

Pectus Carinatum

Modified Nuss Procedure in Concurrent Repair of Pectus Excavatum and Open Heart Surgery.

Sacco Casamassima MG, Ling Wong L, Papandria D, Abdullah F, Vricella LA, Cameron DE, Colombani PM.

Source

Center for Pediatric Surgical Clinical Trials and Outcomes Research, Division of Pediatric Surgery, Baltimore, Maryland.

Abstract

BACKGROUND:

Pectus excavatum (PE) can be associated with congenital and acquired cardiac disorders that also require surgical repair. The timing and specific surgical technique for repair of PE remains controversial. The present study reports the experience of combined repair of PE and open heart surgery at Johns Hopkins Hospital.

METHODS:

A retrospective case review was conducted of all patients who presented for repair of PE deformity while undergoing concurrent open heart surgery from 1998 through 2011.

RESULTS:

A total of 9 patients met inclusion criteria. All patients had a connective tissue disorder. Repair of PE was performed by modified Nuss technique after completion of the cardiac procedure, performed through a median sternotomy. Open heart procedures were either aortic root replacement or mitral valvuloplasty. Eight patients had bar removal after an average period of 30.3 months. No PE recurrence, bar displacement, or upper sternal depression was reported in 7 patients. Postoperatively, 1 patient exhibited pectus carinatum after a separate spinal fusion surgery for scoliosis. One patient died of unrelated cardiac complications before bar removal.

CONCLUSIONS:

Simultaneous repair of PE and open heart surgery is safe and effective. We recommend that the decision to perform a single-stage versus a multistage procedure should be reserved until after the cardiac procedure has been completed. In such cases, the Nuss technique allows for correction of the pectus deformity with good long-term cosmetic and functional

Brace compression for treatment of pectus carinatum.

Jung J, Chung SH, Cho JK, Park SJ, Choi H, Lee S.

Source

Department of Thoracic and Cardiovascular Surgery, Ajou University School of Medicine, Korea.

Abstract

BACKGROUND:

Surgery has been the classical treatment of pectus carinatum (PC), though compressive orthotic braces have shown successful results in recent years. We propose a non-operative approach using a lightweight, patient-controlled dynamic chest-bracing device.

MATERIALS AND METHODS:

Eighteen patients with PC were treated between July 2008 and June 2009. The treatment involved fitting of the brace, which was worn for at least 20 hours per day for 6 months. Their degree of satisfaction (1, no correction; 4, remarkable correction) was measured at 12 months after the initiation of the treatment.

RESULTS:

Thirteen (72.2%) patients completed the treatment (mean time, 4.9 ± 1.4 months). In patients who completed the treatment, the mean overall satisfaction score was 3.73 ± 0.39 . The mean satisfaction score was 4, and there was no recurrence of pectus carinatum in patients who underwent the treatment for at least 6 months. Minimal recurrence of pectus carinatum after removal of the compressive brace occurred in 5 (38.5%) patients who stopped wearing the compressive brace at 4 months.

CONCLUSION:

Compressive bracing results in a significant improvement in PC appearance in patients with an immature skeleton. However, patient compliance and diligent follow-up appear to be paramount for the success of this method of treatment. We currently offer this approach as a first-line treatment for PC.

Dysmorphology of Chest Wall Deformities: Frequency Distribution of Subtypes of Typical Pectus Excavatum and Rare Subtypes.

[Article in English, Spanish]

[Kelly RE Jr](#), [Quinn A](#), [Varela P](#), [Redlinger RE Jr](#), [Nuss D](#).

Email: Robert.Kelly@chkd.org

Source

Department of Surgery, Eastern Virginia Medical School and Children's Hospital of the King's Daughters, Norfolk, Virginia, Estados Unidos; Department of Pediatrics, Eastern Virginia Medical School and Children's Hospital of the King's Daughters, Norfolk, Virginia, Estados Unidos. Electronic address:

Abstract

BACKGROUND/PURPOSE:

More than forty percent of patients with pectus excavatum have a family history of chest deformity. However, no studies of the frequency of the different phenotypes of pectus excavatum have been published.

