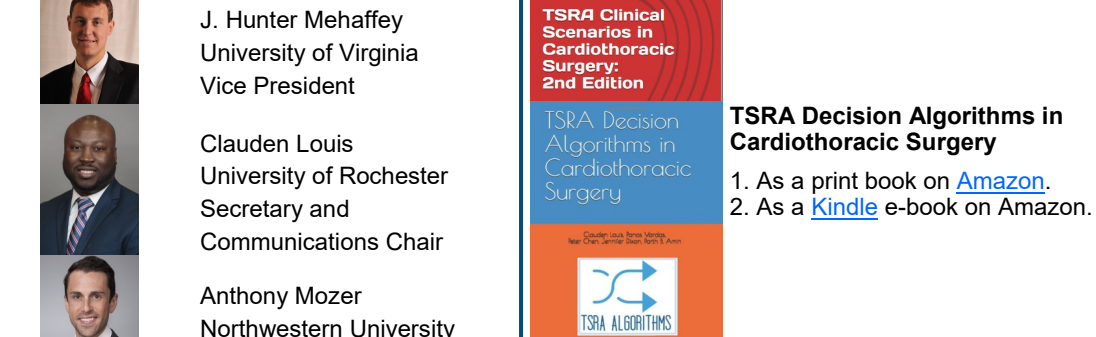
We want to expand our popular podcast series with new ideas & topics. Our existing collection is available on [Soundcloud](#) & [iTunes](#)

Here is a list of unclaimed topics that need to be recorded:

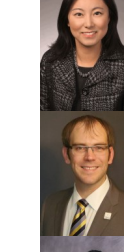
- Adult Cardiac
- Brain and spinal cord protection + neuromonitoring
- Electrophysiology (common arrhythmias, postop arrhythmias)
- SAVR: sutureless vs traditional
- General Thoracic
 - Advanced endoscopy + POEM
 - Interventional pulmonary skills for surgeons
 - Thoracic outlet syndrome
 - Esophageal motility disorders
- Congenital
 - Tricuspid atresia
 - Adult congenital heart disease
 - Interventional congenital heart procedures
 - Congenital mitral valve disease
- Career
 - Residents as teachers
 - Innovation in cardiac surgery
 - Quality improvement and outcomes
 - Ethics education in CT surgery: where are we now and where are we headed?
 - Ethical research practice in CT surgery
 - Imperative care vs. futility

If you are interested in recording one of the unclaimed podcast topics -OR- have new topics to propose, please contact Garret Coyan @ covangan@upmc.edu

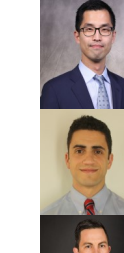
Communications and Social Media



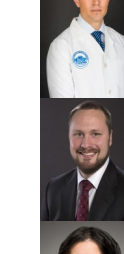
TSRA Executive Committee
(2020-2021)




Alex Brescia
University of Michigan
President



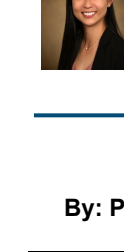
J. Hunter Mehaffey
University of Virginia
Vice President




Clauden Louis
University of Rochester
Secretary and Communications Chair



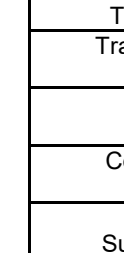
Anthony Mozer
Northwestern University
Treasurer



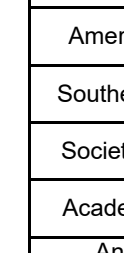
Xiaoying Lou
Emory University
Immediate Past President



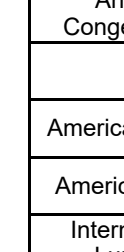
Garrett Coyan
University of Pittsburgh
Projects Chair



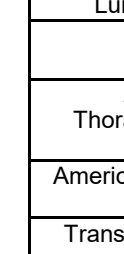
Jason Han
University of Pennsylvania
Education Chair



