

Surgeons demonstrate new minimally invasive technique to correct chest deformity

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A new minimally invasive surgery to correct a chest wall deformity -- often known as pigeon chest -- was demonstrated Friday at an international conference attended by surgeons from the U.S., Canada, Argentina, Chile, Panama, Puerto Rico, Germany, Spain and Russia.

Technically known as pectus carinatum, the condition causes the chest wall to protrude outward, giving the patient's chest the appearance of the breast of a bird. In years past, the only surgery to correct severe cases was extremely invasive and involved cutting open the chest to remove excess cartilage. Because of the invasive nature of the surgery, the condition often went uncorrected.

"For many years, the medical community treated pectus carinatum as a merely cosmetic issue," said Dr. Robert Kelly, a [pediatric surgeon](#) at CHKD. "Pectus carinatum causes real physical and [psychological problems](#) for young people. We want physicians to understand that this condition should be treated. No child should have to suffer with it."

The new surgical technique was developed in South America by surgeons trained in a minimally invasive technique developed by CHKD pediatric surgeon Dr. Donald Nuss to correct pectus excavatum, a related condition that causes the chest to protrude inward.

The "Nuss technique" involves passing a curved bar inside the chest cavity, below the rib cage, to push out the indentation from underneath. After a period of time, the bar is removed and the chest grows normally.

In South America, where the outward protrusion is more common, surgeons developed what some doctors call a "reverse Nuss" in which the bar runs beneath the musculature, but above the ribs, pushing down the protruding section of cartilage. Again, the bar is removed after the condition is corrected.

During the conference, Dr. Kelly operated on a pectus carinatum patient, demonstrating "reverse Nuss" procedure, while one of the technique's pioneers, Dr. Patricio Varela of Santiago, Chile, offered narration.

At the same conference, CHKD's team of pediatric surgeons, physical medicine physicians and physical therapists demonstrated another device that, in the majority of the cases, can correct pectus carinatum before it becomes so rigid that surgery is required.

The new dynamic compression brace, also developed in South America where pectus carinatum is more common, can be calibrated to exert the exact pressure needed to correct the condition in the same manner that braces straighten crooked teeth.

Dr. Marcelo Martinez-Ferro of Argentina explained the history of the dynamic compression device, including the role of Drs. Nuss and Kelly in its development, and brought up four patients to the conference room to demonstrate how to use the new dynamic compression brace.

"Both of these techniques are major advances in correction of pectus carinatum," said Dr. Nuss.

At present, CHKD -- home to the nation's top chest deformity research and surgery program - is the only hospital in the nation where these techniques are used.

The techniques were demonstrated at the 8th International Nuss

Conference, part of CHKD's mission to promulgate the newest and best techniques for correcting chest wall deformities to surgeons around the world.

Provided by Children's Hospital of The King's Daughters

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