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CARDIOVASCULAR RESEARCH PROVE JOURNAL

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CARDIOVASCULAR RESEARCH PROVE Journal

"CVREP" Journal

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"*CVREP" Journal* is the official Journal of **CardioAlex Research, Education & Prevention foundation**. It is a peer-reviewed journal, engaged in publishing high quality material on all aspects of Cardiovascular Medicine. It includes updates on cardiology, information to junior doctors, review articles, abstracts, articles related to research findings and technical evaluations. It also provides a forum for the exchange of information in all fields of cardiology.

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Content

Section (1): Abstracts

Abstracts	Page
Assessment of Left Atrium Appendage Morphology By 3D Transesophageal Echocardiography and Its Relation to Spontaneous Echo Contrast& Thrombus Formation *Hend Khalil, Sherif Sakr, Hoda Sobh*	1.
Assessment of Left Ventricular Diastolic Function and Left Atrial Deformation in Normotensive Type 2 Diabetes Without Microvascular Complications *Wafaa S.El-Sherbeny, Suzan B. Elhefnawy*	2.
Assessment of Right Ventricular Systolic Function in Heart Failure with Preserved, Reduced and Mid-Range Ejection Fraction *Shaimaa Mostafa*	3
Clinical Characteristics and Short-Term Outcomes of Multi-Vessel CAD Patients Presented with AMI – Tertiary Center Experience *Shereen Khaled*	4.
Comparison Between Non-Invasive and Invasive Assessment of Aortic Valve Stenosis Severity in Patients with Classical and Paradoxical LFLG-AS. *Mohamed Arab*	5.
Correlation Between T Wave Inversion and Incidence of VT in Patients with ARVC (Single Center Experience). *W.Ali , WI.Hassan , M S. Sayed , O K. Kamel*	6.
Effect Myocardial Scar Characteristics Assessed by Cardiac Magnetic Resonance on Cardiac Resynchronization Therapy Response *Mohamed Aboel-Kassem F Abdelmegid, Marwa T El Saadi, Nady A. razik, Doaa A Fouad*	7.
Impact of Hypertension Duration on Coronary Coronary Calcium Score in Patients with Low to Intermediate Pretest Probability For Ischemia. *Mohammad Eltahlawi, Mohammad Elfaramawy, Nader Talat, Mahmoud Shah*	8.
Left Ventricular Systolic Function in Patients with Rheumatic Mitral Stenosis: Speckle Tracking Study A Nightmare Becomes True Mass in Inferior STEMI *Eslam elmenyawy, Zaghlool M., Dawood E.*	9.
Major Adverse Cardiac Events After First Time Isolated Coronary Artery Bypass Grafting In Ain-Shams University Hospital 2015-2017 *Menna Ali, Ramy M.R Khorshid, Osama Abaas, Ahmed Hassouna.*	11.
Masked Hypertension and Its Impact on Heart, Kidneys and Peripheral Vascular System *Salwa M. Ghoneim,a El-Sayed M. Farag, Marwa M. Gad,C Amr M. El-daqqaq*	12.

Prevalence and Predictors of Ischemia and Outcomes in Non-Diabetic Patients Referred for Single Photon Emission CT Myocardial Perfusion Imaging 13.
Ahmed Abdelaty, Aly AboElhoda, Mohamed Nawar

Prognostic Value of Ventricular Arrhythmias on Ambulatory Electrocardiograph Monitoring in Chronic Heart Failure with Reduced Ejection Fraction 14.
Fatma Mohamed Elsayed Abdalla, Mohamed Ibrahim Sanhoury, Mohamed Ahmed Sadaka, Mohamed Aymen Abdel Moniem

Role of gated spect combined with speckle tracking echocardiography and pro- BNP level in early detection of HCV cirrhotic cardiomyopathy 15.

The Role of In-Vivo Optical Spectroscopy in Assessment of Cerebral Perfusion in Superior Cavo-Pulmonary Shunt (Glenn) 16.
Tarek Salah, Ashraf Mostafa, Samy Amin, Ihab ElSharkawey, Hesham Shawky

The Role of Three-Dimensional Transesophageal Echocardiography in the Assessment of Mitral Prosthetic Paravalvular Leak 17.
Mohamed Ayman AbdelHay, Salah ElTahan, Eman ElSharkawy, Ingy Etman

Value of Global and Regional Strain Imaging in Prediction of LV Function Recovery After Elective Stenting of Proximal LAD Lesion 18.
Rana Elhelf

Value of Multi-Slice CT Coronary Angiography in Assessment of Remodeling Index in Low to Intermediate Risk Chronic Stable Angina Patients 19.
Shaimaa A. Mostafa, Tarek aboelazem, Osama Sanad, Haytham Abdelghafar, Ahmed Azam

Section (2): Resumes

Resumes	Page
Radiation-Associated Cardiac Disease (RACD) *Magdy Elmasry*	21.
Thyroid Dysfunction and Hypertension *Hanaa Elzawawy*	22.

Section (3): Case Presentation

Case Presentation	
Acute stent thrombosis in the setting of DK crush bifurcation stenting *Khaled Darahim*	24.
Intramyocardial Hematoma Post MI *Mohamed Abdelhamid*	26.

Section (4): Case Reports

Case Reports	Page
From A Cardiogenic Shock to A Cardiac Transplant *Guirgis Gabra*	28.
Pulmonary Capillary Hemangiomatosis (PCH) *Ehab Selim*	30.

Section (5): Review Article

Review Article	Page
Management of Calcific Coronary *Mahmoud Elrayes*	32.
Position of Antiarrhythmic Drugs in The New Guidelines *Samir Rafla*	33.

SECTION (1): ABSTRACTS PRESENTED @ CARDIOALEX.20

Assessment of Left Atrium Appendage Morphology By 3d Transesophageal Echocardiography and Its Relation to Spontaneous Echo Contrast & Thrombus Formation

Hend Khalil, Sherif Sakr, Hoda Sobh

OBJECTIVE:
The main objective of this study was to assess different LAA shapes by 3D TEE and to find the relation between the morphology of the LAA and the incidence of SEC and thrombus formation.

METHODS AND RESULTS:
sixty patients underwent 2D & 3D TEE for different indications all in Mansoura specialized medical hospital from February 2017 to February 2018(mean age was 49±14.46 years, 19 female & 41 males), regarding different shapes of LAA we found 21 windsock (35.1%), 17 cactus (28.3%), 11 chicken wing (18.3%) and 11 cauliflower 11(18.33%). Thrombus found in 3 cases (5.0%), SEC in 15 cases (25.0%). There is significant association between morphology of LAA and presence of SEC; which noticed only in non – chicken wing shapes (7 in cauliflower, 5 in windsock, 3 in cactus and 0 in chicken wing). There is significant association between morphology of LAA and thrombus formation; the 3 thrombus were found in cactus (100%) and regarding number of LAA lobes that bi lobed were the most common in 41.66% of cases, then single lobed in 33.33% of cases and the least common were multi lobed.
There is significant relationship between shape of LAA and orifice area (p-value =0.009); cauliflower associated with the largest orifice area 2.5±0.91 & chicken wing with the smallest orifice area 1.27±0.57.The cauliflower had the largest number of lobes 3-5 (median4.00), the smallest number of lobes associated with windsock 1-2 (median 1.00), while chicken wing had 2 lobes &cactus had 2-3 lobes (median 2.00). There is no significant relationship between shape of LAA shape with depth.

There is statistical highly significant positive correlation between orifice area &diameters with numbers of lobes (p-value = 0.004, p-value = 0.002) and also statistical significant positive correlation between left atrium diameter and LAA orifice area (p-value = 0.001), orifice diameter (p-value = 0.038) and depth (p-value = 0.023). Statistical significant negative correlation between left atrium diameter and LAA flow velocity (p-value = 0.029). There is no statistical significant correlation between left atrium diameter of numbers of lobes.

CONCLUSION:
3D TEE provides detailed assessment of LAA shapes and its special anatomical characteristic. In our study, non-chicken wing left atrial appendage shape was associated with higher prevalence of SEC and thrombus formation.

Assessment of Left Ventricular Diastolic Function and Left Atrial Deformation in Normotensive Type 2 Diabetes Without Microvascular Complications

Wafaa S.El-Sherbeny, Suzan B. Elhefnawy

OBJECTIVE:

The goal of the investigation is to estimate left ventricular (LV) diastolic function in normotensive type II diabetes mellitus patient without microvascular complications and by using 2D-speckle tracking echocardiography (STE) for early discovery of LA dysfunction in those individuals.

