Congenital cardiac surgery

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Long-term survival and center volume for functionally single-ventricle congenital heart disease in England and Wales

Lun, 12/19/2022 - 11:00

J Thorac Cardiovasc Surg. 2022 Nov 25:S0022-5223(22)01259-4. doi: 10.1016/j.jtcvs.2022.11.018. Online ahead of print.

ABSTRACT

OBJECTIVES: Long-term survival is an important metric for health care evaluation, especially in functionally single-ventricle (f-SV) congenital heart disease (CHD). This study's aim was to evaluate the relationship between center volume and long-term survival in f-SV CHD within the centralized health care service of England and Wales.

METHODS: This was a retrospective cohort study of children born with f-SV CHD between 2000 and 2018, using the national CHD procedure registry, with survival ascertained in 2020.

RESULTS: Of 56,039 patients, 3293 (5.9%) had f-SV CHD. Median age at first intervention was 7 days (interquartile range [IQR], 4, 27), and median follow-up time was 7.6 years (IQR, 1.0, 13.3). The largest diagnostic subcategories were hypoplastic left heart syndrome, 1276 (38.8%); tricuspid atresia, 440 (13.4%); and double-inlet left ventricle, 322 (9.8%). The survival rate at 1 year and 5 years was 76.8% (95% confidence interval [CI], 75.3%-78.2%) and 72.1% (95% CI, 70.6%-73.7%), respectively. The unadjusted hazard ratio for each 5 additional patients with f-SV starting treatment per center per year was 1.04 (95% CI, 1.02-1.06), P < .001. However, after adjustment for significant risk factors (diagnostic subcategory; antenatal diagnosis; younger age, low weight, acquired comorbidity, increased severity of illness at first procedure), the hazard ratio for f-SV center volume was 1.01 (95% CI, 0.99-1.04) P = .28. There was strong evidence that patients with more complex f-SV (hypoplastic left heart syndrome, Norwood pathway) were treated at centers with greater f-SV case volume (P < .001).

CONCLUSIONS: After adjustment for case mix, there was no evidence that f-SV center volume was linked to longer-term survival in the centralized health service provided by the 10 children's cardiac centers in England and Wales.

PMID:36535820 | DOI:10.1016/j.jtcvs.2022.11.018

Categorías: Cirugía congénitos

A retrospective analysis of blood culture-negative endocarditis at a tertiary care centre in Switzerland

Lun, 12/19/2022 - 11:00

Swiss Med Wkly. 2022 Dec 10;152:40012. doi: 10.57187/smw.2022.40016.

ABSTRACT

AIMS OF THE STUDY: Numerous studies from different countries have contributed to an improved understanding of blood culture-negative infective endocarditis. However, little is known about its epidemiology and microbiology in Switzerland. We aimed to assess the epidemiology and microbiology of blood culture-negative endocarditis at the University Hospital Zurich, Switzerland.

METHODS: We screened all patients hospitalised between 1997 and 2020 with possible or definite endocarditis at our institution. Thereof, we identified all cases with blood culture-negative endocarditis and retrospectively retrieved patient characteristics, microbiological, histopathological, radiographic and surgical data from medical records.

RESULTS: Among 861 patients screened, 66 (7.7%) cases of blood culture-negative endocarditis were identified. Thereof, 31 cases could be microbiologically documented or not documented (n = 30), and in five cases a non-infectious aetiology was confirmed. Endocarditis predominantly affected men (77%) and the left heart (79%); predisposing factors were prosthetic valves (42%), congenital heart disease (35%) and prior endocarditis (14%). The most common reasons for negative blood cultures were antibiotic treatment prior to blood culture sampling (35%), fastidious and slow growing microorganisms (30%) and definite non-infective endocarditis (8%). Coxiella burnetii and Bartonella spp. were the most common fastidious bacteria identified. In addition to serology, identification of causative microorganisms was possible by microbiological and/or histopathological analysis of tissue samples, of which polymerase chain reaction testing (PCR) of the 16S ribosomal RNA proved to be most successful.

CONCLUSIONS: The present study provides a detailed analysis of blood culture-negative endocarditis over a time span of more than 20 years in Zurich, Switzerland. Antibiotic treatment prior to blood collection, and fastidious and slow growing organisms were identified as main reasons for sterile blood cultures. Typical culture-negative bacteria were mainly found by PCR and/or culture of tissue samples.

