THE DIRECTOR’S CUT

HEART HISTORY: PIONEERS IN PEDIATRIC CARDIOLOGY—WILLIAM RASHKIND, HIS “MAGNIFICENT” CATHERETER AND THE BIRTH OF INTERVENTIONAL CARDIOLOGY.

In 1929, Werner Forssmann inserted a catheter into his own arm vein and threaded this catheter into his heart under X-ray guidance. With this historic event, cardiac catheterization was born and shortly thereafter, became the definitive test for the diagnosis of heart disease.

William Rashkind, a brilliant pediatric cardiologist at Children’s Hospital of Philadelphia, had different ideas for the role of this procedure, however. He wanted to use the cardiac catheter as a non-surgical instrument to actually treat children with congenital heart defects. He first demonstrated this possibility by helping babies born with transposition of the great vessels (TGV). Unlike the “blue babies” who had little blood flow to the lungs and were helped by the Bialock-Taussig shunt you read about in the last issue of The Heart Beat, babies with TGV were blue because of the “switching” of the large arteries that emerge from the heart, resulting in oxygen-poor blood going throughout the body, while oxygen-rich blood went to the lungs. These babies had plenty of blood to the lungs; it was just not getting to where it needed to be.

In 1964, William Mustard reported a surgical procedure for TGV patients that redirected blood to the proper chambers, but it couldn’t be done in young infants. Unless there was a way for the blood to “mix” within the heart, these babies were starved for oxygen and rarely survived past 6 months of age, not old enough for Mustard’s surgery. The only option was a surgical procedure to “create” a hole in the top chambers of the heart, an atrial septal defect (ASD), but it was extremely hazardous and associated with high mortality. A less risky, non-surgical way of creating this ASD was needed so these babies could survive until 6 months of age and undergo the Mustard procedure.

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MAGICAL MASQUERADE BENEFIT!

The fabulous five—our team of pediatric cardiology physicians—made an appearance at the masquerade benefit on October 29, 2010 at the Bernards Inn. They donned their bat masks and showed their “heart” at the event which was a tribute to the memory of Mrs. Marge Goryeb, as well as a fundraiser for The Children’s Heart Center. Proceeds will be used to purchase a new, state of the art, echocardiography machine.
Nurses’ Notes

Tips for a smooth office visit

- Schedule your child’s appointment at a time that avoids unnecessary stress. For example, avoid naptime or when your child gets hungry.

- Avoid coming immediately after another doctor’s appointment.

- Don’t use lotions or oils on the skin on the day of the appointment.

- Bring familiar items that will be comforting to your child, such as a pacifier, bottle, favorite toys, video/DVD or blanket.

- Contact the nursing staff before the appointment to express your concerns and to develop a plan to get through the examination, EKG and echocardiogram.

- Avoid negative comments, such as “You may not like this”.

- Reassure your child that we do not “give shots” and we try not to do anything that will hurt.

As a parent, take a deep breath. We know that there are difficult ages and we will do all that we can to get the testing done in a timely manner. We are not critical of your child or of your parenting if your child finds the appointments stressful. We all know that it will pass as your child grows and matures.

Staff Highlight

Can you tell from the picture that I always wanted to be a nurse? I realized my childhood dream when I graduated from Muhlenberg Hospital School of Nursing. For my first job, I travelled west and worked in a Chicago hospital in the newborn nursery. Two years later, ready for another adventure, I went to Zaire in central Africa (now called the Congo) to work in an 80-bed mission hospital. It was a new culture, new language and third world medicine. My heart was touched, my faith strengthened and my nursing skills challenged. One special moment was when the father of a child very sick with malaria knocked at my door bearing a most generous gift - a chicken. It was his way of saying thank you. The witch doctor was not able to help the young boy, but we had the medicine to make him well.

