

Valvular cardiac surgery



valvular cardiac surgery: Latest results from PubMed

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Actualizado: hace 1 año 12 semanas

[Simultaneous Tricuspid and Pulmonic Valve Replacement Due to Infective Endocarditis](#)

Jue, 12/29/2022 - 11:00

Cureus. 2022 Nov 26;14(11):e31902. doi: 10.7759/cureus.31902. eCollection 2022 Nov.

ABSTRACT

Right-sided valvular infective endocarditis (RSIE) is often associated with intravenous (IV) drug abuse and typically involves the tricuspid valve. The involvement of both the tricuspid and pulmonic valves is a rare entity. A 39-year-old woman presented with fever, dyspnea on exertion, and chest pain. She was subsequently found to have infectious endocarditis (IE) with the involvement of both the tricuspid and pulmonic valves. Simultaneous tricuspid and pulmonic valvular repair with bioprosthetic valves were performed with bovine pericardium to reconstruct the anterior surface of the pulmonary artery. Recovery was complicated by the development of a complete atrioventricular (AV) block requiring pacemaker implantation. Following device placement, the patient also developed two episodes of ventricular tachycardia arrest likely precipitated by the device. Return of spontaneous circulation (ROSC) was achieved and no further episodes occurred once the device was exchanged with a cardiac resynchronization therapy defibrillator. The patient improved clinically and was discharged home with no further complications.

PMID:[36579195](#) | PMC:[PMC9791947](#) | DOI:[10.7759/cureus.31902](#)

Categorías: [Cirugía valvular](#)

[Evaluation of congenital and acquired heart diseases in a Spanish cohort of adults with Down syndrome](#)

Mié, 12/28/2022 - 11:00

Sci Rep. 2022 Dec 28;12(1):22461. doi: 10.1038/s41598-022-26918-0.

ABSTRACT

To describe congenital and acquired heart diseases in a Spanish cohort of adults with Down syndrome (DS), which could inform potential health recommendations for this population. Cross-sectional, observational study of adults with DS evaluated consecutively at a tertiary care, outpatient center between January 1 and December 31, 2019. The study population comprised 937 patients (51.8% men; median [IQR] age, 42 [18] years). An echocardiogram was available in the clinical chart of 420 patients (44.8%). The diagnosis of any form of heart disease was confirmed in 211 patients (22.5%): 101 (10.8%) had congenital heart defects, 80 (8.5%) simultaneous congenital and valvular heart diseases, and 30 (3.2%) isolated valvular heart disease. 111 patients (52.6% of those with congenital or valvular heart disease) had received corrective cardiac surgery. A total of 65 individuals were receiving medical management alone (30.8%), while 35 did not require any

treatment because their cardiac disease was mild (16.6%). We found a high overall prevalence of heart disease in patients with DS, higher than previously reported for the pediatric population. Management of cardiovascular disease in adults with DS differs from that of the general population and should include universal echocardiography-based screening.

PMID:[36577781](#) | DOI:[10.1038/s41598-022-26918-0](#)

Categorías: [Cirugía valvular](#)

[Transcatheter "edge-to-edge" mitral valve repair: influence of bias in randomized trials](#)

Lun, 12/26/2022 - 11:00

Gac Med Mex. 2022;158(5):323-327. doi: 10.24875/GMM.M22000702.

ABSTRACT

Functional mitral regurgitation (FMR) is the result of three-dimensional structural disruption of the mitral valve due to left ventricular dysfunction. The "edge-to-edge" surgical technique has given rise to the percutaneous transcatheter edge-to-edge repair (TEER) technique to treat FMR; however, the lack of a mitral annuloplasty ring makes TEER only partially effective, with uncertain long-term results. The MITRA-FR and COAPT trials, on which current TEER recommendations are based, show conflicting results. COAPT results possible bias has influenced current recommendations issued by clinical practice guidelines in favor of TEER in FMR.