PMID:36534966 | DOI:10.57187/smw.2022.40016

Categorías: Cirugía congénitos

3D modeling and printing for complex biventricular repair of double outlet right ventricle

Lun, 12/19/2022 - 11:00

Front Cardiovasc Med. 2022 Nov 30;9:1024053. doi: 10.3389/fcvm.2022.1024053. eCollection 2022.

ABSTRACT

BACKGROUND: Double outlet right ventricle (DORV) describes a group of congenital heart defects where pulmonary artery and aorta originate completely or predominantly from the right ventricle. The individual anatomy of DORV patients varies widely with multiple subtypes classified. Although the majority of morphologies is suitable for biventricular repair (BVR), complex DORV anatomy can render univentricular palliation (UVP) the only option. Thus, patient-specific decision-making is critical for optimal surgical treatment planning. The evolution of image processing and rapid prototyping techniques facilitate the generation of detailed virtual and physical 3D models of the patient-specific anatomy which can support this important decision process within the Heart Team.

MATERILAS AND METHODS: The individual cardiovascular anatomy of nine patients with complex DORV, in whom surgical decision-making was not straightforward, was reconstructed from either computed tomography or magnetic resonance imaging data. 3D reconstructions were used to characterize the morphologic details of DORV, such as size and location of the ventricular septal defect (VSD), atrioventricular valve size, ventricular volumes, relationship between the great arteries

and their spatial relation to the VSD, outflow tract obstructions, coronary artery anatomy, etc. Additionally, physical models were generated. Virtual and physical models were used in the preoperative assessment to determine surgical treatment strategy, either BVR vs. UVP.

RESULTS: Median age at operation was 13.2 months (IQR: 9.6-24.0). The DORV transposition subtype was present in six patients, three patients had a DORV-ventricular septal defect subtype. Patient-specific reconstruction was feasible for all patients despite heterogeneous image quality. Complex BVR was feasible in 5/9 patients (55%). Reasons for unsuitability for BVR were AV valve chordae interfering with potential intraventricular baffle creation, ventricular hypoplasia and non-committed VSD morphology. Evaluation in particular of qualitative data from 3D models was considered to support comprehension of complex anatomy.

CONCLUSION: Image-based 3D reconstruction of patient-specific intracardiac anatomy provides valuable additional information supporting decision-making processes and surgical planning in complex cardiac malformations. Further prospective studies are required to fully appreciate the benefits of 3D technology.

PMID:36531701 | PMC:PMC9748612 | DOI:10.3389/fcvm.2022.1024053

Categorías: Cirugía congénitos

Tetralogy of Fallot Repair After Neonatal Right Ventricular Outflow Tract Stenting: Initial Multicenter Experience in Argentina

Lun, 12/19/2022 - 11:00

World J Pediatr Congenit Heart Surg. 2022 Dec 18:21501351221140097. doi: 10.1177/21501351221140097. Online ahead of print.

ABSTRACT

Initial management of patients with tetralogy of Fallot, unfavorable anatomy, and reduced pulmonary blood flow is controversial and continues to be a clinical challenge. Pulmonary to systemic shunt anastomosis or primary correction in neonates and small infants is associated with higher morbimortality and increased number of reoperations. Initial right ventricle outflow tract stenting palliation has emerged as an attractive alternative. We report our experience in 14 patients operated on with tetralogy of Fallot and previous right ventricle outflow tract stenting from March 2018 to June 2022. All stented patients had pulmonary annulus and main pulmonary artery Z score ≤ -2.5. Surgical outcomes, complications, and mortality at 30 days were evaluated. Patient's age and weight at surgery were 5.9 months (2-17) and 6.1 kg (3.9-8.9), respectively. Stents were completely removed in 57.1% of patients. A transannular patch was placed in 10 patients, 3 patients required a right ventricle to pulmonary artery conduit due to coronary anomalies and in 1 patient, the pulmonary valve was preserved. Length of stay and ventilation time were 13.6 days (5-27) and 44.8 h (6-44), respectively. Mean time for right ventricle outflow tract stent implantation to surgical correction was 4 months (2-16). There was no mortality, and mean follow-up time of this cohort was 23.1 month (1-41). Surgical correction of severe tetralogy of Fallot after right ventricle outflow tract stenting is an effective alternative achievable without an increase in morbidity and mortality. Difficulty in stent extraction is related to the time since implantation. More number of patients and longer follow-up time are needed to confirm these initial results.