METHODS AND RESULTS:

A total of 40 cases suffering from type 2 DM (group I) and 40 normal healthy individuals with sex and age matched were involved as the control group (group II).2D-echocardiography, Doppler and tissue Doppler imaging were measured to evaluate LV diastolic function, measurement of peak atrial longitudinal strain (PALS) using 2D-STE. The present work confirmed that E/A ratio was significantly lowered in case group compared with control group, there were a significantly decrease in the case group than the healthy control individuals in both the average early diastolic velocity (Em) of the septal mitral valve annulus (Septal E`) and lateral mitral valve annulus (lateral E`). The ratio (E/E`) by TDI was elevated significantly (P =0.001) in diabetic patients versus control group (15.92± 3.01 m/sec in the case group and 8.95 ± 0.99 m/sec in the healthy group). global PALS was dropped significantly (p= 0.001) in diabetic patients in comparison with control group, diabetic peoples with duration of 11 to 15 years had more incidence of diastolic dysfunction (DD) with increasing the grade of DD. Patients with HbA1c ≥7.5% had more prevalence of DD with increasing the grade of DD than patients with HbA1c < 7.5% (p =0.014).

CONCLUSION:

Diastolic function was impaired in diabetic patients despite absence of CAD and other features of CAD. The grade of DD increase with increased level of HbA1c and duration of diabetes, impaired left atrial function in normotensive diabetic patients with preserved LV systolic function may be prone to develop microvascular complication.

Assessment of Right Ventricular Systolic Function in Heart Failure with Preserved, Reduced and Mid-Range Ejection Fraction

Shaimaa Mostafa

OBJECTIVE:
assessment of the prevalence, severity and correlation of right ventricular systolic dysfunction and left ventricular systolic function in heart failure with preserved, reduced and mid-range ejection fraction.

METHODS:
Single-center, cross-sectional study included 150 patients, 50 patients with each category of HF; group I preserved, group II mid-range and group III reduced ejection fraction, left ventricular systolic function was assessed by 3D echo and right ventricular systolic function was assessed by FAC, TAPSE, TDI (S velocity) and 2D strain (GLS).

RESULTS:
There was no statistically significant difference between 3 groups regarding gender, symptoms, prevalence of risk factors (diabetes, hypertension, smoking, and obesity), chronic renal disease but patients of group III were significantly older (p-value <0.001) and had a higher prevalence of CAD (p-value was 0.004). Prevalence of RV systolic dysfunction in group I was 18%, 22%, 14% and 26% by TAPSE, FAC, S velocity and GLS respectively, the prevalence was higher in group II;36%,72%,40%,40% by TAPSE, FAC, S velocity and GLS respectively and was much higher in group III 50%,76%,64%,68% by TAPSE, FAC, S velocity and GLS respectively. There wasn't significant correlation between parameters of RV systolic function and LV systolic function in group I but, there was significant positive correlation between TAPSE, S velocity, GLS and EF in group II and III (p <0.001)

CONCLUSION:
the prevalence and severity of RV systolic dysfunction was positively correlated with LV systolic function and the degree of RV dysfunction in HFmrEF is more close to HFrEF than HFpEF.

Clinical Characteristics and Short-Term Outcomes of Multi-Vessel CAD Patients Presented with AMI – Tertiary Center Experience

Shereen Khaled

OBJECTIVE:
Our aim is to analyze MVD-AMI patients regarding demographics, clinical characteristics, management and short- term outcomes in a tertiary care center located in specific region with advantage of variable clinical backgrounds of its admitted patients.

METHODS AND RESULTS:
This is a retrospective, single center study reviewing the clinical details and hospital outcome measures of AMI referred to our center for early revascularization from 2016 to 2019.Out of 3041 of patients presented with AMI, 491(16%) had MVD on coronary angiogram. MVD-AMI patients were significantly older, had higher prevalence of pilgrims, DM, HTN and history of ischemic heart disease compared to non- MVD – AMI group (P <0.001 for all). However, they presented more with non- anterior myocardial infarction and lower peak of troponin; they showed higher rates of post myocardial infarction LV dysfunction, complications and mortality (p<0.001). Older MVD-AMI showed higher rates of the in- hospital morbidities and mortality compared to young (P<0.001). MVD- AMI women and Middle Eastern patients were older at age; they showed higher rates of cardiovascular risk factors compared to men and South Asian population respectively. There no were no significant difference was recorded between those different subgroups of MVD-AMI patients regarding hospital outcome measures.

CONCLUSION:
Our study highlighted the clinical characters and poor outcome of high-risk group of AMI-MVD with different demographic background. Age was determined as a strong predictor for more complications and poor outcome however, neither gender nor ethnicity affect the outcome among them.

Comparison Between Non-Invasive and Invasive Assessment of Aortic Valve Stenosis Severity in Patients with Classical and Paradoxical Lflg-As.

Mohamed Arab

OBJECTIVE:

The present study compares the echocardiographic criteria for the grading of aortic valve stenosis with the invasive criteria in patients with classical LFLG-AS and in patients with paradoxical LFLG-AS.

METHODS AND RESULTS:

Current guidelines/recommendations define severe stenosis as an aortic valve area (AVA) < 1 cm2 (or ,0.6 cm2 adjusted for body surface area), mean pressure gradient > 40 mmHg, or peak flow velocity (Vmax) > 4 m/s.

We compared the echocardiographic parameters and invasive cardiac catheterization parameters for the grading of aortic valve stenosis in 49 patients with normal left ventricular (LV) systolic function (EF > 50 %) which is called group P (paradoxical LFLG-AS) and in 43 patients with impaired left ventricular systolic function (EF < 50 %) which is called group C (classical LFLG- AS).

We found that nonsignificant difference among both groups regarding to Demographic data and risk factors. No significant difference of AVA were found in all patients by echo or invasive catheterization, while MPG by invasive cardiac catheterization was significantly higher than that by echocardiography.

In group C (classical LFLG-AS) there was no significant difference between AVA by echocardiography or invasive catheterization, but there was a significant difference between MPG by echocardiography and invasive catheterization.

In group P we found that MPG by catheterization was significantly higher than that by echocardiography , and AVA was significantly higher by echocardiography than that by catheterization .In all patients there was no significant correlation between COP driven by invasive cardiac catheterization and EF driven by echocardiography . MPG by catheterization was significantly higher in group P, other catheterization data (no difference). No significant difference among both groups regarding Echocardiographic parameters and estimated glomular filtration rate (e GFR), The presence of AF was significantly higher in group c

CONCLUSION:

In patients with paradoxical LFLG-AS (group P), we found that MPG by invasive cardiac catheterization was significantly higher than that by echocardiography and AVA by invasive catheterization was significantly lower than that by echocardiography.

In patients with classical LFLG-AS (group C), we found that MPG by invasive catheterization was significantly higher than that by echocardiography. In all patients we found that no significant difference between AVA by echocardiography or invasive catheterization. Also there was no significant correlation between COP driven by invasive catheterization and EF driven by echocardiography in all patients . AF was significantly higher in patients with classical LFLG-AS.

Correlation Between T Wave Inversion and Incidence of VT in Patients with ARVC (Single Center Experience)

Wessam Ali, Walaa Hassan, Mohamed Sayed, Omnia Kamel

OBJECTIVE:

To establish a correlation between T wave inversion and the incidence of VT in patients with ARVC.

METHODS AND RESULTS:

We retrospectively evaluated the 12 lead surface ECG at time of presentation for 13 patients presented to our inherited arrhythmia clinic diagnosed as ARVC according to the task force modified criteria, we studied the distribution of T wave inversion and evaluated the incidence of ventricular arrhythmias either by Holter monitoring or by interrogation of the ICDs which were received as a secondary prevention.

Out of those patients, 9 experienced recurrent attacks of sustained ventricular arrhythmias as showed in Figure 1

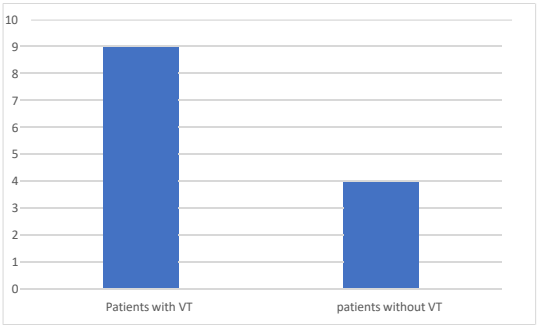


Figure 1

In patients who didn`t experience any ventricular arrhythmias only one patient showed T wave inversion in all chest leads, however the three remaining patients showed no T wave inversion in their resting surface ECG with overall sensitivity of 69 % and specificity of 80 %.

Around 56 % of patients who experienced attacks of ventricular tachycardia showed T wave inversion in all chest leads while 11 % of patients showed T wave inversion in V1. 22 % of patients showed T wave inversion from V1 to V4. 11 % of patients showed no T wave inversion.

