The Role of Advanced Specialized Echocardiography in Patients with a Cardiomyopathy

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Cardiomyopathy is a condition where the heart muscle becomes enlarged, or thickened, often times reducing cardiac performance. Symptoms are similar to those associated with congestive heart failure: shortness of breath with exertion, fluid retention, chest pain and fatigue, while some people have no symptoms at all.

Although this category of cardiac diseases strikes people of all races and ages, some people are at greater risk, especially those with a family history of cardiomyopathy or heart failure. Other risk factors include a personal history of coronary disease, heart attack, long-term high blood pressure, infection, long-term alcoholism, diabetes or other metabolic diseases, or severe obesity.

Echocardiography, cardiac ultrasound, is the primary imaging tool for clinicians to diagnose and manage patients with a cardiomyopathy. According to Bill Shirkey, BA, RDCS, FASE, Director of Cardiac Imaging and Cardio Diagnostics at NCH Healthcare System, “two dimensional echocardiography has been the reliable standard for many years; however newer technologies in echocardiography, three dimensional 3-D echocardiography and Strain imaging helps medical professionals better understand the actual condition of the heart muscle in cardiomyopathy patients.”

At NCH we offer specialized applications of these imaging advancements. For individuals undergoing chemotherapy, monitoring heart function is important during the course of therapy to detect chemotherapy induced cardiotoxicity, a type of cardiomyopathy. With the use of 3D echo and strain, clinicians can detect subtle changes to the left ventricular performance. If these changes are detected during testing intervals, clinicians can manage therapies to preserve the patient’s heart function, through the course of treatment and in the long term.

For some cardiomyopathy patients, a biventricular pacemaker is implanted. This specialized pacemaker is used to maintain the ventricles shape and timing when contracting. With advanced imaging tools such as 3D echo and strain, there is the ability to offer echo guided optimizations of the device. The pacemaker setting is tailored to each individual for optimal results. “The ultimate goal with the use of this new technology is to fine-tune the pacemaker to each individual’s needs and alleviate symptoms of severe congestive heart failure,” says Shirley.

These advanced imaging technologies also offer prognostic value to clinicians for patients with heart valve disease, myocardial infarctions and following coronary artery interventions such as stents and coronary bypass grafts.

For more information, contact Bill Shirkey, Director of Cardiac Imaging and Cardio Diagnostics, at 239-624-2060.

Sports Injury Prevention: Teens Warned Not to Play Through Pain

“No pain, no gain,” can be a dangerous mindset for young people training for school sports. “That's a mentality we want to get away from,” said Josh Lewis, a physical therapist and certified strength and conditioning specialist at NCH Healthcare System. “If you’re in pain, you need to stop and reassess how you’re doing.”

Injuries among young athletes are seen across all sports and ages, but often begin in middle school or when teens and pre-teens are new to the training, said Shelly Derby, an NCH physical therapist and certified athletic trainer. Derby advocates the development of a strong core as the first line of defense against the wide variety of injuries that bring teens into NCH physical therapy.

Derby is a member of a team of physical therapists at NCH that includes Lewis, Katie Burns and Mary Dwyer. They suggest the following tips for preventing injuries in young athletes:

- When beginning a strength program one should consider starting with developing core stability as the foundation for all movement.
- Cross-train by playing multiple sports and training in various styles and methods.
- Avoid over-training and doing only the same exercises repeatedly.
- Allow for movement adaptation based on body type.

Common injuries seen in young athletes include knee, shoulder, ankle, and back injuries, among others. Severity ranges from muscle strains to injuries requiring surgery, such as a severely torn ACL, a ligament in the knee that stabilizes the joint.

One of the foundational core exercises is the plank where the body is held stiff as a board while propped up on toes and forearms for various periods of time based on fitness level.

Participating in fitness activities outside your sport can help reduce the risk of injury. This cross training allows athletes to reduce overuse of sport specific muscle groups, helping to balance strength and flexibility.

“Another important element in training is to acknowledge that we will develop differently and our training needs to respect that,” said Lewis. He adds that there is a difference between pain during a movement or exercise and soreness after the workout. “Pain during a movement or exercise can indicate an underlying problem, whereas soreness even 2-3 days after an exercise session can be normal depending on the intensity of the exercise and your own fitness level,” explains Lewis.

“The key take-away here should be that if you are in pain during movement or exercise it is best to be assessed by a medical professional which can help to reduce the risk of serious injury,” said Lewis.

For more information or to make an appointment with NCH Outpatient Rehabilitation call (239) 624-1600.