PMID:[36572051](#) | DOI:[10.24875/GMM.M22000702](#)

Categorías: [Cirugía valvular](#)

[Persistent Hypoxia After Blunt Thoracic Trauma due to Flail Tricuspid Valve Leaflet and Patent Foramen Ovale](#)

Lun, 12/26/2022 - 11:00

Am Surg. 2022 Dec 26:31348221148357. doi: 10.1177/00031348221148357. Online ahead of print.

ABSTRACT

Structural cardiac injury after blunt trauma is uncommon but usually life-threatening. While tricuspid injury is very rare and potentially lethal, the right heart can accommodate larger volumes and higher pressures in acute tricuspid insufficiency and facilitate initial stabilization prior to definitive valvular repair. ECMO may be used to ameliorate resulting right heart failure. The traumatic force required to cause cardiac structural injury is also associated with pulmonary complications related to pneumothorax, hemothorax, effusion, acute pain secondary to rib fractures, and pulmonary contusions causing hypoxia. We present an unusual case of hypoxia in a trauma patient caused by acute tricuspid regurgitation with pre-existing patent foramen ovale.

PMID:[36571144](#) | DOI:[10.1177/00031348221148357](#)

Categorías: [Cirugía valvular](#)

[Latent Avulsion of the Posterior Mitral Leaflet Base from the Mitral Annulus Following a Motor Vehicle Accident: A Case Report](#)

Lun, 12/26/2022 - 11:00

J Tehran Heart Cent. 2022 Apr;17(2):78-81. doi: 10.18502/jthc.v17i2.9845.

ABSTRACT

Injuries to the heart and great vessels should always be considered after blunt chest trauma. Valvular damage rarely occurs after blunt trauma, but symptoms may be delayed. A 58-year-old woman was referred to our hospital with exertional dyspnea (functional class III) and palpitations for elective transesophageal echocardiography. Her symptoms had exacerbated in the preceding 2 or 3 months. Physical examination showed holosystolic murmurs (IV/VI) at the lower sternal border with extension to the apex. Transesophageal echocardiography revealed avulsion of the base of the posterior mitral valve leaflet (P3) from the annulus. In the past medical history, there was a history of a motor vehicle accident 9 months earlier. The patient was recommended for mitral valve surgery. Mitral valve replacement was performed, and the diagnosis was confirmed by surgery. The patient was discharged without any complications.

PMID:[36567937](#) | PMC:[PMC9748236](#) | DOI:[10.18502/jthc.v17i2.9845](#)

Categorías: [Cirugía valvular](#)

[Percutaneous Management of Bioprosthetic Mitral Valve Dehiscence with Combined Valve-in-Valve Replacement and Paravalvular Leak Closure](#)

Vie, 12/23/2022 - 11:00

Methodist DeBakey Cardiovasc J. 2022 Dec 8;18(1):117-120. doi: 10.14797/mdcvj.1140. eCollection 2022.

ABSTRACT

This case report describes a patient with bioprosthetic mitral valve dehiscence that resulted in severe paravalvular regurgitation and cardiogenic shock. Due to prohibitive surgical risk, valve-in-valve transcatheter mitral valve replacement was attempted but did not reduce the severity of the prosthetic paravalvular leak (PVL) severity. Subsequent percutaneous PVL closure with a ventricular septal defect occluder successfully reduced the PVL severity and led to significant clinical improvement.

PMID:[36561851](#) | PMC:[PMC9733145](#) | DOI:[10.14797/mdcvj.1140](#)

Categorías: [Cirugía valvular](#)

[Effects of Cardiac Rehabilitation on Sleep Quality in Heart Disease Patients with and without Heart Failure](#)

Vie, 12/23/2022 - 11:00

Int J Environ Res Public Health. 2022 Dec 12;19(24):16675. doi: 10.3390/ijerph192416675.