Distribution of T wave inversion in patients who had VA is illustrated in figure 2

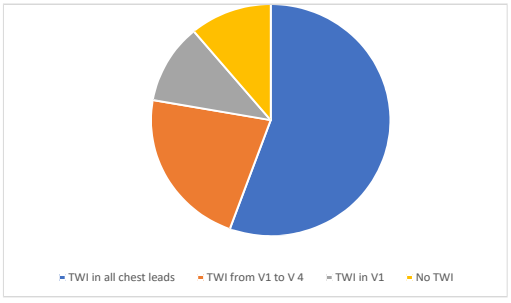


Figure 2

CONCLUSION:

Despite the small number of patients included in our study, we found that the presence of T wave inversion can be correlated with the burden of ventricular arrhythmias in such patients. And we also found that the spread of T wave inversion (especially in chest leads) is positively correlated with the incidence of ventricular arrhythmias.

Effect Myocardial Scar Characteristics Assessed by Cardiac Magnetic Resonance on Cardiac Resynchronization Therapy Response

Mohamed Aboel-Kassem F Abdelmegid, Marwa T El Saadi, Nady A. razik, Doaa A Fouad.

OBJECTIVE:
To evaluate the effect of myocardial scar characteristics such as scar size, localization, and transmurality using cardiac magnetic resonance (CMR) imaging on cardiac resynchronization therapy (CRT) response.

METHODS AND RESULTS:
This prospective observational study included 22 patients (males 63.6%, mean age 58.6 ± 10.5 years) who were eligible for CRT implantation. They underwent complete CMR study and echocardiography before CRT implantation. Short term clinical and echocardiographic followed up at 3 months after implantation for CRT response. CRT response was defined as a ≥ 15% reduction in left ventricular end-systolic volume (LVESV).

CRT response was achieved in 12 (54.5%) patients. There was no significant difference between CRT responders and non-responders regarding baseline clinical, electrocardiographic and echocardiographic characteristics. CRT responders showed significant improvement in NYHA class, mitral regurgitation severity, left ventricular ejection fraction and reduction in left ventricular end-diastolic volume and LVESV then CRT non-responders. Myocardial scar size was significantly larger in CRT non-responders than CRT responders (15.41 ± 9.02 versus 10.77 ± 3.78 mm2, P = 0.01). In addition, responders found to have a significantly lower percentage of fibrosis at segments related to the left ventricular lead position. Transmural myocardial scar was significantly lower in CRT responders than CRT non-responders (P = 0.03).

CONCLUSIONS:
CRT gives a better response in patients who have non-transmural small-sized myocardial scar and implantation of left ventricular lead in a segment with a low percentage of fibrosis. Therefore, CMR derived scar size, localization and transmurality assessment prior to CRT implantation may allow better identification of patients who would respond to CRT.

Impact of Hypertension Duration on Coronary Coronary Calcium Score in Patients With Low To Intermediate Pretest Probability for Coronary Artery Disease

Mohammad Eltahlawi, Mohammad Elfaramawy, Nader Talat, Mahmoud Shah

BACKGROUND:
Hypertension duration has been tested as a predictor for coronary atherosclerosis in patients without known coronary artery disease (CAD) by non-invasive modality which is coronary computed tomography angiography (CCTA)

OBJECTIVE:
We investigated the association between hypertension duration and the extent and severity of CAD and calcium scoring using CCTA in patients presenting by chest pain with low to intermediate pretest probability (PTP).

METHODS AND RESULTS:
We analysed 90 patients with low to intermediate PTP who underwent CCTA due to chronic stable angina. All patients were controlled for their blood pressure on medical treatment. Neither of them were diabetic nor dyslipidemic. Patients were investigated for the duration of their hypertension. Coronary calcium score (CACS) was calculated for all patients. Correlation was done between the duration of hypertension and coronary calcium score.
There was a highly significant positive correlation between the duration of hypertension and the degree of CACS (P=0.002).

CONCLUSION:
In patients with chronic stable angina with low to intermediate PTP, longer hypertension duration is associated with a higher coronary calcium score. Hypertension duration is an important determinant of atherosclerosis regardless of the control of blood pressure.

Left Ventricular Systolic Function in Patients with Rheumatic Mitral Stenosis: Speckle Tracking Study

Eslam elmenyawy, Zaghlool M., Dawood E.

INTRODUCTION:

Mitral stenosis (MS) is a common valvular disease in developing countries because it is a major consequence of rheumatic endocarditis. In approximately one fourth of patients with pure mitral stenosis there is a decrease in left ventricle systolic performance.

OBJECTIVE:

To uncover presence of subclinical LV systolic function in patients with rheumatic mitral stenosis.

METHODS:

Case-control study included 60 persons divided into two groups (30 normal healthy volunteers of control group and another 30 patients of diseased group with pure mitral stenosis) then taking history and examination followed by echo Doppler study using VIVID E9 XD clear for assessment of the LV systolic function by speckle tracking (longitudinal strain).

RESULT:

There is significant difference in left atrial diameter and interventricular septum systolic diameter in two group (increase in diseased group).

Items	Diseased group	Control Group	p-value
	Mean ± SD	Mean ± SD	
LAD	4.53±0.54	3.54±0.33	<0.001**
IVSS	1.22±0.19	1.36±0.16	0.003**
LVEDD	4.61±0.58	4.64±0.44	0.802
LVESD	2.97±0.42	2.88±0.29	0.356
LVEF	64.67±4.44	66.77±3.85	0.055

LAD: left atrial diameter, IVSS: interventricular septum systolic diameter, LVEDD: left ventricular end diastolic diameter, LVESD: left ventricular end systolic diameter,
LVEF: left ventricular ejection fraction.

Also, comparative analysis between some difference in longitudinal strain for each segment between Control and diseased group:

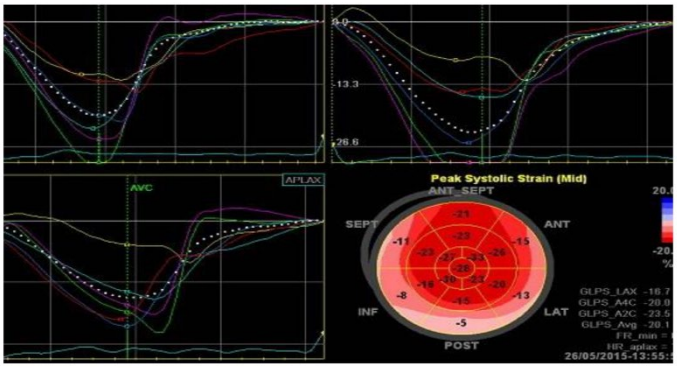
- In diseased group there is decrease in longitudinal strain of basal segments with normal longitudinal strain of apical segments.
- In asymptomatic patients apical segment shows tendency to be super normal.

Items	Diseased group	Control group	P-value
	Mean ± SD	Mean ± SD	
Basal Anterior PLSS	-14.87±5.44	-18.67±2.88	0.001**
Basal Inferolateral PLSS	-15.53±4.6	-19.53±2.93	<0.001**
Basal Inferoseptal PLSS	-12.87±3.6	-18.13±4.01	<0.001**
Basal Anterolateral PLSS	-14.47±6.92	-17.93±2.92	<0.001**
Basal Anteroseptal PLSS	-13.6±4.29	-17.97±2.86	<0.001**

PLSS: peak longitudinal systolic strain.

CONCLUSION:

In pure mitral stenosis there are affection of basal segments while apical segments shows normal or supernormal as compensatory mechanism to keep normal systolic function. So, we aim to set a standard parameter for longitudinal strain as method for follow up and detection of subclinical LV dysfunction in patients with pure mitral stenosis.



Major Adverse Cardiac Events After First Time Isolated Coronary Artery Bypass Grafting In Ain-Shams University Hospital 2015-2017

Menna Ali, Ramy M.R Khorshid, Osama Abaas, Ahmed Hassouna.

BACKGROUND:

Major adverse cardiovascular events (MACE) are useful to evaluate cardiovascular outcomes after coronary artery bypass grafting (CABG). The aim of this study is to evaluate the outcome of isolated CABG Operations done at Ain- Shams University Hospital from January 2015 until February 2017 by reporting post-operative incidence of (MACE) with the records of the online Research Electronic Data Capture (REDCap) software.

METHODS:

This is a retrospective descriptive observational study demonstrating the CABG at Ain- Shams university hospital during the period Jan 2015-feb 2017. Data source is RED CAP. Incidence, risk factors and significant predictors for MACE were calculated including, in-hospital mortality, occurrence of MI, STROKE, ICU Readmission, and Need for coronary Angiography or PTCA OR CABG within 30 days postoperative. Secondary outcomes including duration of post-operative inotropic support, mechanical ventilation and ICU stay Amount of blood loss and need of reoperation, wound infection.