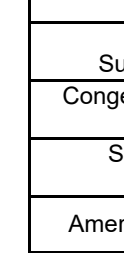
David Blitzer
Columbia University
Membership Chair



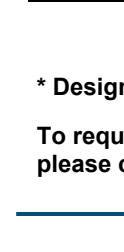
Jordan Bloom
Massachusetts General Hospital



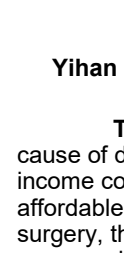
Justin Watson
Oregon Health & Sciences University



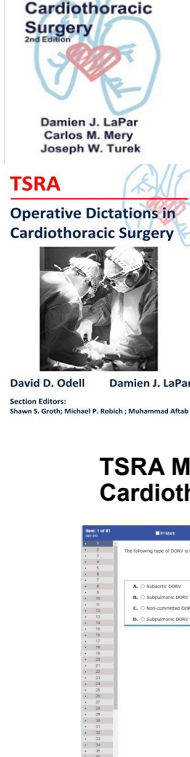
Jessica Luc
University of British of Columbia



Fatima Wilder
Johns Hopkins University



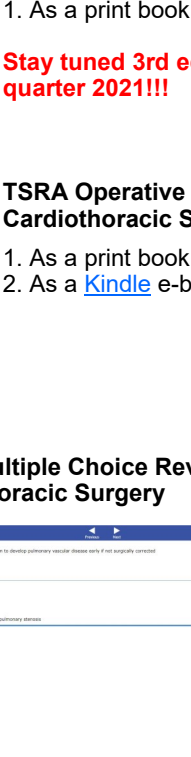
Yihan Lin
University of Colorado Hospital



TSRA Clinical Scenarios in Cardiothoracic Surgery (2nd Ed)

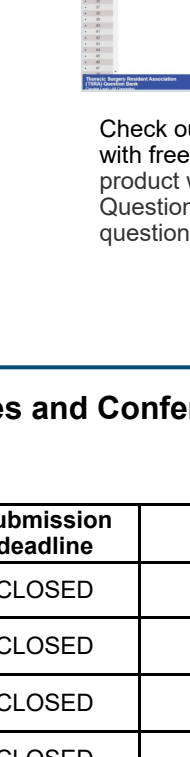
Kindle & print available **NOW!!!**

1. As a print book on [Amazon](#).
2. As a [Kindle](#) e-book on Amazon.



TSRA Decision Algorithms in Cardiothoracic Surgery

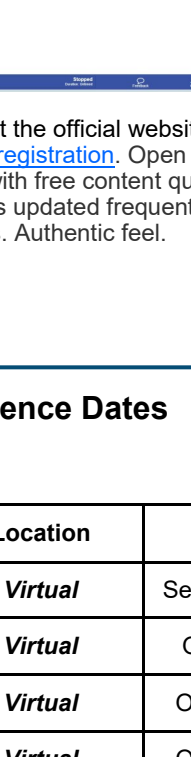
1. As a print book on [Amazon](#).
2. As a [Kindle](#) e-book on Amazon.



TSRA Review of Cardiothoracic Surgery (2nd Ed)

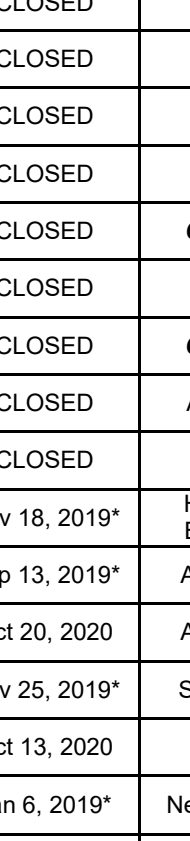
1. As a print book on [Amazon](#).

Stay tuned 3rd edition first quarter 2021!!!



TSRA Operative Dictations in Cardiothoracic Surgery

1. As a print book on [Amazon](#).
2. As a [Kindle](#) e-book on Amazon.



TSRA Multiple Choice Review of Cardiothoracic Surgery

Check out the official website with free [registration](#). Open collaboration product with free content questions. Questions updated frequently. 588 questions. Authentic feel.