METHODS:

A random sample of 300 non-syndromic pectus excavatum patients, from the chest wall deformities clinic at Children's Hospital of The King's Daughters in Norfolk, Va., was studied and classified according to a previously described classification system. Photographs and computed tomography (CT) scans were utilized.

RESULTS:

Typical pectus excavatum. Photo data: localized deep depression (cup-shaped) deformity occurred in 67%; diffuse (saucer-shaped) 21%, trench-like (furrow-shaped) 10%, and Currarino-Silverman (mixed pectus excavatum/chondromanubriocarinarum) 1%. The deepest point was to the right of midline in 80%, left in 10% and central in 10%. By photo, the deepest point was in the lower sternum in 75%. When asymmetric, the deepest point of the deformity was to the right of midline in 90%. CT data: the average Haller index was 4.9. Severe sternal torsion (>30 degrees) was associated with greater Haller index (6.3) than mild torsion (4.5). The deepest point of the depression was at the mid- or lower sternum in more than 99%. It proved impossible to estimate width or length of the depression because of poorly defined borders.

CONCLUSIONS:

Typical PE is cup-shaped in 67% of cases, to the right of the midline in 80%, and involving the mid-to-lower sternum in 99%. However, other phenotypes, like the saucer and long trench, comprised one-third. Definition of the deformity is more reliable by CT scan.

Sub-axillary access with the use of costal cartilages articulated bars for correction of pectuscarinatum.

Andreetti C, D'Andrilli A, Venuta F, Rendina EA.

Email : adandrilli@hotmail.com

Source

Department of Thoracic Surgery, University of Rome 'La Sapienza', Sant'Andrea Hospital, Rome, Italy.

Abstract

We describe an original technique for correction of pectus carinatum (PC) through a limited sub-axillary incision by chondrectomy and the use of costal cartilages articulated bars to stabilize the chest wall. We have developed this technique in order to improve the cosmetic results in the surgical treatment of even complex sterno-chondral deformities. The surgical incision is made along the lateral edge of the pectoralis major muscle in the sub-axillary region and its length is related to the number of costal cartilages to be treated. This technique is principally indicated for asymmetric PC with unilateral deformities of the costal cartilages, but its application can be extended to bilateral alteration of the parasternal cartilages by performing the sub-axillary incision bilaterally. When more than four cartilages are removed, the chest is stabilized by articulated bars made using cylindrical fragments obtained by the division of the removed costal cartilages. This thoracoplasty technique performed with a minimally invasive sub-axillary access is simple and safe. It allows the effective treatment of severe PC with either unilateral asymmetric or bilateral costal cartilages deformities, avoiding the median sternal incision and the use of the metallic bar

Minimally invasive repair of symmetric pectus carinatum: bilateral thoracoscopic chondrotomies and suprasternal compression bar placement.

Bell R, Idowu O, Kim S.

Email: skim@mail.cho.org

Source

Department of Surgery, University of California San Francisco-East Bay, Oakland, California, USA.

Abstract

PURPOSE:

We previously reported a novel minimally invasive repair for unilateral pectus carinatum. We have now modified this approach for the repair of symmetric bilateral pectus carinatum.

MATERIALS AND METHODS:

Using thoracoscopy, parasternal chondrotomies were performed at multiple rib levels at points of maximal sternal protrusion. The sternum was depressed to an appropriate position and maintained using a suprasternal metal compression bar. The bar was applied in a submuscular plane and anchored to the lateral ribs with sutures. Bars were removed after 6 months.

RESULTS:

Three patients with severe symmetric pectus carinatum underwent the repair. The first patient returned to the operating room after 1 month for repeat fixation of the bar after suture breakage. No other complications occurred. Operative times were comparable to published series. Patient satisfaction after the repair was good.

CONCLUSIONS:

Minimally invasive thoracoscopic repair of symmetric pectus carinatum using chondrotomies and suprasternal bar compression is a feasible alternative to open repair.

Chest wall deformities in pediatric surgery.

