



Health Care Visions News

From The Cardiovascular Specialists

2ND QUARTER 2005

Keep Your Heart in Appalachia

Hazard ARH Regional Medical Center has expanded their cardiology services to include open-heart surgery and interventional cardiology. Hazard ARH Regional Medical Center serves the communities of Central Appalachia located in the

mountain tops of Hazard Kentucky. Interventional peripheral vascular angiography and diagnostic cardiac catheterizations have been performed at the facility for many years but they recognized there was a tremendous need for advanced

cardiac services since the closet program was a two hour commute through the mountains. It was not just a matter of convenience but one of life or death for some of their patients.

This vision for their future direction was shared and supported by the administrative staff members of the ARH Healthcare system. Their visions became a reality in January of 2005.

The cardiovascular expansion program was directed by Ms. Trena



Hall, CEO of Hazard Regional Hospital. Her administrative and leadership skills were very helpful in keeping the program progressing forward but it was her desire and determination for a quality program that proved the most valuable attribute. The recruitment of Dr. Louis Suarez, cardiovascular surgeon, provided the opportunity to accomplish this goal of developing a superior program.



Dr. Louise Suarez was recruited from Appleton Medical Center where he practiced for 22 years. His experience and skills were evident

throughout the implementation and it became very apparent to everyone at the facility during our dry runs. Dr. Suarez is a skilled surgeon who values the individual contributions of all team members' involved in the patient care of the cardiovascular patient. He certainly is worthy of being listed as one of the "Best Physicians in America" for six consecutive years. We were thrilled to have him at Hazard Regional Medical Center.

The nursing team was lead by Ms. Susan Price, Director of Nursing at Hazard. Susie has worked at Hazard ARH Regional Medical Center for many years and her organizational knowledge helped identify and obtain needed resources for project completion. She coordinated on-site education for the nursing staff as well as the hands-on training at Saint Joseph Healthcare, Inc in Lexington. These were just two of many tasks she coordinated but both of these educational opportunities were vital to the program.

Congratulations to Hazard ARH Regional Medical, we did it. It was a team effort and everyone at Health Care Visions, Ltd. is very proud of the great program that is in place at Hazard.

"It was not just a matter of convenience but one of life or death . . ."

PULMONARY VEIN ISOLATION AND ABLATION

A Therapy for Atrial Fibrillation



Rose Czarnecki

Atrial fibrillation is the most common, sustained cardiac arrhythmia. According to the American Heart Association atrial fibrillation affects about 2.2 million Americans. Predictions are that there will be approximately 300,000 new cases diagnosed each year.

Ablation therapy is a catheter based treatment option that can be implemented when electrical and pharmacological conversion fails to maintain a normal heart rhythm and surgery is not an option. Original catheter ablation approaches were developed to reduce the symptoms of atrial fibrillation rather than provide a cure. Atrioventricular node or HIS-Bundle ablations were performed to prevent the ventricles from beating fast by creating a heart block in the patient. This procedure destroys the tissue at the atrioventricular node or HIS-Bundle and stops the conduction of all electrical impulses from the atria to the ventricles. Patients receiving this treatment usually require placement of a permanent pacemaker at the time of the procedure. The pacemaker provides a regular ventricular rate subsequently diminishing the symptoms associated with atrial

fibrillation, even though the arrhythmia continues.

In the 1990's it was determined that rapidly firing atrial foci in the pulmonary veins were responsible for episodes of atrial fibrillation in some patients. When the pulmonary veins are developing in utero, they received a sleeve of atrial muscle as they bud out from the heart to the lungs. This sleeve of atrial muscle in the proximal pulmonary veins may become active and demonstrate spontaneous, rapid discharge later in life, leading to atrial fibrillation.

Initially, patients underwent focal ablations after mapping identified areas in the pulmonary vein responsible for the ectopic foci. The catheter was placed directly into the pulmonary vein and the individual arrhythmogenic foci were ablated. Atrial fibrillation reoccurrence rates were high after this procedure because the other pulmonary veins and their branches had active foci also. This procedure also gave way to high rates of pulmonary vein stenosis because the energy was delivered directly into the pulmonary vein.

Subsequently, it was discovered that isolating the pulmonary vein by applying ablation energy to the area where the left atrium connects to the pulmonary veins was more effective. This avoids the need for detailed mapping of foci within the veins. The risk for pulmonary

stenosis is reduced because the need to apply energy directly into the pulmonary vein is eliminated.

