



The Society for Cardiovascular Angiography and Interventions

SCAI President's Page

Pediatric Hybrid Interventions: One Family's Story

Ziyad M. Hijazi, MD, MPH, FSCAI
Director, Rush Center for Congenital
and Structural Heart Disease
Section Chief, Pediatric Cardiology
Professor of Pediatrics and Internal Medicine
Rush University Medical Center
Chicago, Illinois
President, The Society for Cardiovascular
Angiography and Interventions

and

Harini Kolluri, MD
Pediatrics Resident,
Cook County Hospital
Chicago, IL

Vinay Tumuluri, MD
Internal Medicine,
Director, Hospitalist Service
Laporte Hospital, IN



This month I have a story for you that ends with a very happy beginning. It is the story of Aditi—a 6-month-old baby girl on her way to a full, healthy life after a successful hybrid intervention. Dr. Harini Kolluri (Aditi's mother) and Dr. Vinay Tumuluri (Aditi's father) have joined me for this month's President's Page to talk about their experiences with Aditi's diagnosis and treatment.

Shortly after her birth, Aditi was diagnosed with multiple muscular ventricular septal defects. They were

large, so it would have been very difficult, if not impossible, to close them with traditional open-heart

*Correspondence to: Ziyad M. Hijazi, Director, Rush Center for Congenital, & Structural Heart Disease, Section Chief, Pediatric Cardiology, Professor of Pediatrics & Internal Medicine, Rush University Medical Center, Chicago, IL. E-mail: president@scai.org

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surgery. Another option in such cases is the hybrid therapeutic intervention. It is a much less invasive approach that combines surgery and interventional procedure with implantation of devices to close the holes. The chest is open, but the heart and lungs continue to function on their own while we implant the devices.

Drs. Kolluri and Tumuluri came to me on the recommendation of the attending physician. Even though they both are physicians, just like the families of all my patients, I gave them as much information as I could to help them make an informed decision about their daughter's treatment.

When they decided to go ahead with the procedure, there was only one problem. I had just moved to Rush University Medical Center from the University of Chicago, so my hybrid suite had not been built. Aditi was not in immediate danger, but in these situations it is very important to do something before the baby reaches 4–6 months of life. It turned out that we were able to go ahead 3 months after Aditi was born. By then she had gained some weight and everything went well. We don't anticipate the need for any further intervention. But that's enough from me—let's hear from Aditi's parents.

A Difficult Decision

Dr. Hijazi: Welcome, and thank you for taking the time to talk with me today. Let's begin by going back to March when Aditi was born and you were told that she had a heart defect. How did you find out about the program here at the Rush Center and the option for something less invasive than open-heart surgery?

Dr. Kolluri: We heard about hybrid intervention from the attending physician at the Rush Center and then we read about it in articles we found on the Internet. We also talked to an internist at the University of Chicago, who strongly recommended you.

Dr. Hijazi: How did you learn about the hybrid approach?

Dr. Kolluri: We learned about it first from our reading on the Internet. Then we called you and you were kind enough to see us right away.

Dr. Hijazi: When we looked at the echocardiogram together for the first time, and I told you that Aditi had at least two defects, if not more—forget for a moment that you are doctors—as parents, what were you feeling? What was going on in your minds?

Dr. Tumuluri: We felt shell-shocked. We knew that she had a defect, but we did not realize the extent of it. We were shocked that she would have to have surgery.

Dr. Hijazi: I know that you're not cardiologists, but I hope that showing you the location of the defects on

the echocardiogram helped you understand what was involved.

Dr. Tumuluri: Absolutely. Initially, when we heard about the procedure, we tried to get an understanding of it and how you would approach it. The echo helped us with that.

Dr. Hijazi: After that, we discussed how I wanted to do the procedure, but because I had just moved to Rush, I didn't have a true hybrid suite where we could do surgery and catheterization in the same room. Did you have second thoughts at that time? Did you ever think of doing conventional open-heart surgery instead?

Dr. Kolluri: Yes. We were in a quandary—especially during that waiting period. We were of two minds for a long time because we had heard a lot of things both for and against it. But after 2 weeks of really thinking and talking with you, we finally made up our minds and decided to wait.