RESULTS:

Out of the 570 cases who met our inclusion criteria, 156 patients (27.3%) developed MACE, Including 31 hospital mortalities (5.4%), and other non-fatal events recorded in 136 patients (23.8%). Risk factors associated with hospital mortality, namely BMI, LV end-diastolic dimension, Bypass time, Post- operative positive inotropic support, Post-operative ICU stay, Ventilation duration, Gender, Hypertension, Intra-aortic balloon pump, Post-operative stroke, Reoperation, Reintubation, MI, showed to be the significant predictors of mortality after logistic regression has been done.

Risk factors associated with the development of all MACE included BMI, LV end-diastolic dimension, LV end-systolic dimension, Bypass time, Dyspnea, Symptomatic status at admission, Cardiogenic shock, Operation urgency, Cardioplegia temperature showed to be significant predictors of overall MACE after logistic regression has been done.

CONCLUSIONS:

Our results suggested that more care should be given to females, elderly and to shorten and improve the quality of our operative time. The repetition of non-fatal MACE could be modified by closer observation of the patient, once developing his first event.

KEY WORDS:

MACE, CABG, Ain shams hospital The Abstract

Masked Hypertension and Its Impact on Heart, Kidneys and Peripheral Vascular System

Salwa M. Ghoneim, El-Sayed M. Farag, Marwa M. Gad, Amr M. El-daqqaq

BACKGROUND:
Worldwide, Cardiovascular diseases (CVD) are the leading cause of death accounting for 30% of all death causes.(1) Hypertension (HTN) is considered as the main risk factor for cardiovascular and renal diseases, thus constituting one of the main determinants of mortality and morbidity worldwide.(2)

OBJECTIVE:
estimate the prevalence of masked hypertension among the Egyptian population and to compare the dipping statuses of masked hypertensives and normotensives. Also, to investigate the relation of masked hypertension to target organ damage in the heart, kidneys and peripheral vascular system as well as different cardiovascular risk factors as smoking, age, sex and dyslipidemia.

PATIENT AND METHODS:
This study included 200 patients, randomly chosen, presented to cardiology clinic for checkup. All patients will be subjected to Full medical and surgical history taking, Clinical examination, office blood pressure measurement after 5 minutes rest 3 times, the first measurement will be cancelled to exclude WCH, the mean of the 2nd and the 3rd value are enrolled. Then ABPM was done 24 hours basis according to the inclusion and exclusion criteria mentioned. As a next step, patients were classified into 2 groups according to clinical BP and ABPM readings (Normotensive group and MH group).

RESULTS:
31.5% have MH, mean age, weigh and BMI are higher in MH group, Males are more affected than females, MH is more common among smokers, MH group shares a higher mean LVMI and ABI and a lower GFR than NT group.

CONCLUSION:
MH is highly prevalent and it can be diagnosed effectively with ABPM. MH, like true hypertension, is associated with different cardiovascular risk factors as age, sex, smoking, dyslipidemia and obesity (high weight and increased BMI). MH is associated with non-dipping status, which has been associated to cardiovascular morbidity and mortality. Study results provide direct evidence of increased TOD like LVH (by ECG and echo), PVD (by ABI) and Renal failure (eGFR).

Prevalence and Predictors of Ischemia and Outcomes in Nondiabetic Patients Referred for Single Photon Emission Computed Tomography Myocardial Perfusion Imaging

Ahmed Abdelaty, Aly AboElhoda, Mohamed Nawar

OBJECTIVE:
We sought to estimate the prevalence and predictors of significant scintigraphic evidence of ischemia and subsequent cardiac events over 12 months of follow up in a cohort of consecutive 250 stable non diabetic outpatients referred for single photon emission computed tomography myocardial perfusion imaging (SPECT MPI) over a period of 6 months in Alexandria Main University Hospital Nuclear Cardiology Laboratory.

METHODS AND RESULTS:
The study population ages ranged between 14 and 80 years with mean±SD 58.22±9.321 years, it included 194 males (77.6%). There were 55 asymptomatic patients (22%) and 48 patients (19.2%) with no previous history of IHD. 109 (43%) had normal resting ECG. The study was normal in 38 patients (15.2%).

On comparing perfusion defects detected by SPECT-MPI with anatomical lesions detected by invasive CA in same related vessels, there were all statistically significant in LAD, LCX and RCA lesions with p<0.001, p<0.001, p=0.002 respectively.

In our study, SSS was (13.41±11.885), SRS was (8.32±10.607). SSS was statistically related to age (P=0.036) and male gender (P=0.015), while SRS was statistically related to smoking and positive family history with P=0.001, p<0.001 respectively.

There was strong positive correlation between SSS and sudden cardiac death (p<0.001) and with MI (p=0.001) and with HF (p<0.001).

Also, there were statistically significant relation between atypical pain and sudden cardiac death (p<0.001).

Over the period of follow up, 41 patients (16.4%) had PCI, 18 patients (7.2%) had CABAG.
40 patients (16%) had sudden cardiac death, 63 patients (25.2%) had MI, 92 patients (36.8%) developed heart failure.

We found that lung uptake is the most predictive variable for MI (p=0.008) and also for stroke (p=0.001). HTN, SSS and typical pain have predictive values for sudden cardiac death with P=0.016, 0.033, and 0.039 respectively, while transient LV dilation is the most predictive variable for HF (p<0.001).

CONCLUSIONS:
SPECT MPI is a good tool for risk stratification. Semiquantitative parameters such as SSS, SRS are independent good predictors of cardiac death/nonfatal MI and HF. This stable outpatient SPECT MPI referral cohort had high rates of significant ischemia and low rates of early revascularization; with initial high cardiac events rates within a year.

Prognostic Value of Asymptomatic Ventricular Arrhythmia on Ambulatory ECG Monitoring in Chronic Heart Failure with Reduced Ejection Fraction

Fatma Mohamed Elsayed Abdalla, Mohamed Ibrahim Sanhoury, Mohamed Ahmed Sadaka, Mohamed Aymen Abdel Moniem

BACKGROUND:
Pump failure and sudden cardiac death are the leading causes of death in heart failure patients. Heart failure increases the risk of sudden death by 6–9 times and most cases are the result of ventricular arrhythmias (VA).

OBJECTIVE:
To determine the prevalence of silent ventricular arrhythmia (frequent PVCs, infrequent PVCs or Non sustained ventricular tachycardia (NSVT)) in ambulatory heart failure with reduced ejection fraction (HFrEF) population and its relation to outcome (death, HF hospitalization and sustained ventricular tachycardia).

METHODS:
The study is a prospective observational study enrolling 100 ambulatory heart failure patients with reduced ejection fraction. Full clinical assessment including 12 lead ECG, ECHO and 48 hour Holter monitoring followed by 6 months clinical reassessment were obtained. Occurrence of major cardiovascular events were considered as the composite study end point (death, HF hospitalization and sustained ventricular VT)

RESULTS:
Among the 100 patients enrolled, 93% were males, mean age 56.07 ± 7.89 years. 82% of them were ischemic cardiomyopathy and the remaining 18% were dilated cardiomyopathy with normal coronaries. Ventricular arrhythmia were detected in 76 patient about 49 patient developed frequent PVCs (PVCs burden >5% or NSVT) and around 27 patient developed infrequent PVCs. The total mortality was 11 patient 7 of them frequent PVCs was noted, also 47 patient hospitalized by worsening of HF symptoms 26 of them frequent PVCs was noted. And 10 patients developed heamodynamically significant VT 8 of them frequent PVCs was noted. So, the composite end point was achieved in 68 case around 41 case of them a frequent PVCs (PVC burden>5% or NSVT) was detected in 48 hour Holter monitoring.

CONCLUSION:
According to the results from our study we can conclude that PVCs in HFrEF patients are common finding and the burden of PVCs considered a bad prognostic sign in HFrEF patients.

Role of Gated Spect Combined with Speckle Tracking Echocardiography and Pro- BNP Level in Early Detection of HCV Cirrhotic Cardiomyopathy

Marwa Hemat Gaber

BACKGROUND:
Hepatitis C is found worldwide. The most affected regions are WHO Eastern Mediterranean and European Regions. Egypt holds a unique position in the epidemiology of hepatitis and liver diseases. Egypt is also home for the highest prevalence of hepatitis C virus (HCV) in the world, with an overall rate of approximately 22% up to 40% in some areas.