ABSTRACT

Insomnia is a modifiable cardiovascular risk factor. Previous studies suggested that attending a cardiac rehabilitation program may improve sleep quality in cardiac patients and pointed out the association between heart failure and poor sleep quality. The primary aim of this study was to evaluate sleep quality in patients attending a Multidisciplinary Cardiac Rehabilitation Program (MRCP), and to compare sleep quality between patients with and without heart failure. A prospective observational study was carried out on a consecutive sample of 240 patients attending an 8-week MRCP; 50 patients (20.8%) were included due to heart failure (NYHA stages I-III) and the rest of them

after having undergone any revascularization procedure or valvular surgery. Before and after the completion of the MRCP, the quality of sleep was assessed by the Pittsburgh Sleep Quality Index (PSQI) score. Post-intervention global PSQI scores were statistically significantly lower than those of pre-intervention ($p = 0.008$), but only 60 patients (25%) registered a clinically significant improvement. When comparing patients with heart failure with those without, no differences in sleep quality were found. This suggests that only a small percentage of patients can achieve clinically significant improvements in sleep quality attending conventional MCRP. Suggestions for future research are given.

PMID:[36554555](#) | PMC:[PMC9779564](#) | DOI:[10.3390/ijerph192416675](#)

Categorías: [Cirugía valvular](#)

[Management Challenges in Patients Younger Than 65 Years With Severe Aortic Valve Disease: A Review](#)

Mié, 12/21/2022 - 11:00

JAMA Cardiol. 2022 Dec 21. doi: 10.1001/jamacardio.2022.4770. Online ahead of print.

ABSTRACT

IMPORTANCE: The management of aortic valve disease, including aortic stenosis and aortic regurgitation (AR), in younger adult patients (age <65 years) is complex, and the optimal strategy is often unclear, contingent on multiple anatomic and holistic factors.

OBSERVATIONS: Traditional surgical approaches carry significant considerations, including compulsory lifelong anticoagulation for patients who receive a mechanical aortic valve replacement (AVR) and the risk of structural valvular deterioration and need for subsequent valve intervention in those who receive a bioprosthetic AVR. These factors are magnified in young adults who are considering pregnancy, for whom issues of anticoagulation and valve longevity are heightened. The Ross procedure has emerged as a promising alternative; however, its adoption is limited to highly specialized centers. Valve repair is an option for selected patients with AR. These treatment options offer varying degrees of durability and are associated with different risks and complications, especially for younger adult patients. Patient-centered care from a multidisciplinary valve team allows for discussion of the optimal timing of intervention and the advantages and disadvantages of the various treatment options.

CONCLUSIONS AND RELEVANCE: The management of severe aortic valve disease in adults younger than 65 years is complex, and there are numerous considerations with each management decision. While mechanical AVR and bioprosthetic AVR have historically been the standards of care, other options are emerging for selected patients but are not yet generalizable beyond specialized surgical centers. A detailed discussion by members of the multidisciplinary heart team and the patient is an integral part of the shared decision-making process.

PMID:[36542365](#) | DOI:[10.1001/jamacardio.2022.4770](#)

Categorías: [Cirugía valvular](#)

[Variability in surveillance practice for patients with diagnosis of bicuspid aortic valve syndrome](#)

Mar, 12/20/2022 - 11:00

Sci Rep. 2022 Dec 20;12(1):22009. doi: 10.1038/s41598-022-25571-x.

ABSTRACT

In patients with bicuspid aortic valves, guidelines call for regular follow-up to monitor disease progression and guide intervention. We aimed to evaluate how closely these recommendations are followed at a tertiary care center. Among 48,504 patients who received echocardiograms (2013-2018) at a tertiary care center, 245 patients were identified to have bicuspid aortic valve. Bivariate analyses compared characteristics between patients who did and did not receive follow-up by a cardiovascular specialist. During a median follow-up of 3.5 ± 2.2 years (mean age 55.2 ± 15.6 years, 30.2% female), 72.7% of patients had at least one visit with a cardiovascular specialist after diagnosis of bicuspid aortic valve. These patients had a higher proportion of surveillance by echocardiogram (78.7% vs. 34.3%, $p < .0001$), CT or MRI (41.0% vs. 3.0%, $p < .0001$), and were more likely to undergo surgery. Patients with moderate-severe valvular or aortic pathology were not more likely to be followed by a specialist or receive follow-up echocardiograms. Follow-up care for patients with bicuspid aortic valve was highly variable, and surveillance imaging was sparse despite guidelines. There is an urgent need for mechanisms to monitor this population with increased risk of progressive valvulopathy and aortopathy.