Obermeyer RJ, Goretsky MJ.

Email: Obermeyer@chkd.org

Source

Eastern Virginia Medical School, 700 West Olney Road, Norfolk, VA 23507, USA. Robert.Obermeyer@chkd.org

Abstract

Chest wall deformities can be divided into 2 main categories, congenital and acquired. Congenital chest wall deformities may present any time between birth and early adolescence. Acquired chest wall deformities typically follow prior chest surgery or a posterolateral diaphragmatic hernia repair (Bochdalek). The most common chest wall deformities are congenital pectus excavatum (88%) and pectus carinatum (5%). This article addresses the etiology, pathophysiology, clinical evaluation, diagnosis, and management of these deformities. Copyright © 2012 Elsevier Inc. All rights reserved.

Pectus carinatum treatment in Canada: current practices.

Emil S, Laberge JM, Sigalet D, Baird R.

Email: Sherif.Emil@McGill.ca

Source

Division of Pediatric General Surgery, Montreal Children's Hospital, McGill University Health Centre, Montreal, Quebec, Canada.

Abstract

BACKGROUND:

Multiple treatment options currently exist for the correction of pectus carinatum (PC). We performed a survey of Canadian pediatric surgeons to define current practices.

METHODS:

All active members of Canadian Association of Paediatric Surgeons were surveyed online during winter 2011 through the Canadian Association of Paediatric Surgeons Web site. The survey assessed multiple facets of PC evaluation and treatment, with particular emphasis on the practice of bracing.

RESULTS:

Forty-five active members (85%) responded, of whom 32 (71%) currently treat PC. Fifty-three percent of practices are low volume (<5 patients annually). In terms of preferred or most used treatment modality, 69% of surgeons used bracing, 25% performed Ravitch repairs, 3% performed open minimal cartilage resections, and 3% performed reverse Nuss procedures. Of

23 surgeons (72%) who used bracing, 83% used it for most or the patients. Fifty-seven percent judged their bracing results as good or excellent, and 74% felt that most or all patients braced were satisfied; 80% and 88% agreed or strongly agreed that bracing was generally preferable to surgical repair and that bracing should be first line treatment, respectively.

CONCLUSIONS:

Bracing is the preferred treatment for PC by most Canadian pediatric surgeons, despite lack of prospective outcome data. This presents an opportunity for a multicenter prospective study.

International innovations in pediatric minimally invasive surgery: the Argentine experience.

Martinez-Ferro M.

Email: martinezferro@fibertel.com.ar

Source

Division Department of Surgery, Fundación Hospitalaria Private Children's Hospital, Ciudad Autónoma de Buenos Aires, Argentina.

Abstract

This is a presentation about innovations in pediatric minimally invasive surgery and a review of the Argentine experience. The most representative are (1) the thoracoscopic treatment of long gap esophageal atresia with novel techniques; (2) the nonsurgical and minimally invasive treatment of chest wall deformities, particularly of pectus carinatum; and (3) the use of magnetic surgical devices in classic laparoscopy and transumbilical surgery

Quality of life of patients who have undergone the minimally invasive repair of pectus carinatum.

Bostanci K, Ozalper MH, Eldem B, Ozyurtkan MO, Issaka A, Ermerak NO, Yuksel M.

Email: kbstanci@marmara.edu.tr

Source

Department of Thoracic Surgery, Marmara University, Faculty of Medicine, Istanbul, Turkey.

Abstract

OBJECTIVES:

Several studies previously demonstrated an improvement in the quality of life (QoL) of the patients undergoing a minimally invasive repair of pectus excavatum, but there are no data about such improvement following the minimally invasive repair of pectus carinatum (PC) deformity. The purpose of this study was to investigate the effects of the minimally invasive repair of PC deformity on the psychosocial and physical functioning of the patients.