Extrahepatic manifestations vary from common to infrequent. The cardiac manifestations in HCV patients are multi-factorial and still incompletely defined. A cardiac dysfunction in patients with cirrhosis characterized by impaired contractile responsiveness to stress and/or altered diastolic relaxation with electrophysiological abnormalities in the absence of other known cardiac diseases and called cirrhotic cardiomyopathy (CCM). The prevalence is reported to be between 40 to 50% in cirrhotic patients independent of liver disease etiology. CCM occur in two stages: a subclinical one and another clinically manifest. Because CCM is asymptomatic, except during situations of stress, prevalence studies are limited. The use of biomarkers has been useful in clinical practice, especially troponin I, BNP, and N-terminal-pro-BNP (NT-pro-BNP), which may be found in abnormal levels in cirrhosis. BNP and pro-BNP elevation is associated to the severity of cirrhosis and cardiac dysfunction, but not to hyperdynamic circulation. Non-invasive stress testing, echocardiography provides valuable information regarding the development of clinically important systolic and diastolic dysfunction. Trans-thoracic echocardiography is non-invasive, available at the bedside, and low-cost relative to other imaging modalities. Recent advances in echocardiographic applications have resulted in the development of the concept of myocardial deformation imaging and measurement of strain and strain rate. Two- dimensional (2D) speckle-tracking echocardiography (STE) is a non-Doppler modality for the offline evaluation of myocardial mechanics by strain and SR. Nuclear imaging is very well-validated test for proper diagnosis of disease pathophysiology, prognosis and guidance towards optimal therapy.

OBJECTIVE:
The aim of this study was to evaluate the ability of gated SPECT, Speckle Tracking Echocardiography and Pro-BNP level in early detection of subclinical HCV related cirrhotic cardiomyopathy.

PATIENTS AND METHODS:
Forty Child A HCV related patient were included. Pro BNP was measured, conventional 2D echocardiographic assessment in addition to GLS of left and right ventricles and exercise Tc99 gated SPECT. In comparison to 20 matched healthy subjects.

RESULTS:
patients showed decrease in GLS of the left ventricle in comparison to control group. Also, chronotropic incompetence was detected in patients group. Right ventricular assessment by conventional and speckle tracking echocardiography in addition to gated SPECT revealing normal values.

Also, pro BNP level was within normal reference ranges. Conclusions:
GLS showed the highest sensitivity and specificity in detection of early changed in cirrhotic cardiomyopathy. Stress gated SPECT studies showed a good ability in detection of subclinical cirrhotic cardiomyopathy. Pro-BNP did not show an ability in detection of subclinical cirrhotic cardiomyopathy.

The Role of In-Vivo Optical Spectroscopy in Assessment of Cerebral Perfusion in Superior Cavo-Pulmonary Shunt (Glenn)

Tarek Salah, Ashraf Mostafa, Samy Amin, Ihab ElSharkawey, and Hesham Shawky

BACKGROUND:
Bidirectional Glenn shunt is a well-established procedure performed as a part of the single ventricle palliation pathway. It may also provide definitive palliation in certain other patients. However, stroke and neurocognitive dysfunction are common after surgery with rates of approximately 3e6% and 30e50%, respectively. This study aimed to report and compare early post-operative neurological outcome after on-pump and off pump using temporary cavo atrial shunt in bidirectional Glenn shunt operation using a neurological monitor.

METHODS:
This prospective comparative non randomized controlled trial included 30 patients undergone Glenn shunt. The study was done at Kasr Alainy Hospitals (Abul Reesh Specialized Paediatric Japanese Hospital) Cairo University, Egypt in the period between October 2017 and October 2019. Patients were divided into two matching and equally numbered groups: Group A contained 15 patients using cardiopulmonary bypass (CPB); while group B contained 15 patients without using CPB. Cerebral oximetry was done using INVOS.

RESULTS:
As regards operative time it was shorter in group B (p ¼ 0.003), post- operative fits in group A 2 patients (13%), in group B 3 patients (20%), the difference was statistically insignificant (p > 0.05). There was a significant correlation between the area under the curve (AUC) and neurological outcome (p ¼ 0.01).

CONCLUSIONS:
We suggest that pediatric INVOS system may help to reduce the high rate of brain injuries.

The Role of Three-Dimensional Transesophageal Echocardiography in the Assessment of Mitral Prosthetic Paravalvular Leak

Mohamed Ayman AbdelHay, Salah ElTahan, Eman ElSharkaw, Ingy Etman

BACKGROUND:
Mitral prosthetic paravalvular leak (PVL) is an uncommon yet serious complication Three-dimensional echocardiography (3DE) is considered superior to 2D echocardiography by which dehiscence sites can be identified with special attention to their location, shape, size and area.

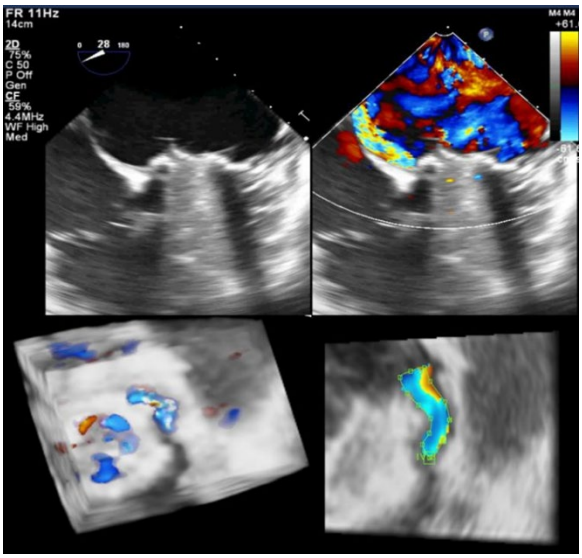
OBJECTIVE:
The aim of the study is to describe the detailed morphology and characteristics of severe mitral paravalvular leaks using three- dimensional transoesophageal echocardiography (3D TEE).

METHODS:
Fifteen patients with severe mitral paravalvular leaks (mean age of 50 ± 12 years, 73% were men) were assessed using conventional 2D TTE and 2D TEE with color Doppler. 3D TEE using 3D zoom and full volume multibeat acquisition modes were used to image mitral prosthetic valve and the paravalvular defect. Paravalvular leaks were described in terms of their shape, size, number and localization.

RESULTS:
Heart failure was the most common presentation (45%) while hemolytic anemia was the second common presentation (22%).

Mean left atrial diameter was 64 ± 6 mm. Mean LV end diastolic volume (EDV) was 171 ± 34 ml and mean LV end systolic volume (ESV) was 98 ± 28 ml. Regarding mitral prosthetic parameters; : Peak early mitral velocity (E-wave) with mean velocity of 2.5 ± 0.35 m/s , mean diastolic gradient was 11.5 ± 2 mmHg and mean ratio of mitral valve velocity time integral (MV VTI) / left ventricular outflow tract velocity time integral (LVOT VTI) was 3 ± 0.58.

The mean 2D vena contracta width of the regurgitant jet was 7.0 ± 1.1 mm. Using 3D zoom mode and full volume multibeat acquisition modes, Single regurgitant jet was found in 73% of the cases while 27% had 2 regurgitant jets . The most common sites of PVL were septal (36%) and posterior (26%). The defect shape was oval (31%), rounded (26%), crescent (31%), highly irregular (5%) and full dehiscence (5%). The mean PVL diameters measured by 3D TEE was 4.8 ± 3 mm × 3.1 ± 1.4 mm and the mean 3D effective regurgitant orifice area (3D EROA) was 0.69 ± 0.24 cm2.



CONCLUSION:
3D TEE can provide accurate description of the number, location, size and morphology of PVLs, which is essential for selecting patients with severe mitral paravalvular leaks who are candidates for device closure and for guiding the procedure.

Value of Global and Regional Strain Imaging in Prediction of Left Ventricular Function Recovery After Elective Stenting of Proximal Lad Lesion

Rana Elhelf

OBJECTIVE:

To assess global and regional left ventricular strain, in patients with significant proximal left anterior descending coronary artery stenosis, before and one month after PCI, and relating that to one year patient mortality and morbidity. Aiming at evaluation of the safety and efficacy of PCI as a revascularization strategy for proximal LAD stenosis.

METHODS AND RESULTS:

A total of 53 patients admitted to Mansoura University Specialized Internal Medicine Hospital between December 2017 and November 2018 for elective proximal LAD stenting. 2D echocardiography, and speckle tracking were done to study cases before and one month after PCI, assessing EF, GLS and mean LAD territorial strain LV function recovery was defined as ≥ 10% improvement from the original value. Clinical follow-up was done one year after PCI. Number and percentage of recovered cases were calculated and their relations to patient morbidity and mortality were assessed. We found that the pre-stenting GLS was affected significantly even with normal EF (-13.5 as median), the LAD strain was lower (- 11.9). The global longitudinal strain (GLS) was found to improve significantly one month after PCI ($p< 0.01$). The mean LAD territorial strain showed a more significant improvement one month after PCI than GLS with p value <0.001. 66% of studied cases were considered recovered according to GLS, while the remarkable recovery result was that of the mean LAD territorial strain, reaching about 77.4%. However, GLS recovery was found to be a predictor for occurrence of MACE one year follow up (p value: 0.019) in contrast to mean LAD territorial strain recovery that showed no significant correlation to occurrence of MACE.