PMID:[36539583](#) | PMC:[PMC9768129](#) | DOI:[10.1038/s41598-022-25571-x](#)

Categorías: [Cirugía valvular](#)

[Outcomes of concomitant aortic valve procedures and left ventricular assist device implantation: A systematic review and meta-analysis](#)

Mar, 12/20/2022 - 11:00

Artif Organs. 2022 Dec 20. doi: 10.1111/aor.14482. Online ahead of print.

ABSTRACT

BACKGROUND: Left ventricular assist device (LVAD) implantation is frequently employed in patients with end-stage heart failure. The outcomes of addressing the repair of all substantial aortic valvular disease at the time of LVAD implantation remain unclear. We sought to assess the clinical outcomes in patients undergoing LVAD implantation concomitant with aortic valve procedures (AVPs) compared with isolated LVAD implantation.

METHODS: A literature search was performed using PubMed, Embase, and Cochrane library from inception till June 2022. Primary outcomes included short-term mortality and long-term survival. Random effects models were used to compute mean differences and odds ratios with 95% confidence intervals (CIs).

RESULTS: A total of 14 observational studies ($N = 52\,693$) met our inclusion criteria. Concomitant LVAD implantation and AVPs were associated with higher short-term mortality (OR = 1.61 [95% CI, 1.06-2.42]; $p = 0.02$) and mean CPBt (MD = 43.25 [95% CI, 22.95-63.56]; $p < 0.0001$), and reduced long-term survival (OR = 0.70 [95% CI, 0.55-0.88]; $p = 0.003$) compared with isolated LVAD implantation. No difference in the odds of cerebrovascular accident (OR = 1.05 [95% CI, 0.79-1.39]; $p = 0.74$) and mean length of hospital stay (MD = 2.89 [95% CI, -4.04 to 9.82]; $p = 0.41$) was observed between the two groups. On adjusted analysis, short-term mortality was significantly higher in the LVAD group with concurrent AVPs when compared with the isolated LVAD group (aHR = 1.50 [95% CI, 1.20-1.87]; $p = 0.0004$).

CONCLUSIONS: Concurrent AVPs were associated with higher short-term mortality and reduced long-term survival in patients undergoing LVAD implantation compared with isolated LVAD implantation.

PMID:[36537993](#) | DOI:[10.1111/aor.14482](#)

Categorías: [Cirugía valvular](#)

[Del Nido versus cold blood cardioplegia in adult patients with impaired ejection fraction undergoing valvular and complex heart surgery](#)

Lun, 12/19/2022 - 11:00

J Cardiovasc Surg (Torino). 2022 Dec 19. doi: 10.23736/S0021-9509.22.12498-5. Online ahead of print.

ABSTRACT

BACKGROUND: There is sparse evidence on the efficacy of del Nido cardioplegia in high-risk patients with reduced ejection fraction undergoing valvular or complex heart surgery, and further investigation is required.

METHODS: An institutional registry was searched for patients who underwent valvular or complex heart surgery and had an ejection fraction <40%. Subjects who received del Nido cardioplegia (DNC) and cold blood cardioplegia (CBC) were selected. Propensity matching was performed with age, gender, and number of conducted procedures as matching criteria. A comparative analysis was performed on primary endpoints of the troponin rise and changes in ejection fraction (EF). A composite endpoint of a troponin rise of $\geq 20\times$ baseline or fall of $EF \geq 5\%$ was assessed in a multivariate analysis. Other perioperative complications are reported.

