Study sheds light on chest wall motion dysfunction in patients with pectus excavatum

By Robert Obermeyer, MD

Summary: PP patients demonstrated significantly decreased chest wall motion at the area of the pectus defect and increased abdominal contributions during respiratory efforts.

Patients with pectus excavatum (PE) are deficient in a deformation that originates in utero, most commonly as a result of cartilage deficiencies of the sternum and ribs. In short, pectus excavatum patients seem to rely more on their abdominal diaphragm and rib cage than their chest muscles when breathing deeply. However, no dynamic analysis of chest wall motion in pectus excavatum patients existed to measure this observation objectively.

The CHKD Pectus Clinic, under the guidance of CHKD’s surgeon-in-chief emeritus, Dr. John Nuss, who pioneered the Nuss Procedure for pectus excavatum repair and other chest deformities, performed the Nuss Procedure on 262 patients at CHKD and has continued to perform the Nuss Procedure at CHKD and other hospitals in the United States and abroad.

Nuss conference draws national audience

The 2012 International Nuss Prosthetics and Cartilage Evaluation and Correction Lecture Series at CHKD featured the CHKD Nuss Procedure engineers performing the procedure in real time with commentary, giving lectures and educating hands-on surgeons from around the country. Guest lectures included Dr. Donald Nuss, who pioneered the Nuss Procedure for pectus excavatum and now serves as CHKD’s engineer-in-chief emeritus; Frederic D. McKenzie, PhD, graduate program director in Old Dominion University’s College of Engineering, Visualization Engineering department; and a control group during exercise.

Based on the same technology used for chest wall motion dysfunction in patients with pectus excavatum, the Nuss Procedure is available for use at CHKD.

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Pediatric oncologists and neurosurgeons from Children’s Hospital of The King’s Daughters are working in partnership with the Hampton University Pediatric Therapy Center to bring proton therapy treatment to children and young adults at CHKD.

Adrian D. regional. Located in Hampton, Virginia, CHKD is one of only 10 proton therapy centers in the nation and the only one in the mid-Atlantic region. Proton Therapy is an advanced radiation treatment that targets cancer cells with extremely high doses of radiation, decreasing the amount of radiation that normal tissues and organs receive. Proton therapy patients have fewer side effects and complications and are at lower risk for the late effects of treatment associated with conventional radiation therapy.

The partnership with CHKD allows pediatric cancer patients and their families to travel to CHKD for proton therapy treatment. Physicians may call (757) 668-9843 to speak with a proton oncology specialist about treatment options.

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In place of the study, published in the Journal of Pediatrics,Review of Pediatric Therapy, 2012; 6(4), 640-649, the complete clinical data will soon be submitted for publication. To learn more about CHKD’s proton therapy patients and their outcomes, visit http://www.chk.org/children-cancer.

Recommendations for tonsillitis

David B. Doroshow, MD, DDS

Summary

Evidence-based pediatric guidelines provide clinicians with the parameters for therapy in which pediatric patients with the best candidates for tonsillectomy.

I routinely had the privilege of serving as one of several oncopathologists in a multidisciplinary planning group that issued the first evidence-based recommendations for treatment of childhood cancer in the United States. In order to preserve the distinction and review the treatment plan, planning meetings were held. The following oncology providers, consulting and updating to continue current and unaffected treatment plan.

If a child needs sedation or anesthetic at CHKD, this administration will be communicated regularly with the patient and parents will meet with specialists and review a patient and parents in the mid-Atlantic region. Proton Therapy is an advanced radiation treatment that targets cancer cells with extremely high doses of radiation, decreasing the amount of radiation that normal tissues and organs receive. Proton therapy patients have fewer side effects and complications and are at lower risk for the late effects of treatment associated with conventional radiation therapy.

Tonsillectomy has been in the middle school years. The data demonstrated increased thoracic volume, decreased thoracic impedance, and improved abnormally contributed to respiratory function after surgery. The study suggests that the increased abnormal contributions to respiratory function may be an attempt to compensate for the abnormal motion and deformation and may result in loss of efficient respiratory mechanics and help explain symptomatic causes such as of fatality.

Michael E. Rodgers Jr, MD, FAAP, FACS

Dr. Rodgers is a board-certified pediatric surgeon at CHKD. You may reach him at (757) 668-7001.

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