Aditi's Operation and Progress

Dr. Hijazi: From your perspective as parents, how did everything turn out?

Dr. Kolluri: We were actually glad for the waiting period because Aditi gained some weight.

Dr. Hijazi: That's right. She was pretty small for me to attempt the percutaneous approach via her femoral vessels. Although, in my opinion, for a baby her size, the right thing was definitely the hybrid approach. Even though it's still open chest, the heartbeat was not stopped and the incision was smaller than a conventional open-heart surgery incision.

If the hybrid is not available, there are only two things a surgeon can do to fix this problem: an incision in the right ventricle muscle, which is associated with a lot of morbidity and risk, or a band on her pulmonary artery, which constricts the amount of her blood that goes to the lungs. Also, with the band, later on, when the baby is bigger, another operation is required to remove the band, close the holes and reconstruct the site of the band.

I knew Aditi would have a good outcome with the hybrid intervention. The morbidity and the mortality from this operation are much, much less than with conventional open-heart surgery. By collaborating with the surgeons over the last few years, we have saved many babies from major open-heart surgery. It's not only my case or the surgeon's case—we are all responsible. We all want to do what's right for the patient.

Was this right for Aditi? How is she doing?

Dr. Kolluri: Aditi is doing great. She's really cute, and she's feeling great. She doesn't look sickly or have symptoms that she had before. We're very happy.

Dr. Tumuluri: Yes. She's working on sleeping.

Dr. Hijazi: Is she sleeping through the night?

Dr. Kolluri: No. She's still gets up twice or three times a night.

Dr. Hijazi: How is her weight gain? Is she eating well and putting on some weight?

Dr. Kolluri: Yes. She's at about the 50th percentile now. She was in the 26th.

Dr. Hijazi: Wow, she caught up so quickly! That's great.

We'll do another echo and then follow up again with a six-month visit. If that goes well, we'll see her every 1–2 years. In our experience, there's not much need for follow-up. We've been doing this for about 6 or 7 years now and all the babies have done extremely well. But we keep an eye on them anyway, so when new parents ask, we have definitive, scientific answers about how patients will be after 5, 10, and 15 years.

Help for Families

Dr. Hijazi: For the layperson out there, how would you advise them to use the Internet? What sites would you recommend for medical information?

Dr. Tumuluri: I am an internist and, when I talk to my patients about getting any sort of procedure, if they are Internet-savvy I recommend reputable and scientific sites rather than forums, which may or may not give you the best advice.

Dr. Kolluri: There are not too many articles yet on hybrid interventions on the Internet. There are a few papers you wrote and the ground-breaking study you did a few years ago, but other than that there's not much information for the layperson.

Dr. Hijazi: That's right. Unfortunately, there's not much published in this field on these procedures even though we do quite a number of them each year. It's

very difficult to publish on about three to five patients, so it's important to have websites such as SCAI's www.Seconds-Count.org, where we also post stories like yours that families can relate to.

Dr. Kolluri: I also think it would be good if hospitals put something on their sites about which procedures they offer. They should publicize that more.

Dr. Tumuluri: They could also have support groups for families—parents willing to share their experiences.

Dr. Hijazi: Did you talk to families whose kids had the same procedure?

Dr. Kolluri: I wanted to talk to families, but in our confused state of mind we did not. It would have been nice to talk to them.

Dr. Hijazi: If a family comes to you now, with a similar situation, what advice would you give?

Dr. Tumuluri: The first thing I would tell them is not to panic because they have options. And, when it's major surgery, they could benefit from the hybrid procedure. Other approaches sounded very invasive to us, so we continued to look for other options.

Dr. Kolluri: I would tell them not to shy away from it. Weigh the risks and benefits at the time and make an informed decision.

Dr. Hijazi: Thank you both for your candor. It is our job as a Society to provide parents, as well as patients, with the most up-to-date information on various cardiac conditions, including hybrid therapeutic interventions for small babies with congenital cardiac defects. By sharing your story with us, you are helping other families know they have options, too.

I'd like to hear what you think about this President's Page and any other topic on your mind. Please write to me at president@scai.org