RESULTS: One hundred patients from the DNC group were matched to the 100 patients in the CBC group. There were no differences between groups at baseline. Postoperatively, lower troponin values were observed in the DNC group at 12 hours (median; IQR: 523.2;349.1-740.4 pg/mL vs. 787.6;443.6-1689.0 pg/mL; $P=0.016$) and 36 hours (median; IQR: 426.1;337.2-492.1 pg/mL vs. 653.7;398.8-1737.5 pg/mL; $P=0.044$). Fewer patients in the DNC group had a fall in $EF \geq 5\%$ (7% vs. 16%; $P=0.046$). The multivariable analysis did not reveal a significant predictor of composite endpoint.

CONCLUSIONS: In patients with impaired contractility undergoing valvular and complex procedures, the use of del Nido cardioplegia as an alternative to cold blood cardioplegia is associated with lower troponin release and improved preservation of ejection fraction.

PMID:[36534124](#) | DOI:[10.23736/S0021-9509.22.12498-5](#)

Categorías: [Cirugía valvular](#)

[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 valvular](#)

[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 valvular](#)

[Mapping of the myxomatous mitral valve: The three-dimensional extension of mitral annular disjunction in surgically repaired mitral prolapse](#)

Vie, 12/16/2022 - 11:00

Front Cardiovasc Med. 2022 Nov 29;9:1036400. doi: 10.3389/fcvm.2022.1036400. eCollection 2022.

ABSTRACT

OBJECTIVES: This study aimed to describe the heterogeneous extension of mitral annular disjunction (MAD) and assess the hypothesis that different phenotypes of disjunction are not associated with increased surgical challenges.

BACKGROUND: Mitral regurgitation (MR) is the most common end-stage scenario of degenerative mitral valve disease (DMVD). Few data exist on the three-dimensional extension and geometry of MAD, as well as for its role in valvular dynamic and coaptation.

METHODS: A total of 85 consecutive subjects, who underwent elective mitral valve repair (MVR) for MMVD at our Institution between November 2019 and October 2021, were studied retrospectively. The extension and geometry of MAD was assessed using the digitally stored volumetric datasets of real-time 3D transesophageal echocardiography (TEE). Annular phenotypes and surgical repair techniques were analyzed.

RESULTS: Mitral annular disjunction was diagnosed in 50 out of 85 patients (59%) with Barlow disease (BD). A detailed analysis of MAD extension was conducted on 33 patients. Two pattern of disjunction were identified: a bimodal shape was highlighted in 21 patients, while a more uniform distribution of the disjoined annulus was observed in 12 patients. The bimodal pattern was characterized by lower disjunction distance (DD) at the 140°-220° arch (3.6 ± 2.2 mm), while a more regular DD was measured in the remaining patients. All patients successfully underwent MVR. Triangular leaflet resection was performed in 58% of the cases, neochordae implantation in 9%, and notably a 27% received an isolated annuloplasty.

CONCLUSION: Rather than a binary feature, MAD should be taken into account in its complex and heterogeneous morphology, where two major phenotypes can be identified. Despite its anatomical complexity, MAD was not associated with an increased surgical challenge; conversely a peculiar subgroup of patient was successfully treated with an isolated annuloplasty.

PMID:[36523367](#) | PMC:[PMC9745128](#) | DOI:[10.3389/fcvm.2022.1036400](#)

Categorías: [Cirugía valvular](#)

[Serotonin and valvular heart disease](#)

Mié, 12/14/2022 - 11:00

Expert Opin Ther Targets. 2022 Dec 14. doi: 10.1080/14728222.2022.2158082. Online ahead of print.

NO ABSTRACT

PMID:[36514958](#) | DOI:[10.1080/14728222.2022.2158082](#)

Categorías: [Cirugía valvular](#)

[How Did We Get Here? Antithrombotic Therapy after Bioprosthetic Aortic Valve Replacement: A Review](#)

Mar, 12/13/2022 - 11:00

Thromb Haemost. 2022 Dec 13. doi: 10.1055/s-0042-1758128. Online ahead of print.