PMID:36529896 | DOI:10.1177/21501351221140097

Categorías: Cirugía congénitos

Five critically ill pregnant women/parturients treated with extracorporeal membrane oxygenation

Sáb, 12/17/2022 - 11:00

J Cardiothorac Surg. 2022 Dec 18;17(1):321. doi: 10.1186/s13019-022-02093-1.

ABSTRACT

BACKGROUND: Maternal mortality has always been a major medical concern. Recently, the successful application of extracorporeal membrane oxygenation (ECMO) technology in the rescue of near-death patients has been reported.

CASE PRESENTATION: This study retrospectively analyzed 5 cases of critically ill pregnant women/parturients treated with ECMO for respiratory and circulatory failure in the Wuxi People's Hospital from 2018 to 2020. The mean age of the 5 cases was 30.2 years. Among them, Cases 1 and 5 were treated with Venoarterial (VA) ECMO. Case 1 was diagnosed with congenital heart disease, atrial septal defect, and severe pulmonary hypertension. VA ECMO was applied before cesarean section and was successfully removed after double lung transplantation, but the patient died 10 months after delivery from lung infection. While Case 5 was diagnosed with systemic lupus erythematosus, lupus nephritis, thrombotic vascular disease, HELLP syndrome, and cerebral hemorrhage. VA ECMO was applied 39 days after cesarean section, and the patient died 40 days after delivery due to multiple organ failure. Cases 3 and 4 were treated with Venovenous (VV) ECMO. Case 3 was diagnosed with refractory postpartum hemorrhage, and Case 4 was diagnosed with postpartum hypoglycemic coma, aspiration pneumonia, and shock. They were treated with VV ECMO after delivery, and all survived after successful evacuation. Another Case (Case 2) was diagnosed with postpartum pelvic infection, sepsis and septic shock, and was treated with VA ECMO at 15 days after delivery. The patient changed to VV ECMO at 30 days after delivery due to significant improvement in heart function and poor lung function, but eventually died of multiple organ failure. For the 5 cases, the mean duration of ECMO was 8.7 days, the mean duration of intensive care was 22.0 days, and the mean length of hospital stay was 57.6 days. As a result, 3 patients gradually returned to normal with significant improvement in ventilation and oxygenation after ECMO treatment.

CONCLUSIONS: ECMO technology can be used to treat some of the critical obstetric patients with respiratory and circulatory failure that is ineffective to conventional treatment, but it has no therapeutic effect on the primary disease.

PMID:36528774 | PMC:PMC9759865 | DOI:10.1186/s13019-022-02093-1

Categorías: Cirugía congénitos

A rare association of invasive infective endocarditis due to Abiotrophia defectiva with ventricular septal defect and recurrent Henoch-Schonlein purpura in a child

Sáb, 12/17/2022 - 11:00

J Cardiothorac Surg. 2022 Dec 17;17(1):320. doi: 10.1186/s13019-022-02092-2.

ABSTRACT

BACKGROUND: Henoch-Schonlein purpura is the most common vasculitis in childhood, usually triggered by an upper respiratory tract infection and rarely observed in infective endocarditis patients. Abiotrophia defectiva is a rare causative agent of infective endocarditis associated with pre-existing heart disease, immunocompromised and prosthetic valves. Dental procedures are also a common predisposing factor.

CASE PRESENTATION: We present the first pediatric congenital heart disease case of infective endocarditis caused by Abiotrophia defectiva combined with recurrent Henoch-Schonlein purpura. A 10-year-old girl with uncorrected congenital heart defects and Henoch-Schonlein purpura developed a purple petechial rash again. Transthoracic echocardiography evaluation revealed multiple irregular

vegetations on the right ventricular side of the ventricular septal defect and on the tricuspid valve leaflets. Blood cultures grew Abiotrophia defectiva. The girl received cardiac surgery for vegetation resection as well as congenital heart defect correction and tricuspid valve replacement. Five months after the surgery, the patient was in satisfactory condition without any signs of endocarditis or valve insufficiency and her purpuric rash disappeared.