METHODS:

Among 40 patients who underwent minimally invasive repair for PC deformity from July 2008 to March 2011, 35 patients accepted to answer the QoL questionnaires, and 30 of them who had completed the postoperative 6th month were evaluated in this study. The modified two-step Nuss questionnaire was used for the QoL assessment. All patients and their parents completed the appropriate questionnaires regarding the patients' preoperative psychosocial and physical

functioning, and they were asked to answer the same questions on the postoperative 6th month. The results from these questionnaires were analysed using Wilcoxon signed rank test to investigate the effects of the minimally invasive repair of PC deformity on psychosocial and physical functioning of the patients.

RESULTS:

The questionnaires used in the study confirmed the positive impact of the surgical correction on psychosocial and physical well-being in the patients and their parents. Spearman's ρ correlation coefficient determined how well the answers to the same question at two different times correlated with each other, and Cronbach's alpha demonstrated the internal consistency of these answers. These two parameters showed that the statistical results of the study were reliable enough. Statistical analysis of the scoring of the individual questions and the total scoring of individual patients revealed a statistically significant improvement ($P < 0.05$) following surgery. Similar significant improvements were observed in the total scoring of individual parents and in most scoring of the individual questions (10 of 13, 77%) in the parental questionnaire ($P < 0.05$).

CONCLUSIONS:

The results of this study confirm for the first time that minimally invasive repair of PC deformity has a positive impact on both psychosocial and physical functioning of the patient, which is supported by parental assessment.

Pectus carinatum--first ultrastructural findings of a potential metabolic lesion.

Brochhausen C, Müller FK, Turial S, James Kirkpatrick C.

Email: brochhausen@pathologie.klinik.uni-mainz.de

Source

Institute of Pathology, University Medical Centre Mainz, Mainz, Germany.

Abstract

The histological and ultrastructural findings of rib specimens after two re-interventions in the case of recurrence of pectus carinatum (PC) are presented in this report. A 15-year-old boy developed recurrences of mild PC after re-chondroplasties using the Ravitch technique. Histological study of the resected cartilage showed markedly degenerative changes of the sternocostal cartilage. For the first time, intracellular crystalline inclusions in some of the chondrocytes were found. These findings indicate metabolic changes as a possible pathogenetic parameter in PC.

Conservative treatment of the pectus carinatum.

[Article in Spanish]

Moreno C, Delgado MD, Martí E, Fuentes S, Morante R, Cano I, Gómez A.

Email: ceciliamoze@hotmail.com

Source

Hospital Universitario 12 de Octubre, Madrid.

Abstract

INTRODUCTION:

Pectus carinatum (PC) is a deformity that involves the protrusion of the anterior chest wall. It is 10 times less frequent than pectus excavatum. It has a progressive growth and is more common with men. There are two different types, the lower or condrocorporal which is the most common one, and the upper or condromanubrial. Most of the time there are no cardio-respiratory symptoms.

OBJECTIVE:

We present our experience in the orthopedic treatment of the pectus carinatum.

METHOD:

Retrospective review of patients treated in our hospital from 2002 until 2009. Patients were treated with observation, aerobic exercises, postural change and/or compression braces. Literature review was performed of the treatment for this pathology.

RESULTS:

18 patients have been diagnosed with PC, 16 were men and 2 women. All were treated in a nonoperative way. Only 11 of them used a compression brace. We missed two follow-ups and another has just yet begun to achieve proper results. All the rest have had excellent results with nonoperative treatment. None of them have had a surgical treatment.

CONCLUSION:

The PC is a disease that most often is a cosmetic problem, with no impact on a cardio-respiratory level. Classically it has been a surgical entity. In our experience we have found that the orthopedic method is an effective alternative, safe and with a significant reduction in morbidity. But we need the collaboration of the patient to accept and maintain continuity in the use of the prostheses.

Prosthesis-free repair of pectus chest deformity.

Makarawo TP, Steyn RS, Naidu BV.

Source

Regional Department of Thoracic Surgery, Heart of England NHS Foundation Trust, Birmingham, UK.

Abstract**BACKGROUND:**

Modified Ravitch and Nuss procedures use a metal bar to repair pectus chest deformity; an additional procedure is required to remove the bar. The aim of this study was to examine mid-term results of a novel technique that uses the patient's own chest wall muscles to stabilize the pectus repair aided by a posture-maintaining exercise regimen.