CONCLUSION:

PCI to proximal LAD is a safe, efficient revascularization strategy with high procedural success rate, global and regional recovery of LV function and freedom from MACE. Echocardiographic strain imaging by digital speckle tracking analysis has provided a more precise objective quantification of myocardial function and sensitive detection of subclinical impact of both ischemia and revascularization on global and regional myocardial function.

Value of Multi-Slice CT Coronary Angiography in Assessment of Remodeling Index in Low to Intermediate Risk Chronic Stable Angina Patients

Shaimaa A. Mostafa, Tarek aboelazem, Osama Sanad, Haytham Abdelghafar, Ahmed Azam

OBJECTIVE:
Evaluation of coronary artery remodeling index in patients with low to intermediate risk chronic stable angina by MSCT coronary angiography.

PATIENTS AND METHODS:
single center, cross-sectional, observational study included 150 patients with low to intermediate risk chronic stable angina with normal resting ECG, sinus rhythm, normal systolic function by 2D echocardiography (EF>50%) and without regional wall motion abnormality at rest were referred to MSCT evaluation of the coronary artery tree

RESULTS:
The mean age was 56.8 ±6.4y, 83.3% had one vessel disease and 16.7% had two vessel diseases. The mean remodeling index (RI) was 1.04 ±0.28 and there was statistically significant positive correlation between RI and cholesterol, triglyceride, LDL, duration of DM, HBA1c and plaque burden (P<0.001) and statistically significant negative correlation with HDL (P<0.001). By linear regression analysis; diabetes mellitus, serum cholesterol and plaque burden% were predictors of higher RI (P<0.001). Patients with remodeling index >1 were diabetic, hypertensive, smoker, with longer duration of diabetes mellitus, higher HBA1c, cholesterol, triglyceride, LDL, plaque burden and lower HDL (p<0.001).

CONCLUSION:
MSCT coronary angiography was able to detect early changes in the wall of coronary artery and emphases on the proper control of modifiable risk factors as was associated with positive remodeling.

SECTION 2:
RESUMES, ARTICLES AND TOPICS PRESENTED @ CARDIOALEX.20

Radiation-Associated Cardiac Disease (RACD)

Magdy Elmasry

Radiation-associated cardiac disease (RACD) — which typically arises years or decades after a cancer patient undergoes radiation therapy to the chest — should be systematically screened for and monitored, with management delivered by an experienced multidisciplinary team of cardiovascular specialists.

Who is at risk?

• Age younger than 50 at time of radiation therapy

• Existing cardiovascular risk factors or disease

• Lack of shielding or cobalt as the radiation source

• High cumulative dose (>30 Gy) or high dose of radiation fractions (>2 Gy/day)

• Tumor in or next to the heart

• Anterior or left chest radiation

• Concomitant chemotherapy, particularly with anthracyclines or trastuzumab

Manifestations of RACD

Myocardial dysfunction, which is likely related to diffuse fibrosis and which may manifest as impaired functional capacity without heart failure or as heart failure with preserved ejection fraction

Valvular disease presenting as progressive valve thickening and calcification that results in valve stenosis and/or regurgitation, with left-sided valves more often affected

Pericardial disease, including pericarditis and sometimes chronic pericardial inflammation with resulting constriction that can be difficult to distinguish from restriction caused by underlying myocardial fibrosis

• Vasculopathy typically marked by long, tubular, concentric and frequently noncalcific lesions; resulting porcelain aorta may preclude percutaneous intervention or surgery

• Conduction system dysfunction related to fibrosis, with many patients requiring a pacemaker

Screening of cancer survivors

• Annual history and physical examination with a focus on signs and symptoms of RACD

> If signs and symptoms are present, testing as needed to evaluate

• Screening echocardiography to assess structural abnormalities, ventricular performance and valvular disease

> First time: Five years after exposure in high-risk patients, 10 years after exposure in others

> Reassess every five years

• Functional noninvasive stress testing to screen for coronary artery disease (CAD)

> First time: Five to 10 years after exposure in high-risk patients

> Reassess every five years

Specialized imaging plays a role to better evaluate RACD and for preoperative assessment and planning. It should be assumed that patients suffered radiation injury to the aorta, ventricles, pericardium, lungs and chest wall.

Thyroid Dysfunction and Hypertension

Hanaa Tarek El-Zawawy

Thyroid hormones and cardiovascular physiology

Thyroid hormones have a significant impact on the cardiovascular system. Thyroid hormone receptors are present in the myocardium and vascular tissue. Minor alterations in Thyroid hormone concentration can affect cardiovascular physiology.

The cellular actions of thyroid hormones are mediated by the binding of triiodothyronine (T3) to nuclear receptors. T3 is transported into the cardiac myocyte and regulates myocyte contractility. T3 is a direct vasodilator. Thyroid hormone relaxes vascular smooth muscle cells, thereby reducing peripheral vascular resistance.

Hypothyroidism

The major cardiovascular changes that occur in hypothyroidism include a decrease in cardiac output and cardiac contractility, a reduction in heart rate, and an increase in peripheral vascular resistance. There are also significant changes in modifiable atherosclerotic risk factors, including hypercholesterolemia. Hypothyroidism causes a decrease in the release of endothelial-derived relaxing factor (EDRF), which in turn promotes contraction of these cells, thereby increasing peripheral vascular resistance. This in turn results in diastolic hypertension.

Evidence from literature supports the association of hypertension (HTN) with subclinical hypothyroidism (SCH). Some observational studies have shown that patients with SCH have higher blood pressure (BP) than euthyroid controls (2.8-fold increased risk of HTN). Other observational studies have suggested an obviously positive relationship between TSH level and HTN risk among euthyroid individuals. Even within normal BP limits, patients with SCH had a significantly higher diastolic BP than controls. Moreover, the prevalence of diastolic non-dipping was significantly higher in patients with SCH.

Hyperthyroidism

Sympathetic nervous system activation alters cardiovascular hemodynamics in a predictable way in patients with hyperthyroidism. This includes increase in heart rate, cardiac contractility, cardiac output, and myocardial oxygen consumption. Also, reduction in systemic vascular resistance and diastolic pressure. This eventually results in isolated systolic hypertension and wide pulse pressure.

The effect of subclinical hyperthyroidism on blood pressure changes has been less frequently studied. Yet, several previous studies found associations of subclinical hyperthyroidism with cardiovascular disorders such as endothelial dysfunction, left ventricular hypertrophy, thickened artery walls or atrial fibrillation. These cardiovascular disorders associated with subclinical hyperthyroidism may be a direct effect of thyroid hormone disturbance. Alternatively, they may reflect an increased arterial pressure level in subjects with subclinical hyperthyroidism. One of these studies demonstrated that subjects with subclinical hyperthyroidism had a 2.8-fold (95% confidence interval (CI) 1.3–6.0) increased risk of hypertension compared with euthyroid subjects.

Summary

Thyroid dysfunction is a common health problem affecting a relatively large section of the population worldwide. Thyroid dysfunction poses multiple risks with many adverse clinical consequences on all body systems including the cardiovascular system. Both hypothyroidism and hyperthyroidism cause HTN, even subclinical thyroid dysfunction can cause BP elevation. HTN secondary to thyroid dysfunction is reversible with the achievement of euthyroidism. Routine assessment of thyroid function in all patients with pre-existing HTN who are resistant to antihypertensive therapy is mandatory. Also, patients with subclinical thyroid dysfunction should be regularly screened for HTN.

Section (3): CASE PRESENTATIONS

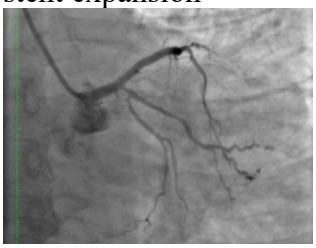
Radial Approach in The Setting of Left Main Stenting

Khaled Darahim

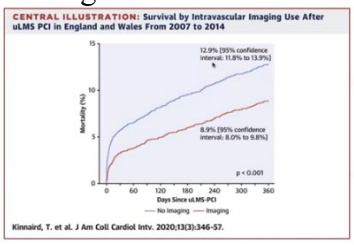
Presentation:
A 66-year-old male, hypertensive, dyslipidemic, Admitted with acute coronary syndrome.
Retrosternal chest pain at rest for 3hours, stable hemodynamics
ECG: Deep T wave inversion in chest leads (V2-4)
Echo: LVEF 45%, RWMA in LAD territory.
Troponin:0.04 ng/ml, Creatinine:1.1 mg/dl
Coronary angiography revealed distal left main 50% with subtotal ostial LAD and proximal LAD 70% lesion with intermediate Syntax score.,
Patient refused CABG.