CONCLUSIONS: The coexistence of recurrent Henoch-Schonlein purpura and infective endocarditis is possible. Abiotrophia defectiva belongs to the streptococcus with a high virulence. In addition, cardiovascular surgery is often required for pediatric infective endocarditis associated with Abiotrophia defectiva, and bioprosthetic valve replacement is considered feasible for irreparable tricuspid valve in children.

PMID:36528593 | PMC:PMC9758810 | DOI:10.1186/s13019-022-02092-2

Categorías: Cirugía congénitos

Pregnancy outcomes of women with Eisenmenger syndrome: A single-center study

Vie, 12/16/2022 - 11:00

Int J Cardiol. 2022 Dec 13:S0167-5273(22)01888-5. doi: 10.1016/j.ijcard.2022.12.014. Online ahead of print.

ABSTRACT

BACKGROUND: To explore the outcomes of mothers with Eisenmenger syndrome (ES) and their offspring.

METHODS: Pregnant women with ES admitted to the Beijing Anzhen Hospital between 2010 and 2019 were retrospectively analyzed and followed up.

RESULTS: Forty-two parturient women with ES were recruited, with an average age of 26.7 years (standard deviation [SD], ±4.0 years). The average gestational age was 33.7 weeks (SD, ±2.5 weeks). The average percutaneous oxygen saturation was 84.1 (±9.2), and 40 (95.2%) had caesarean delivery. The average pulmonary artery systolic pressure was 107.5 mmHg (SD, ±20.3 mmHg). Twelve (28.6%) women experienced pulmonary hypertensive crisis; 11 (26.2%) of these women died. Regarding the offspring, the average fetal weight was 1778.1 g (SD, ±555.3 g), six (14.3%) died, and congenital heart disease was diagnosed in three (7.1%). There were significant differences in age, gestational age, percutaneous oxygen saturation, Apgar score, and heart failure between the maternal death and non-death groups ($P < 0.05$). Death was mainly related to pulmonary hypertensive crisis and heart failure.

CONCLUSIONS: We recommend pregnancy termination if ES occurs during early pregnancy; however, patients should be informed of the risks if it occurs during late pregnancy. Multidisciplinary cooperation should be strengthened to improve the prognosis of the mothers and their offspring.

PMID:36526021 | DOI:10.1016/j.ijcard.2022.12.014

Categorías: Cirugía congénitos

Hallermann-Streiff Syndrome and Lower Limb Lymphedema with Nasal Obstruction

Vie, 12/16/2022 - 11:00

Case Rep Med. 2022 Dec 6;2022:1520880. doi: 10.1155/2022/1520880. eCollection 2022.

ABSTRACT

BACKGROUND: Hallermann-Streiff syndrome (HSS) is a rare congenital abnormality involving multiple craniofacial malformations, such as micrognathia, prominent frontal and nasal bones, vision defects, and dental anomalies, which can result in obstructive sleep apnea syndrome. The aim of the present study was to report a case of nasal obstruction in an individual with Hallermann-Streiff syndrome who had never breathed through the nose during treatment for lower limb lymphedema involving cervical lymphatic therapy. *Case Report*. An 18-year-old female adolescent with a diagnosis of HSS was sent from the genetics service of a teaching school for the treatment of lower limb lymphedema. At around 11 years of age, the patient began to present edema in the left leg, accompanied by broadening of the face and neck. The patient reported having obstructed nostrils and breathing through the mouth her entire life. On the second day of treatment, the patient reported being able to breathe through one of the nostrils, this had never occurred before. Based on this finding, the decision was made to include linear facial lymphatic drainage using the Godoy method, which led to the complete resolution of the nasal obstruction in the first 15 minutes of treatment. Nasal obstruction in children with Hallermann-Streiff syndrome may be caused by lymphedema.

CONCLUSION: A specific lymphatic drainage technique, such as cervical lymphatic therapy and facial linear lymphatic therapy, can resolve the obstruction and maintain the nostrils unblocked for months.

PMID:36523540 | PMC:PMC9747296 | DOI:10.1155/2022/1520880

Categorías: Cirugía congénitos

Impact of severe valvular heart disease in adult congenital heart disease patients

Vie, 12/16/2022 - 11:00

Front Cardiovasc Med. 2022 Nov 29;9:983308. doi: 10.3389/fcvm.2022.983308. eCollection 2022.