METHODS:

Thirty-two consecutive patients with pectus deformity underwent pectus repair without prosthesis between 1999 and 2008. The median age of the group was 18 (95 per cent confidence interval (c.i.) 14 to 34) years. Median follow-up was 44 (7 to 108) months. Twenty patients had an excavatum and 12 a carinatum defect. Surgery was performed through a transverse incision raising pectoralis and rectus muscle flaps. The sternum was released to a neutral position and stabilized to the overlying muscle raphe closure. Patient satisfaction was assessed with a single-step questionnaire.

RESULTS:

Median length of stay was 6 (95 per cent c.i. 4 to 7) days. Two patients returned to theatre for bleeding, two had a superficial wound infection and four developed a seroma. No patient had recurrence. There was a significant improvement in self-esteem ($P < 0.001$) and a high level of overall satisfaction (median score 72, 95 per cent c.i. 56 to 80).

CONCLUSION:

This non-prosthetic pectus deformity repair was effective with low serious morbidity and high patient satisfaction without the inherent disadvantages of using a metal bar.

Three-dimensional computed tomography for evaluation and management of children with complex chest wall anomalies: useful information or just pretty pictures?

Calloway EH, Chhotani AN, Lee YZ, Phillips JD.

Email: elizabeth_calloway@med.unc.edu

Source

Department of Surgery, UNC Chapel Hill School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC 27516, USA.

Abstract

PURPOSE:

Shaded surface display (SSD) technology, with 3-dimensional computed tomography reconstruction, has been reported in a few small series of patients with congenital or acquired chest wall deformities. Shaded surface display images are visually attractive and educational, but many institutions are hesitant to use these secondary to cost and image data storage concerns. This study was designed to assess the true value of SSD to the patient, family, and operating surgeon, in the evaluation and management of these children.

METHODS:

After institutional review board approval, we performed a retrospective review of records of 82 patients with chest wall deformities, evaluated with SSD, from 2002 to 2009. Shaded surface display usefulness, when compared to routine 2-dimensional computed tomography, was graded on a strict numerical scale from 0 (added no value besides education for the patient/family) to 3 (critical for surgical planning and patient management).

RESULTS:

There were 56 males and 26 females. Median age was 15.3 years (range, 0.6-41.1 years). Deformities included 56 pectus excavatum, 19 pectus carinatum, and 8 other/mixed deformities. Six patients also had acquired asphyxiating thoracic dystrophy (AATD). Eleven (13%) had previous chest wall reconstructive surgery. In 25 (30%) patients, SSD was useful or critical. Findings underappreciated on 2-dimensional images included sternal abnormalities (29), rib abnormalities (28), and heterotopic calcifications (7). Shaded surface display changed or influenced operation choice (4), clarified bone vs soft tissue (3), helped clarify AATD (3), and aided in rib graft evaluation (2). Point biserial correlation coefficient analysis (R(pb)) displayed significance for SSD usefulness in patients with previous chest repair surgery (R(pb) = 0.48, P ≤ .001), AATD (R(pb) = 0.34, P = .001), pectus carinatum (R(pb) = 0.27, P = .008), and females (R(pb) = 0.19, P = .044).

CONCLUSIONS:

Shaded surface display, when used to evaluate children and young adults with congenital or acquired chest wall deformities, provides useful or critical information for surgical planning and patient management in almost one third of patients, especially in those requiring a second operation, with acquired asphyxiating thoracic dystrophy, pectus carinatum, and females.

Ten-year experience with the muscle split technique, bioabsorbable plates, and postoperative bracing for correction of pectus carinatum: the Innsbruck protocol.

Del Frari B, Schwabegger AH.

Email: Barbara.Del-Frari@i-med.ac.at

Source

Department of Plastic, Reconstructive and Aesthetic Surgery, Medical University Innsbruck, Austria.

Abstract

OBJECTIVE:

We reviewed further clinical experience with our approach for pectus carinatum repair: modified surgical approach of pectoralis muscle split technique, bioabsorbable plates with screws, and postoperative compressive brace.