Challenges:
Radial approach with 6 F guiding (sheathless guide is not available)
Left main in ACS setting with thrombotic tendency

Strategy:
A provisional stenting strategy according to DEFINITION trial recommendations.
In the setting of radial approach, use strategy compatible with a 6 French (Stepped mini-crush, DK crush, TAP…) esp. if Slender sheath, or sheathless guiding catheters are not available.
Final POT is mandatory for optimization of stent expansion



IVUS guided LM intervention is mandatory



Intramyocardial Hematoma Post Myocardial Infarction (MI) Complimentary Role of Cardiac Imaging

Mohamed Abdelhamid Mohamed, Mohammad Salih Almalki, Ibrahim Mohammed Alquzi, Fatma Aboul-Enein

A 64 year old male patient was referred to our tertiary center as a case of late presentation of anterior ST segment elevation (STEMI) >48 hr. with no more chest pain. He is known to have hypertension (HTN), diabetes mellitus (DM) and old cereberovascular accident (CVA) (ischemic) 1year ago with no residual deficit. The patient was haemodynamically stable and clinically was not in failure. Electrocardiography revealed sinus tachycardia, Q waves and residual ST segment elevation in V1-V4. (Figure 1)

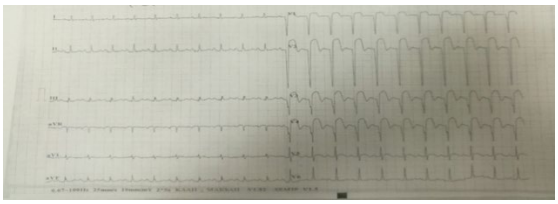


Figure 1

Diagnostic procedures included cardiac catheterization through Right Radial Artery Approach, which showed left main coronary artery (LMCA): Normal, left anterior descending (LAD): Proximal 40%, Mid 80% long segment, Distal small caliber diffuse disease, left circumflex (LCX): Proximal ectasia, distal small caliber, obtuse marginal (OM): Proximal 60% and right coronary artery (RCA): Proximal 40%, Distal mild diffuse disease. (Figure 2)

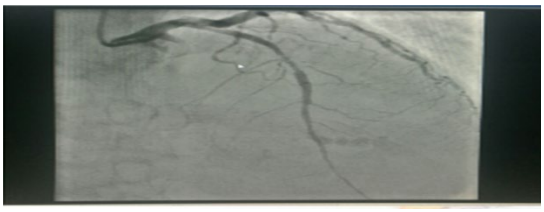
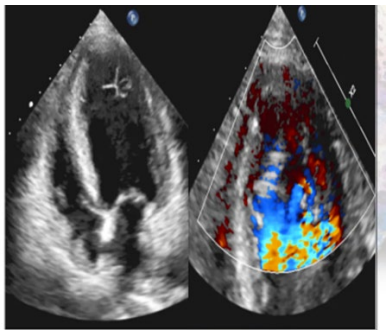
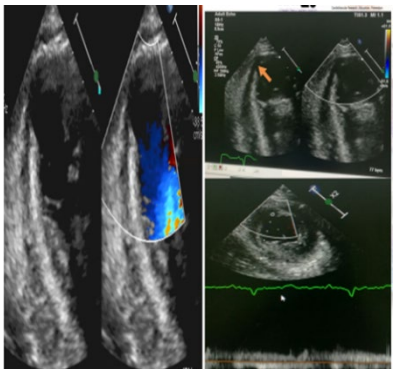


Figure 2

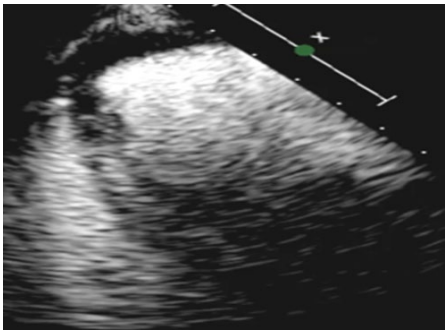
Echocardiography was performed, showed a severely depressed LV ejection fraction (LVEF) of 20 %, as well as extensive apical, mid anteroseptal, and mid anterior wall akinesia. Spontaneous contrast is noted. There is LV apical outpouching with No evidence of ventricular septal rupture (VSR). The right ventricle is grossly normal size. The right ventricular systolic function is moderately reduced. No significant valval lesion. There is no pericardial effusion.
Contrast Echo was done and showed LV apical outpouching with No evidence of VSR and The interventricular septum (IVS) showed intra myocardial contrast uptake suggesting Intramyocardial hematoma (Figures 3A, 3B AND 3C).



Figures 3A



Figures 3B



Figures 3C

Cardiac magnetic resonance imaging showed Ischemic cardiomyopathy, NO apical LV thrombus, a small impending pseudoaneurysm in apical inferio segment is noted and Intramyocardial hematoma is noted in the septal wall. LAD territory: non-viable, LCX territory: viable and RCA: territory: viable.

Long TI (600) showed hypo intense in the septal wall (Figure 4) and LGE TI (300) showed near transmural late enhancement in septal wall (non-viable) (Figure 5).

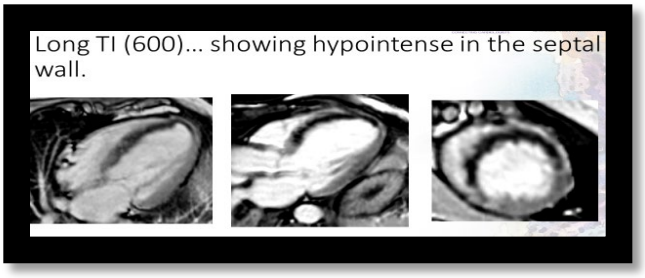


Figure 4

Figure 5

The case was managed conservatively after discussion with our cardiac surgeons team with regular follow up with Echocardiography

Upon Echocardiography follow up, we noticed that the septum became thinner and brighter with progressive diltation of left ventricular (LV) cavity size and decrease EF and that is going with LV adverse remodeling (Figure 6)

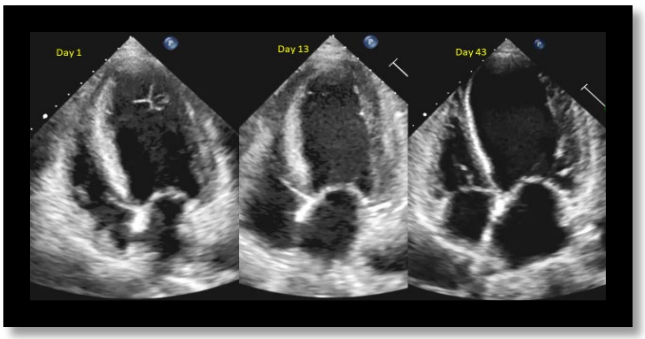


Figure 6

Section (4):
CASE REPORTS

From A Cardiogenic Shock to A Cardiac Transplant

Guirgis Gabra

Our patient 16 years old male who was diagnosed type 1 DM and dilated biventricular cardiomyopathy in 2018 whose general condition rapidly deteriorated over 2 weeks prior to his admission with cardiogenic shock in a tertiary care center and transferred to our quaternary care center. Our advanced heart failure and cardiac transplant team was at bedside on his arrival.

Shortly after admission on Nov. 1, 2019, he started to have recurrent VF with associated cardiac arrest required CPR and multiple DC shocks. VA-ECMO support was initiated percutaneously on Nov. 1, 2019 to support his organ perfusion and hemodynamics due to recurrent episodes VF cardiac arrest.

The work up for VAD/transplant was initiated. He deemed not a candidate for LVAD giving his bad RV. He was successfully extubated on November 5th 2019 and a successful trial to ambulate while being on ECMO was done next day but unfortunately, he again developed recurrent VT/VF while on ECMO and Amiodarone was restarted.

A matching heart transplant donor was found and orthotopic heart transplantation was performed on November 6th 2019 (6th day of presentation) that was uncomplicated with total ischemic time of 90 minutes. He had a smooth postoperative course and was discharged home 18 days later because of time taken to adjust Tacrolimus dose.

We report one of the fastest cardiac transplant cases in the Middle East and North Africa (MENA) region in the setting of a newly established heart transplant program.