After 2 years in Africa, my next challenge was adjusting to life back in the States with extravagant supplies, like oxygen, IV’s and a cafeteria. Shortly before my 30th birthday, I started at Morristown Memorial, the place where I was born. I loved my job in the NICU, caring for preemies and their families. After 10 years, I moved to pediatric cardiology where I learn something new every day. It has been such a joy to work with our families, watching the children grow and thrive. In my leisure time, I take walks with my miniature poodles, Ben and Lacey. Or I’m likely to be found at a fabric store or craft fair, pursuing my creative side, from beading to quilting to baking. The hum of my sewing machine brings great solace.

Healthy Heart

Cholesterol and Healthy Eating

You may be used to hearing about cholesterol levels in adults, but did you know that this is an important screening measure for children, too? Since 1994, the American Academy of Pediatrics has recommended cholesterol screening in selected groups of children, some as young as age 2. It’s important to be aware of cholesterol in a plan for healthy eating for all children. However, cholesterol levels are particularly important for children with heart disease.

Some parents of children with congenital heart disease may have struggled with difficulties in getting their child to gain weight early on. For instance, some infants with heart disease may have temporarily needed a feeding tube. Following early eating difficulties, parents may be inclined to let their child eat whatever they want, just to see them eat heartily. We all need to be aware that healthy food choices are always essential for a healthy heart.

High levels of cholesterol are a major factor in heart disease and stroke. Current medical research shows that cardiovascular disease has its roots in childhood. Early abnormal changes in the blood vessel walls of children, infants and even fetuses have been demonstrated. So, it’s never too early to be aware of cholesterol in your child’s diet.

Cholesterol is a waxy substance produced by the liver. It’s one of the lipids, or fats, the body makes to form cell membranes and some hormones. If you never ate any food containing cholesterol, your body would still make enough cholesterol to run smoothly. In fact, the liver produces about 1,000 mg. of cholesterol a day. The rest comes from the foods we eat.

Cholesterol has to combine with proteins to travel through the blood stream. Cholesterol and protein traveling together are called lipoproteins: low density lipoproteins (LDL), or “bad cholesterol” and high density lipoproteins (HDL), or “good cholesterol.”

(LD) lipoproteins are the primary cholesterol carriers: too much can build up on the artery walls leading to the heart and brain. This buildup forms plaque - a thick, hard substance that can make blood vessels stiff and narrowed. This “hardening of the arteries” is called atherosclerosis. If a blood clot forms and totally blocks a narrowed artery, the result can be a heart attack.

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Did you know??

During the course of a lifetime, the heart does the most physical work of any muscle in the body. Even when resting, your heart muscle works twice as hard as your leg muscles when you’re running.

Try this: Hold out one hand and make a fist. If you’re a kid, your heart is about the same size as your fist. If you’re an adult, it’s about the size of two fists.

The heart muscle (or myocardium) is unique to the heart. It’s not found anywhere else in the body.

A newborn baby has about one cup of blood while an adult has 16 to 20 cups of blood (4 to 5 quarts) that circulate throughout the body.

Try this: Get a tennis ball and squeeze it very hard. That’s how much force the heart uses when it pumps the blood out into the body.

The sound of the heart beating (“lub-dub”) is made when the four valves in the heart are closing.

The heart pumps blood to almost all of the 75 trillion cells of the body. What is the only part of the body that does not receive blood?

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**Family Connection**

I found out when I was 37 weeks pregnant that my son had a heart defect. In a moment, my life would never be the same. Immediately, it was a whirlwind of tests, doctor appointments and surgeries. The first years of my son’s life left little time to reflect. We were always planning and moving forward with preparations and dealing with the normal complications and developmental delays that accompanied his defect. My son had his last heart procedure at 5 ½ years old. He had made it through the “worst of it”. Overall, he was doing pretty well. I was very relieved and knew how fortunate we were.