ABSTRACT

BACKGROUND: The clinical impact of valvular heart disease (VHD) in adult congenital heart disease (ACHD) patients is unascertained. Aim of our study was to assess the prevalence and clinical impact of severe VHD (S-VHD) in a real-world contemporary cohort of ACHD patients.

MATERIALS AND METHODS: Consecutive patients followed-up at our ACHD Outpatient Clinic from September 2014 to February 2021 were enrolled. Clinical characteristics and echocardiographic data were prospectively entered into a digitalized medical records database. VHD at the first evaluation was assessed and graded according to VHD guidelines. Clinical data at follow-up were collected. The study endpoint was the occurrence of cardiac mortality and/or unplanned cardiac hospitalization during follow-up.

RESULTS: A total of 390 patients (median age 34 years, 49% males) were included and S-VHD was present in 101 (25.9%) patients. Over a median follow-up time of 26 months (IQR: 12-48), the study composite endpoint occurred in 76 patients (19.5%). The cumulative endpoint-free survival was significantly lower in patients with S-VHD *vs.* patients with non-severe VHD (Log rank $p < 0.001$). At multivariable analysis, age and atrial fibrillation at first visit ($p = 0.029$ and $p = 0.006$ respectively), lower %Sat O2, higher NYHA class ($p = 0.005$ for both), lower LVEF ($p = 0.008$), and S-VHD ($p = 0.015$) were independently associated to the study endpoint. The likelihood ratio test demonstrated that S-VHD added significant prognostic value ($p = 0.017$) to a multivariate model including age, severe CHD, atrial fibrillation, %Sat O2, NYHA, LVEF, and right ventricle systolic pressure > 45 mmHg.

CONCLUSION: In ACHD patients, the presence of S-VHD is independently associated with the

occurrence of cardiovascular mortality and hospitalization. The prognostic value of S-VHD is incremental above other established prognostic markers.

PMID:36523370 | PMC:PMC9744774 | DOI:10.3389/fcvm.2022.983308

Categorías: Cirugía congénitos

Cardiac Arrest Following Torsades de Pointes Caused by Hypokalemia and Catecholamines in a Patient with Congenital Long QT Syndrome Type 1 After Surgical Aortic Valve Replacement: A Case Report

Vie, 12/16/2022 - 11:00

Am J Case Rep. 2022 Dec 16;23:e938609. doi: 10.12659/AJCR.938609.

ABSTRACT

BACKGROUND Prevention of lethal arrhythmias in congenital long QT syndrome type 1 (LQT1) requires avoidance of sympathoexcitation, drugs that prolong QT, and electrolyte abnormalities. However, it is often difficult to avoid all these risks in the perioperative period of open heart surgery. Herein, we report hypokalemia-induced cardiac arrest in a postoperative cardiac patient with LQT1 on catecholamine. CASE REPORT A 79-year-old woman underwent surgical aortic valve replacement for severe aortic stenosis. Although the initial plan was not to use catecholamine, catecholamine was used in the Postoperative Intensive Care Unit with attention to QT interval and electrolytes due to heart failure caused by postoperative bleeding. Serum potassium levels were controlled above 4.5 mEq/L, and no arrhythmic events occurred. On postoperative day 4, the patient was started on insulin owing to hyperglycemia. Cardiac arrest occurred after the first insulin dose; the implantable cardioverter defibrillator was activated, and the patient's own heartbeat resumed. Subsequent examination revealed that a marked decrease in serum potassium level had occurred after insulin administration. The electrocardiogram showed obvious QT prolongation and ventricular fibrillation following R on T. Thereafter, under strict potassium management, there was no recurrence of cardiac arrest events. CONCLUSIONS A patient with LQT1 who underwent open heart surgery developed ventricular fibrillation after Torsades de Pointes, probably due to hypokalemia after insulin administration in addition to catecholamine. It is important to check serum potassium levels to avoid the onset of Torsades de Pointes in patients with long QT syndrome. In addition, the impact of insulin administration was reaffirmed.

PMID:36523136 | PMC:PMC9764086 | DOI:10.12659/AJCR.938609

Categorías: Cirugía congénitos

- « primera
- ‹ anterior
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