ABSTRACT

IMPORTANCE: Aortic stenosis is the most common valvular disease, and more than 90% of patients who undergo aortic valve replacement receive a bioprosthetic valve. Yet optimal antithrombotic therapy after bioprosthetic aortic valve replacement remains uncertain, and guidelines provide contradictory recommendations.

OBSERVATIONS: Randomized studies of antithrombotic therapy after bioprosthetic aortic valve replacement are small and underpowered. Observational data present opposing, and likely confounded, results. Historically, changes to guidelines have not been informed by high-quality new data. Current guidelines from different professional bodies provide contradictory recommendations despite citing the same evidence.

CONCLUSIONS AND RELEVANCE: Insufficient antithrombotic therapy after bioprosthetic aortic valve replacement has serious implications: ischemic stroke, systemic arterial thromboembolism, and clinical and subclinical valve thromboses. Unnecessarily intense antithrombotic therapy, however, increases risk of bleeding and associated morbidity and mortality. Professional bodies have used the current low-quality evidence and generated incongruent recommendations. Researchers should prioritize generating high-quality, randomized evidence evaluating the risks and benefits of antiplatelet versus anticoagulant therapy after bioprosthetic aortic valve replacement.

PMID:[36513278](#) | DOI:[10.1055/s-0042-1758128](#)

Categorías: [Cirugía valvular](#)

[Impact of pressure recovery on the assessment of pulmonary homograft function using Doppler ultrasound](#)

Mar, 12/13/2022 - 11:00

Physiol Rep. 2022 Dec;10(23):e15432. doi: 10.14814/phy2.15432.

ABSTRACT

Relevant pressure recovery (PR) has been shown to increase functional stenotic aortic valve orifice area and reduce left ventricular load. However, little is known about the relevance of PR in the pulmonary artery. The study examined the impact of PR using 2D-echocardiography in the pulmonary artery distal to the degenerated homograft in patients after Ross surgery. Ninety-two patients with pulmonary homograft were investigated by Doppler echocardiography (mean time interval after surgery 31 ± 26 months). PR was measured as a function of pulmonary artery diameter determined by computed tomography angiography. Homograft orifice area, valve resistance, and transvalvular stroke work were calculated with and without considering PR. PR decreased as the pulmonary artery diameter increased ($r = -0.69$, $p < 0.001$). Mean PR was $41.5 \pm 7.1\%$ of the Doppler-derived pressure gradient (P_{\max}), which resulted in a markedly increased homograft orifice area (energy loss coefficient index [ELCOI] vs. effective orifice area index [EOAI], $1.3 \pm 0.4 \text{ cm}^2/\text{m}^2$ vs. $0.9 \pm 0.4 \text{ cm}^2/\text{m}^2$, $p < 0.001$). PR significantly reduced homograft resistance and transvalvular stroke work (822 ± 433 vs. $349 \pm 220 \text{ mmHg} \times \text{ml}$, $p < 0.0001$). When PR was considered, the correlations of the parameters used were significantly better, and 11 of 18 patients (61%) in the group with severe homograft stenosis ($\text{EOAI} < 0.6 \text{ cm}^2/\text{m}^2$) could be reclassified as moderate stenosis. Our results showed that the Doppler measurements overestimated the degree of homograft stenosis and thus the right ventricular load, when PR was neglected in the pulmonary artery. Therefore, Doppler measurements that ignore PR can misclassify homograft stenosis and may lead to premature surgery.

PMID:[36511522](#) | PMC:[PMC9746035](#) | DOI:[10.14814/phy2.15432](#)

Categorías: [Cirugía valvular](#)

[Long-term low-dose cabergoline usage: Another association with cardiac valvulopathy](#)

Mar, 12/13/2022 - 11:00

Echocardiography. 2022 Dec 13. doi: 10.1111/echo.15506. Online ahead of print.