Circumferential ablation is used to isolate the pulmonary vein from the left atrium by delivering the ablation energy uniformly over the full (360°) circumference of the pulmonary vein opening (os) without regard for the origin or the ectopic beat. Other research has shown that the myocardial connections between the pulmonary veins and atria are generally not fully circumferential; instead the connection is limited to two segments. Therefore, ablation can be accomplished by delivering energy to these specific segments.

According to the Atrial Fibrillation Foundation half of the patients who undergo these procedures need to come back for a repeat "touch up" procedure. After one or two procedures the overall success rate is between 70 and 80 percent in eliminating atrial fibrillation episodes in the first year of follow-up.

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Myocardial Fractional Flow Reserve

(FFRmyo) and Reimbursement Changes

Use of myocardial fractional flow reserve (FFRmyo) in coronary angiography has demonstrated



Marsha Knapik

near 100% specificity for identifying the culprit lesion when there is a question regarding the functional impact and severity of that lesion. In as many as one third of patients who have lesions identified by coronary angiography there is difficulty in determining if that lesion is the one producing the patient's symptoms. FFRmyo has been shown to be a more cost effective method to determine the functional impact of that lesion than follow up nuclear stress imaging.

What is Myocardial Fractional Flow Reserve? FFRmyo is equal to the maximum coronary blood flow in a diseased artery divided by the maximum coronary blood flow in the artery if no lesion was present. In normal coronary arteries the distal pressure generally equals the

pressure in the aorta, therefore, FFRmyo is "1" in a normal coronary artery. In a diseased artery, obviously the pressure or flow in the coronary artery is not the same as that of the aorta, therefore, there is no longer one-to-one flow. Flow in a diseased artery will be less than one, or a "fraction" of the normal myocardial flow.

How is this useful in PCI? If a patient has a moderate lesion (40-70% stenosis) and there is uncertainty of the functional significance to the patient, performing a FFRmyo can help determine the impact to the patient. A FFRmyo of ≤ 0.75 indicates a lesion that is significant in terms of myocardial flow. When cardiologists perform a PCI or stent procedure, myocardial fractional flow can assist evaluating the results. That is: a FFRmyo of ≤ 0.75 would be considered unsuccessful; a FFRmyo of 0.75-0.90 would rank as moderately successful (with a potential restenosis rate of approximately 30%); and a FFRmyo > 0.90 would be considered an excellent result with a potential restenosis rate of approximately 12%.

Myocardial functional flow reserve can be easily calculated with a user-friendly computer system and pressure wires recently released by Radi Medical Systems. There is good news for cardiac catheterization laboratories who wish to use this modality. CMS has initiated new reimbursement rules for FFRmyo as of January 1, 2005 by assigning it to CPT codes. CPT code 93571 is assigned to APC group 0670 (Level II intravenous and intracardiac ultrasound and flow reserve) and has a national average reimbursement rate of \$1731.24. CPT 93572 is assigned to APC group 0416 (Level I intravenous and intracardiac ultrasound and flow reserve) and is reimbursed at a national average rate of \$274.56. The status indicator for these codes have been changed from "N" (payment packaged into other services) to "S" (separate payment without multiple service reduction). This additional reimbursement will make it more financially feasible for cardiac catheterization laboratories to use FFRmyo to quantitatively evaluate lesions of questionable significance and to also evaluate the outcomes of PCI.

MESSAGE FROM THE PRESIDENT



Barb Sallo

Even though it has been three months since the start of 2005, it still hasn't sunk in. It seems that the past five years of this new century have flown by and we are those many years older. We have been hearing about the "baby boomer" movement, but the impact of it was brought home to me by some recent information from CMS:

While people 65 and over accounted for only 13% of the population, they were responsible for \$387 billion, or 36% of U.S.

personal healthcare spending in 1999. Those 65 and over also accounted for \$144 billion, or 37%, of hospital spending, and they consumed an average of \$11,089 each in healthcare goods and services in 1999, four times as much as the average for all Americans under 65, including children. The ageing of the population will lead to a greater disproportion, CMS reports. Medicare paid for 46% of the cost of caring for the elderly, while Medicaid and private payers each covered about 15%. Medicare spending is expected to grow 67% from \$178 billion in 1999 to \$297 billion by 2049.

*"Success occurs
when
opportunity
meets
preparation."*

-Anonymous

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Hospital Spending by Age Group, 1999