Abstract Deadlines and Conference Dates

By: Parth Patel

Meeting	Submission deadline	Location	Dates
Extracorporeal Life Support Organization (ELSO)	CLOSED	Virtual	Sept 25-26, 2020
American College of Surgeons (ACS)	CLOSED	Virtual	Oct 4-8, 2020
Eastern Cardiothoracic Surgical Society (ECTSS)	CLOSED	Virtual	Oct 7-10, 2020
European Association for Cardio-Thoracic Surgery (EACTS)	CLOSED	Virtual	Oct 8-10, 2020
Transcatheter Cardiovascular Therapeutics (TCT)	CLOSED	Virtual	Oct 14-18, 2020
CHEST Annual Meeting	CLOSED	Virtual	Oct 17-21, 2020
Congenital Heart Surgeons' Society (CHSS)	CLOSED	Virtual	Oct 22-24, 2020
Southern Thoracic Surgical Association (STSA)	CLOSED	Cancelled	Nov 4-7, 2020
American Heart Association (AHA)	CLOSED	Virtual	Nov 14-16, 2020
Southern Surgical Association (SSA)	CLOSED	Cancelled	Dec 6-9, 2020
Society of Thoracic Surgeons (STS)	CLOSED	Austin, TX	Jan 30 - Feb 2, 2021
Academic Surgical Congress (ASC)	CLOSED	Virtual	Feb 2-4, 2021
Annual Update on Pediatric & Congenital CV Disease Conference	Nov 18, 2019*	Huntington Beach, CA	Feb 10-14, 2021
Southeastern Surgical Congress (SESC)	Sep 13, 2019*	Atlanta, GA	Aug 21-24, 2021
American College of Cardiology (ACC)	Oct 20, 2020	Atlanta, GA	Mar 20-22, 2021
American Surgical Association (ASA)	Nov 25, 2019*	Seattle, WA	Apr 15-17, 2021
International Society for Heart and Lung Transplantation (ISHLT)	Oct 13, 2020	Toronto, Canada	Apr 27-30, 2021
AATS Annual Conclave	Jan 6, 2019*	New York, NY	Apr 29-30, 2021
American Mitral of Thoracic Surgery (AATS) & Aortic Symposium	Oct 15, 2019*	Seattle, WA	May 1-4, 2021
American Society for Artificial Internal Organs (ASIAO)	Feb 3, 2020*	Washington, D.C.	June 9-12, 2021
Transcatheter Valve Therapy (TVT) Structural Heart Summit	April 15, 2020*	Chicago, IL	June 9-12, 2021
Western Thoracic Surgical Association (W TSA)	Jan 6, 2020*	Victoria, BC	June 23-26, 2021
Congenital Heart Surgeons' Society (CHSS)	May 26, 2020*	Chicago, IL	Oct 24-25, 2021
Southern Thoracic Surgical Association (STSA)	April 5, 2020*	Atlanta, GA	Nov 3-6, 2021
American Heart Association (AHA)	June 4, 2020*	Boston, MA	Nov 13-15, 2021

* Designates previous year's deadline, if current deadline not yet available.

To request inclusion of other specific meetings that may of interest to TSRA members, please contact Parth M. Patel, parth.mukund.patel@emory.edu

Global Cardiac Surgery: An Introduction

Yihan Lin MD MPH, Dominique Vervoot MD

The Burden of Cardiovascular Disease - Cardiovascular disease is the leading cause of death worldwide. The majority of these, nearly 15 million, are in low- and middle-income countries (LMICs).¹ 93% of the LMIC population lacks access to safe, timely, and affordable cardiac surgical care.² Of the over 4,000 centers worldwide able to perform cardiac surgery, there is a significant maldistribution - 1 cardiac center per 120,000 in North America as compared to 1 per 3.3 million in sub-Saharan Africa and 1 per 16 million in Southeast Asia.³ Similarly, while high-income countries have 7.15 cardiac surgeons per million population, low-income countries have only 0.04 per million.⁴