METHODS:

From April 2000 to February 2010, 55 patients underwent pectus carinatum repair at our department with modifications of conventional Ravitch repair. There were 14 female and 41 male patients, mean age of 19.3 years at the onset of treatment. Postoperative treatment involved fitting of a lightweight, patient-controlled chest brace.

RESULTS:

Average follow-up was 13.7 months. Patient satisfaction was excellent for 40 patients (72.7%) and good for the remaining 15 (27.3%); aesthetic appearance was excellent for 37 patients (67.3%) and good for the remaining 18 (32.7%). Postoperative evaluation was objective measurement with a thorax caliper and clinical examination. No major perioperative complications were observed. Postoperative complications were mild recurrence of deformity (n = 3) and persistent, mild, single costal cartilage protrusion (n = 2). No patient had palpable plates or screws, and there was no material breakdown.

CONCLUSIONS:

The combination of muscle split technique and absorbable osteosynthesis represents an alternative in pectus carinatum repair. The pectoralis muscle split technique allows early patient mobilization and rehabilitation. Bioabsorbable plates get completely absorbed, avoiding second operation, and chest brace provides postoperative immobilization of the anterior thoracic wall during healing and avoids development of hypertrophic scars. Our combined approach to the correction of pectus carinatum deformities yields predominantly excellent esthetic results, with low morbidity, low costs, and less invasiveness, leading to high patient satisfaction.

New Berlin-Buch "reversed Nuss," endoscopic pectus carinatum repair using eight-hole stabilizers, submuscular CO₂, and presternal Nuss bar compression: first results in 35 patients.

Schaarschmidt K, Lempe-Sellin M, Schlesinger F, Jaeschke U, Polleichtner S.

Email: klaus.schaarschmidt@helios-kliniken.de

Source

Helios Center for Pediatric and Adolescent Surgery, Berlin-Buch, Berlin, Germany.

Abstract

INTRODUCTION:

Since 2001 we minimized access (2.9-4.7 cm) for universally applicable endoscopic hybrid carinatum technique with two transsternal Willital bars in 173 endoscopic hybrid (EH) patients with very satisfactory results. In 2008-2009, endoscopic Nuss bar compression with endoscopic repair of costal flaring applied a new eight-hole stabilizer, which allows the use in pectus carinatum (PC) beyond adolescence including redos and combined deformities. This

prospective study of 35 "endoscopic Berlin-Buch reversed Nuss" repairs intends to establish indications for this improved technique.

MATERIALS AND METHODS:

In February 2008 to February 2010, we used endoscopic Nuss bar compression by applying a bilateral new eight-hole stabilizer fixed to the bar without screws or wires, which allows unprecedented versatility and the use in pectus carinatum beyond adolescence. Thirty-five patients aged 17.05 ± 10.2 years (range: 11.3-33.1 years) were recorded prospectively and followed at 3 monthly intervals. We implanted a standard Nuss bar (11-14') into an endoscopically dissected submuscular presternal pocket correcting PC by sternal pressure. The bars were put under tension by traction via bilateral eight-hole stabilizers and three pericostal wire sutures on each side. Bars were removed after 2 years.

RESULTS:

All 35 "reversed Nuss" pectus carinatum repairs, including 2 redos after Ravitch, were successful, with no conversion. So far there was no local or general complication and no seroma or bar dislocation. Thirty-one patients judged their result as excellent and 4 as good.

CONCLUSIONS:

Although this is a very early experience, "reversed Nuss" is safe and effective and new technical improvements have expanded the range of applicability to older patients and suitable redos.

Pectus excavatum and pectus carinatum patients suffer from lower quality of life and impaired body image: a control group comparison of psychological characteristics prior to surgical correction.

Steinmann C, Krille S, Mueller A, Weber P, Reingruber B, Martin A.

Source

Department of Psychosomatic Medicine and Psychotherapy, University Hospital of Erlangen, Schwabachanlage 6, 91054 Erlangen, Germany.