ABSTRACT

A 60-year-old patient, professor of physics, presented in 1999 with sudden-onset vitiligo associated with hyperprolactinemia and a prolactinoma. Fearful of potential surgical complications at the peak of his career, the patient declined surgery and opted for medical management with bromocriptine. The decreasing effectiveness of bromocriptine after 5 years required a switch to cabergoline. After a 15-year-course of cabergoline therapy with a cumulative dose of 572 mg, echocardiographic monitoring demonstrated aortic and mitral valve thickening and regurgitation. An additional 3 years of cabergoline treatment (cumulative dose: 649 mg) resulted in worsening valve thickening and regurgitation. It is well-recognized that such valvular changes may occur with high-dose cabergoline treatment. We report a case of mitral and aortic valvulopathy in a patient who was treated with long-term (18 years) low-dosage (.5-1 mg weekly) cabergoline. cabergoline, echocardiography, valvulopathy.

PMID:[36511080](#) | DOI:[10.1111/echo.15506](#)

Categorías: [Cirugía valvular](#)

[Cardiogenic shock following acute MI in a young patient with familial hypercholesterolemia, and severe aortic stenosis: A case report](#)

Lun, 12/12/2022 - 11:00

Heliyon. 2022 Nov 30;8(12):e11909. doi: 10.1016/j.heliyon.2022.e11909. eCollection 2022 Dec.

ABSTRACT

BACKGROUND: Familial hypercholesterolemia is a relatively rare disorder with various clinical manifestations including premature coronary artery disease.

CASE PRESENTATION: A 15-year-old boy presented with acute exacerbation of dyspnea and exertional chest pain with a progressive feature since one month earlier. He had a clustered family history of premature cardiovascular death, hyperlipidemia, and cutaneous lesions in two of his siblings. He presented with acute severe heart failure accompanied with high levels of cardiac troponin and LDL cholesterol. Echocardiography revealed severe LV dysfunction, in concert with valvular and supra-valvular Aortic stenosis. He underwent Coronary angiography, which showed involvement of Left main coronary artery and two-vessel disease. The patient was diagnosed with cardiogenic shock secondary to acute non-ST segment elevation myocardial infarction, and phenotype of familial hypercholesterolemia.

CONCLUSIONS: Premature malignant atherogenesis in both aortic root and coronary arteries with early presentation of acute myocardial infarction and severe heart failure is an uncommon constellation in early course of the FH, which leads to confined treatment options.

PMID:[36506387](#) | PMC:[PMC9732302](#) | DOI:[10.1016/j.heliyon.2022.e11909](#)

Categorías: [Cirugía valvular](#)

[Mitochondrial DNA as a Candidate Marker of Multiple Organ Failure after Cardiac Surgery](#)

Dom, 12/11/2022 - 11:00

Int J Mol Sci. 2022 Nov 25;23(23):14748. doi: 10.3390/ijms232314748.

ABSTRACT

Assess the level of mitochondrial DNA depending on the presence of multiple organ failure in patients after heart surgery. The study included 60 patients who underwent surgical treatment of valvular heart disease using cardiopulmonary bypass. Uncomplicated patients were included in the 1st group ($n = 30$), patients with complications and multiple organ failure (MOF) were included in the 2nd group ($n = 30$). Serum mtDNA levels were determined by quantitative real-time polymerase chain reaction with fluorescent dyes. Mitochondrial DNA gene expression did not differ between group before surgery. Immediately after the intervention, cytochrome B gene expression was higher in the group with MOF, and it remained high during entire follow-up period. A similar trend was observed in cytochrome oxidase gene expression. Increased NADH levels of gene expressions during the first postoperative day were noted in both groups, the expression showed tendency to increase on the third postoperative day. mtDNA gene expression in the "MOF present" group remained at a higher level compared with the group without complications. A positive correlation was revealed between the severity of MOF according to SOFA score and the level of mtDNA ($r = 0.45$; $p = 0.028$) for the end-point "First day". The ROC analysis showed that mtDNA circulating in plasma ($AUC = 0.605$) can be a predictor of MOF development. The level of mtDNA significantly increases in case of MOF, irrespective of its cause. (2) The expression of mtDNA genes correlates with the level of MOF severity on the SOFA score.

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