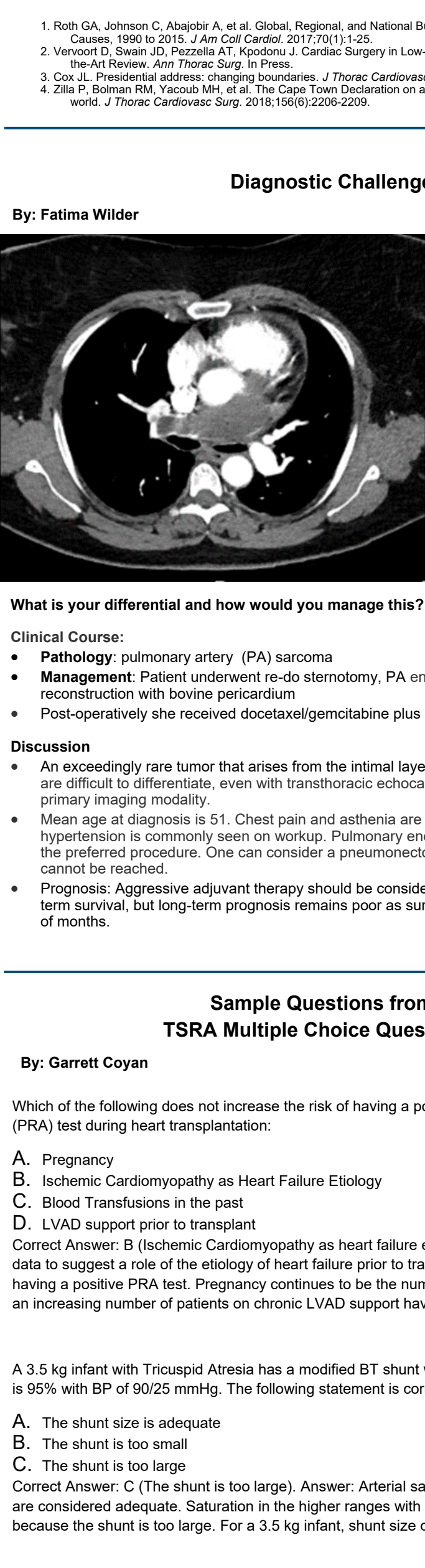
Cardiac surgery in global health - Conventionally, cardiac surgery's role within global health was confined to short-term, fly-in fly-out mission trips. However, there is a growing recognition of sustainable, locally-driven interventions with a focus on wider health systems. Various academic groups and non-governmental organizations have embedded such a focus within their existing institutional partnerships to meet the local needs and support local partners in their path towards the establishment and expansion of cardiac centers.

A Call to Action - In 2018, the leading cardiothoracic surgical societies and the World Heart Federation developed the Cape Town Declaration and established the Cardiac Surgery Intersociety Alliance to respond to the large global burden of rheumatic heart disease.⁴ However, efforts are nascent and remain focused on center-specific initiatives and may be expanded to larger-scale efforts addressing systemic gaps, lack of training programs, and the persistent scarcity of up-to-date information.

Opportunities for you as a resident - Various opportunities exist and may arise for cardiothoracic surgical residents, fellows, and programs to increase their efforts in the global cardiac surgery scene.

- STS Thoracic Surgery Foundation has financially supported trainees and programs to seek global health engagement through humanitarian trips and establishing bilateral academic partnerships with LMIC centers
- Edwards Lifesciences established the *Every Heartbeat Matters* award, which supports trainees and surgeons to obtain international clinical experience or expand global cardiac surgical initiatives.

How you can get involved - Momentum is building for the global cardiac surgery movement, but increasing recognition by societies and programs is necessary to better support trainees in getting involved clinically and academically. The TSRA is interested in developing more resources to create opportunities for all cardiothoracic surgical residents interested in global cardiac surgery. Please consider our TSRA/STS Global Cardiac Surgery Scholarship for 5000\$ deadline December 15, 2020.