Email: cornelia.steinmann@uk-erlangen.de

Abstract

OBJECTIVE:

The aim of this study was to evaluate the effects of anterior chest-wall deformities on disease-specific and health-related quality of life, body image, and psychiatric comorbidity prior to surgical correction.

METHODS:

A total of 90 patients (71 with pectus excavatum, 19 with pectus carinatum) presenting themselves for pectusrepair and 82 control subjects were recruited for this study. The objective severity of the deformity was determined through the funnel-chest index by Hümmer and the Haller index. Disease-specific quality of life was measured with the Nuss Questionnaire modified for Adults (NQ-mA) and health-related quality of life was determined by the Short-Form-36 Health Survey (SF-36). Body image was assessed via the Body Image Questionnaire (FKB-20), the Dysmorphic Concern Questionnaire (DCQ), and a self-evaluation of the subjective impairment of the appearance. The Diagnostic Interview for Mental Disorders - Short Version (Mini-DIPS), the General Depression Scale (Allgemeine Depressionsskala, ADS), and a self-rating of self-esteem were used to evaluate general psychological impairment.

RESULTS:

Compared with control group results, physical quality of life was reduced in patients with pectus excavatum, while mental quality of life was decreased in patients with pectus carinatum ($p < 0.05$). Body image was highly disturbed in all the patients and differed significantly from the control group ($p < 0.01$). Patients with pectus carinatum appeared to be less

satisfied with their appearance than those with pectus excavatum ($p=0.07$). Body image distress was multivariately associated with both reduced mental quality of life and low self-esteem ($p<0.001$). Body image did not influence physical quality of life. Patients displayed no elevated rates of mental disorders according to Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) criteria.

CONCLUSION:

Since self-perception is a major contributor to therapeutic decision making, a systematic evaluation of body image should be included in the assessment of patients with chest deformities. Body image concerns may be even more relevant to the decision-making process than physical restrictions. Exaggerated dysmorphic concerns should be prospectively investigated in their ability to influence the extent of satisfaction with the surgical outcome.

Thoracoscopic cartilage resection with partial perichondrium preservation in unilateral pectus carinatum: preliminary results.

Varela P, Torre M.

Abstract

BACKGROUND/PURPOSE:

Although minimally invasive repair of pectus excavatum has gained worldwide acceptance, treatment of pectus carinatum is mostly performed with open procedures. Different minimally invasive alternatives have been proposed in the last few years, including subpectoral CO(2) dissection and intrathoracic compression (Abramson technique), or conservative procedures, as dynamic compression system. Recently, another surgical technique has been proposed for the treatment of unilateral pectus carinatum, consisting of a thoracoscopic approach and multiple cartilage incisions. The aim of this work is to present our modification to this approach.

METHODS:

We have modified this technique by introducing complete cartilage resection of all anomalous costal cartilages, performed thoracoscopically. Three thoracoscopic ports were used. Cartilage is removed progressively using a rongeur and preserving the anterior perichondrium.

RESULTS:

We have performed this technique in 4 patients during the last year. Follow-up ranged from 6 to 14 months. No intraoperative or postoperative complications were observed. The results, assessed by the patients themselves, were good in 2 cases, quite good in one, and fair in the first patient of our series, who was reoperated using a classical open approach. Pain was well controlled without the need of an epidural catheter.

CONCLUSION:

Thoracoscopic cartilage resection with perichondrium preservation can be considered as feasible alternative for the treatment of unilateral pectus carinatum.

Minimally invasive repair of pectus carinatum using a newly designed bar and stabilizer: a single-institution experience.

Yüksel M, Bostanci K, Evman S.

Source

Marmara University Faculty of Medicine, Department of Thoracic Surgery, Istanbul, Turkey.

Abstract

OBJECTIVE:

A modified technique of the Nuss procedure for the minimally invasive repair of pectus carinatum was defined by Abramson, and it has been gaining support for the last few years. We have been performing the Abramson procedure in our institutions since 2006. This article describes our recent experience with a novel instrument for pectus carinatum correction.