With the stress and pressure of life and death decisions behind me, I was looking forward to feeling normal again. Unfortunately, this didn’t happen. I chastised myself for not being able to adjust to the new circumstances of my life. Finally, my husband and I decided to go to a professional counselor. I explained our situation and the counselor asked if we had mourned. I was shocked by this question and explained that our son was alive and doing great. She explained that we needed to mourn the loss of our life with a healthy child. We both said “no”. We had never consciously thought about it. She told us that it was okay to mourn that loss. It didn’t diminish the love we felt for our son. Once I acknowledged this, things got better. I was able to relax and feel happy again. I felt very humbled by this. No matter how hard I tried, I couldn’t pretend that everything was fine, especially when my life had been turned upside down and was totally different than what I expected it would be.

My advice to new parents is to acknowledge the changes that have happened and how you feel about them. It will help you adjust and embrace being the parent of a child with a heart defect.

Ann, mother of a 7 year old son.
**Social Work Corner**

**Margaret Micchelli, LCSW**

**The Human Bond and the Importance of Social Support**

We have all known the experience of feeling better after talking over our concerns with someone who understands. This is especially true under conditions of stress, which is the body’s response to a challenge that requires some type of change or adjustment. Defined this way, stress is not always negative or bad. For instance, many developmental transitions involve this kind of “positive” stress – the birth of a baby or a child’s entry into kindergarten.

However, there are inevitably life events that are stressful and challenge our coping abilities. This is certainly true for parents when they hear the diagnosis of a congenital heart defect. It’s a new world of doctor appointments, tests and often surgery that presents challenges as their child grows and passes through life’s various stages.

There is ample research evidence that social support has a mediating or “buffering” effect on stress. Also, according to the psychologist Abraham Maslow, the need for a sense of belonging is vital. Social support and a sense of belonging come from many sources – family, friends, work, even the people you see every morning when you stop for coffee.

Our monthly parent support group is an opportunity to experience a sense of community with others who understand in a unique way; they’ve been there, too. It’s a chance to share ideas and feelings; to both give and get guidance and information; and to have company on the journey through early childhood.

Join us on the first Wednesday of each month from 7 to 9 pm, Jan. 5, Feb. 2, March 2, 2011. For details, please call (973) 971-8689 or email: Margaret.micchelli@ahsys.org

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**Healthy Heart (cont’d)**

**HDL (good) lipoproteins** carry cholesterol away from the arteries and back to the liver, where it’s processed and sent out of the body. These lipoproteins may even help remove cholesterol from already-formed plaques.

Children who are physically active, eat healthy foods, don’t have a family history, and are not overweight probably aren’t at risk for high cholesterol. Your pediatrician will decide whether your child’s cholesterol needs to be checked.

Current guidelines recommend screening in children at risk for high cholesterol starting at age 2, but no later than age 10. It’s recommended for those who have:

- A parent with total cholesterol higher than 240 mg/dl
- A family history of cardiovascular disease earlier than age 55 in men and age 65 in women
- An unknown family history of cardiovascular disease

Health complications associated with high cholesterol develop gradually. However, it’s important to focus on healthy diet and exercise early on. These measures can have a significant positive impact on the health of your child and that of your entire family.

**NEXT ISSUE:** Ways to Lower Cholesterol

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**Summer Picnic - Good Time for All**

On September 19th, the division of pediatric cardiology hosted its first annual family picnic. It was a beautiful, sunny day at Lewis Morris Park, where 175 families, staff, and volunteers enjoyed food, games and crafts. Upon arrival, families were greeted by a menagerie of large animals, including an alpaca named Frankie and a pot-bellied pig named Giggles. Many thanks to Wanda Kaminski, RN, who arranged for the petting zoo and a bouquet of thanks to the parents and volunteers for all their donations.

The children tested their skills on a rock climbing wall and a giant inflatable slide to the tunes of a live DJ. They decorated pumpkins, roamed around on a scavenger hunt, and made a variety of craft projects. While enjoying hot dogs, hamburgers and homemade desserts, families had the chance to meet and share experiences. The afternoon was capped off by a raffle of donated gift baskets and the promise of a good time again next year.