56F with PMHx: Anxiety, OA, HTN and PE s/p pulmonary embolectomy

CC: Patient presents with SOB and decreasing stamina. No history of leg edema, recent travel or fever.

CTA Chest demonstrates the following:

What is your differential and how would you manage this?

Clinical Course:

- **Pathology:** pulmonary artery (PA) sarcoma
- **Management:** Patient underwent re-do sternotomy, PA endarterectomy /resection and reconstruction with bovine pericardium
- Post-operatively she received docetaxel/gemcitabine plus radiation for management

Discussion

- An exceedingly rare tumor that arises from the intimal layer of the PA. Thrombus and mass are difficult to differentiate, even with transthoracic echocardiogram and chest CT. MRI is the primary imaging modality.
- Mean age at diagnosis is 51. Chest pain and asthenia are common symptoms. PA systolic hypertension is commonly seen on workup. Pulmonary endarterectomy is the preferred procedure. One can consider a pneumonectomy if the tumor is distal and cannot be reached.
- Prognosis: Aggressive adjuvant therapy should be considered to improve postoperative long-term survival, but long-term prognosis remains poor as survival is typically on the order of months.

Sample Questions from the TSRA Multiple Choice Question Bank

By: Garrett Coyan

Which of the following does not increase the risk of having a positive Panel-Reactive Antibody (PRA) test during heart transplantation:

A. Pregnancy

B. Ischemic Cardiomyopathy as Heart Failure Etiology

C. Blood Transfusions in the past

D. LVAD support prior to transplant

Correct Answer: B (Ischemic Cardiomyopathy as heart failure etiology). Currently there is no data to suggest a role of the etiology of heart failure prior to transplantation on the likelihood of having a positive PRA test. Pregnancy continues to be the number one cause. More recently, an increasing number of patients on chronic LVAD support have a positive PRA test.

A 3.5 kg infant with Tricuspid Atresia has a modified BT shunt with 4.5 mm PTFE conduit. Spo2 is 95% with BP of 90/25 mmHg. The following statement is correct:

A. The shunt size is adequate

B. The shunt is too small

C. The shunt is too large

Correct Answer: C (The shunt is too large). Answer: Arterial saturations between 75 and 85% are considered adequate. Saturation in the higher ranges with DBP lower than 25-30 mm HG is because the shunt is too large. For a 3.5 kg infant, shunt size of 3.5 mm should be adequate.

An 8 cm anterior mediastinal mass seen on CT is heterogeneous with evidence of bone, cystic components, and other mixed tissues. Beta-HCG, LDH, and AFP are all within reference ranges. What is the next best step?

A. Core Biopsy of the lesion

B. Follow-up chest CT in 6 months

C. MRI chest w/o contrast

D. Complete surgical excision

E. No further treatment necessary

Correct Answer: D (complete surgical excision). This is classic for a teratoma. The diagnosis is made with negative tumor markers and CT appearance of multiple tissue types. However it is impossible to tell by imaging if this tumor contains cellular atypia and non-germ cell malignancies (sarcoma, PNET). For this reason excision is indicated, there is no role for neoadjuvant therapy or additional imaging.

1. Roth GA, Johnson C, Abajobir A, et al. Global, Regional, and National Burden of Cardiovascular Diseases for 10 Causes, 1990 to 2015. *J Am Coll Cardiol*. 2017;70(1):1-25.

2. Vervoot D, Swain JD, Pezzella AT, Kpodonu J. Cardiac Surgery in Low- and Middle-Income Countries: A State-of-the-Art Review. *Ann Thorac Surg*. In Press.

3. Cox JL. Presidential address: changing boundaries. *J Thorac Cardiovasc Surg*. 2001;122(3):413-418.

4. Zilla P, Bolman RM, Yacoub MH, et al. The Cape Town Declaration on access to cardiac surgery in the developing world. *J Thorac Cardiovasc Surg*. 2018;156(6):2206-2209.