METHODS:

In 2008, we developed a new pectus bar and stabilizing system for this procedure and started using it on our pectus carinatum patients. Between July 2008 and December 2009, 18 patients were operated on with these newly designed implants.

RESULTS:

Excellent esthetic results obtained regarding the postoperative course, verified with the patients' and parent's answers on a satisfaction questionnaire; all patients except one (94.4%) feeling satisfied with the operation. Two of the bars have been removed during the 18-month follow-up. Three fixating steel wire breakages requiring re-fixing of the stabilizers and two local skin adhesions over the bar were seen as postoperative complications.

CONCLUSION:

This article describes a novel instrument and surgical technique that is safely and easily used in minimally invasive correction of pectus carinatum deformities, with minimal complications and high satisfaction rates.

Pectus carinatum.

Robicsek F, Watts LT.

Source

Department of Thoracic and Cardiovascular Surgery, Sanger Heart and Vascular Institute, Carolinas Medical Center, 1001 Blythe Boulevard, Suite 300, Charlotte, NC 28203, USA.

Email: francis.robicsek@carolinashalthcare.org

Abstract

Pectus carinatum or keel chest is a spectrum of progressive inborn anomalies of the anterior chest wall, named after the keel (carina) of ancient Roman ships. It defines a wide spectrum of inborn protrusion anomalies of the sternum and/or the adjacent costal cartilages. Pectus carinatum is often associated with various conditions, notably Marfan disease, homocystinuria, prune belly, Morquio syndrome, osteogenesis imperfecta, Noonan syndrome, and mitral valve prolapse. Treatment of pectus carinatum by nonsurgical methods such as exercise and casting has not been worthwhile, whereas surgical management is simple and successful.

The prevalence and effects of Pectus Excavatum and Pectus Carinatum on the respiratory function in children between 7-14 years old.

Coskun ZK, Turgut HB, Demirsoy S, Cansu A.

Source

Basic Science Department of Anatomy, Gazi University Faculty of Medicine, Ankara, Turkey.

Email: zcoskun@gazi.edu.tr

Abstract

The study involved 1342 primary school students aged 7-14 years who applied to Ankara, a primary care center for general health check-up between 2006 and 2007. Forty-three students,

35 of whom had PE and 8 of whom had PC, were subjected to thorax measurement. All 43 students underwent pulmonary function tests (PFT). The prevalence rate of PC was 0.6%, and of PE, 2.6%. The thorax widths of the groups were similar ($P = 0.273$). The thorax circumference and depth of PE group were lower than those of the controls ($P < 0.05$). The probability rate of abnormality in PFT scores of PE group was statistically significantly higher than that of the controls ($P = 0.022$) whereas absence of normal PFT scores the difference between PC group and the controls was not statistically significant ($p = 0.095$). The results indicate that more than half of the individuals with pectus deformity do not have any physical complaints and do not have statistically significant differences in their PFT parameters.

The prevalence and effects of Pectus Excavatum and Pectus Carinatum on the respiratory function in children between 7-14 years old.

Coskun ZK, Turgut HB, Demirsoy S, Cansu A.

Source

Basic Science Department of Anatomy, Gazi University Faculty of Medicine, Ankara, Turkey.

Email: zcoskun@gazi.edu.tr

Abstract

The study involved 1342 primary school students aged 7-14 years who applied to Ankara, a primary care center for general health check-up between 2006 and 2007. Forty-three students, 35 of whom had PE and 8 of whom had PC, were subjected to thorax measurement. All 43 students underwent pulmonary function tests (PFT). The prevalence rate of PC was 0.6%, and of PE, 2.6%. The thorax widths of the groups were similar ($P = 0.273$). The thorax circumference and depth of PE group were lower than those of the controls ($P < 0.05$). The probability rate of abnormality in PFT scores of PE group was statistically significantly higher than that of the controls ($P = 0.022$) whereas absence of normal PFT scores the difference between PC group and the controls was not statistically significant ($p = 0.095$). The results indicate that more than half of the individuals with pectus deformity do not have any physical complaints and do not have statistically significant differences in their PFT parameters.