Take Home Messages

- Primary cardiomyopathies can have an indolent or progressive course
- A multi-disciplinary “shock team” approach can lead to timely diagnostic and therapeutic interventions to improve hemodynamics and minimize end-organ damage
- Orthotropic heart transplantation (OHT) is a definitive therapy for advanced cardiomyopathies, but requires the timely identification of a suitable donor.
- Our experience at CCAD includes 2 cases of OHT for recipients that were INTERMACS 1 profile, including this case. Both patients have done well.
- We describe the case of successful heart transplantation within 6 days of presentation with cardiogenic shock.

Pulmonary Capillary Hemangiomatosis (PCH) (A Rare Cause of Pulmonary Hypertension)

Ehab Selim, Abdallah Almaghraby, Ahmad Gohar, Awad Youssef

History and presenting complaints

A 26-year-old nonsmoking male presented with progressive exertional shortness of breath for the past 2 months that significantly worsened over the last 2 weeks requiring 2 to 4 L of oxygen, depending on his level of exertion.

No history of fever, cough, sputum, or hemoptysis.

Physical examination:

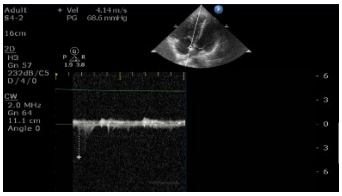
Mild central cyanosis with mottled skin lesions, tachycardia, accentuated P2, mild ascites, and edema of the lower extremities, Otherwise unremarkable.

ECG: RAD, RVH + ST- T changes.

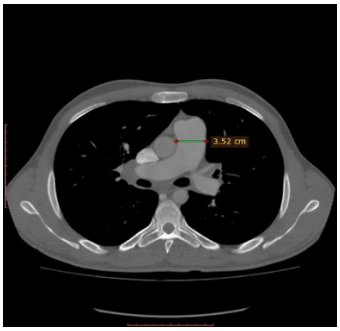
CXR: showed a slightly enlarged cardiac silhouette with dilatation of the main and central pulmonary arteries and abrupt peripheral tapering. There were also mild, nonspecific interstitial markings. Pulmonary hypertension was suspected.

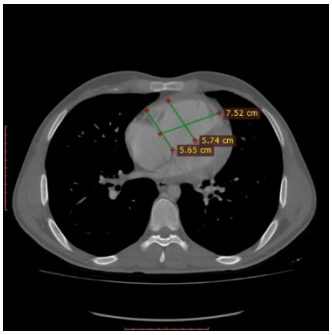
So, Pulmonary function test in the form of spirometry reflected mild fixed obstruction, borderline restriction.

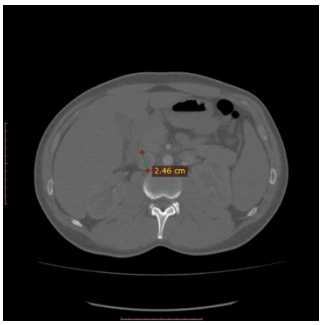
TTE:



MSCT Chest:







Discussion:

First recognized and described by Wagenvoort et al in 1978, PCH is a vascular proliferation occurring with a frequency of 4 cases per million individuals. It affects young adults aged 20 to 40 years (mean age, 29 years), although cases have been previously reported in adolescents, children, premature infants, and even in newborns.

Pulmonary capillary hemangiomatosis occurs in a sporadic fashion, although familial patterns have been described. It manifests as pulmonary hypertension with an indolent onset of symptoms and signs slowly progressing to cor pulmonale with normal pulmonary wedge pressures.

A clinical presentation of postcapillary pulmonary hypertension manifesting as dyspnea, cough, and hemoptysis with fatigue and weight loss is often described. Fever, respiratory tract infection, digital clubbing, thrombocytopenia (especially in the pediatric age group), and hemorrhagic complications, including secondary hemothorax, may occur.

Conclusion:

The differentiation of rare causes of pulmonary hypertension (such as PCH and PVOD) from isolated pulmonary arterial hypertension is of clinical relevance because of the problem of severe, life-threatening, vasodilator-induced pulmonary edema. Differentiation is difficult on clinical grounds alone.

Imaging studies suggest that high-resolution CT findings of centrilobular nodules, GGA, and septal thickening should raise suspicion for PCH or PVOD and provoke further investigations and, possibly, open lung biopsy.

The cause of PCH remains unknown.

The natural history of the disease is not well defined.

It is a very rare disease, and generally poor prognosis.

Most recently, evidence of increased expression of vascular endothilial growth factor and platelet-derived growth factor activity in patient with PCH has been reported.

Lung transplantation is the only curative therapeutic option available.

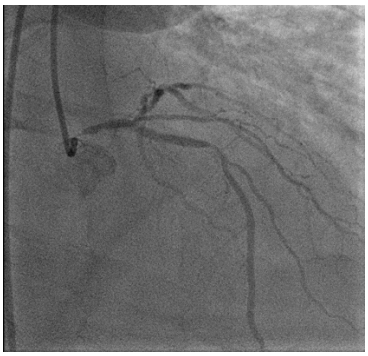
Section (5): Review article

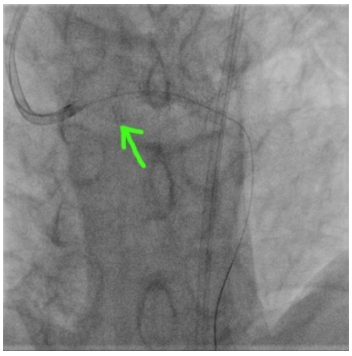
Management of calcific coronary

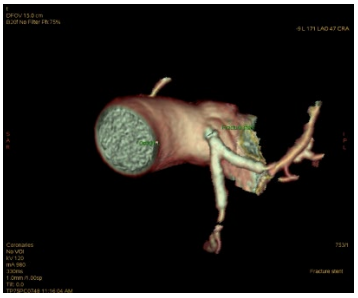
Mahmoud Elrayes

Case presentation

A 67-year-old man presented to the emergency department with acute coronary syndrome. He had prior anterior ST segment elevation myocardial infarction and subsequent stenting to proximal left anterior descending artery in flush with left circumflex ostium 3 months prior to his presentation. Coronary angiography showed critical ostial left main artery disease, patent left anterior descending artery stent and significant ostial left circumflex lesion. The patient refused coronary artery bypass grafting. Our strategy was to stent left main / left circumflex coronary artery crushing LAD stent. Fortunately, both ostial left circumflex and left anterior descending artery were fixed but unfortunately there was type II stent fracture at ostial left main artery. Based on good patient hemodynamics, coronary flow and unusual site of stent fracture, we decided to manage him conservatively instead of stenting which is the default solution for stent fracture. We followed the patient with multi-slice computed tomography scan thereafter.







Conclusion

Overhang of an aorto-ostial stent with postdilatation may predispose to stent fracture. This type of stent fracture poses a great challenge in its management. Multi-slice computed tomography is the best method for diagnosis and follow up of such an aorto-ostial stent fracture.

Key words: left main coronary artery ostium, percutaneous coronary intervention, stent fracture, case report.

Position of Antiarrhythmic Drugs in The New Guidelines

Samir Rafla

Recommendations for ventricular rate control in patients with AF. Page 40

Recommendation	Class
Beta-blockers, diltiazem, or verapamil are recommended as first-choice drugs to control heart rate in AF patients with LVEF>_40%.	I
Beta-blockers and/or digoxin are recommended to control heart rate in AF patients with LVEF<40%.	I
Combination therapy comprising different rate controlling drugs should be considered if a single drug does not achieve the target heart rate.	IIa
A resting heart rate of <110 bpm (i.e. lenient rate control) should be considered as the initial heart rate target for rate control therapy	IIa
Atrioventricular node ablation should be considered to control heart rate in patients unresponsive or intolerant to intensive rate and rhythm control therapy, and not eligible for rhythm control by LA ablation, accepting that these patients will become pace- maker dependent	IIa
In patients with haemodynamic instability or severely depressed LVEF, intravenous amiodarone may be considered for acute control of heart rate	IIb

Recommendations for the management of AF during pregnancy. Page 71

Long-term management (oral administration of drugs)	Class
Therapeutic anticoagulation with heparin or VKA according to the stage of pregnancy is recommended for patients with AF.	I
Beta-selective blockers are recommended for rate control in AF.	I
Flecainide, propafenone, or sotalol should be considered to prevent AF if atrioventricular nodal-blocking drugs fail.	IIa
Digoxin or verapamil should be considered for rate control if beta-blockers fail	IIa

Recommendations for the therapy of supraventricular tachycardia in pregnancy Page 44

Chronic therapy	
During the first trimester of pregnancy, it is recommended that all antiarrhythmic drugs should be avoided, if possible.	I
Beta-1 selective (except atenolol) beta-blockers or verapamil, in order of preference, should be considered for prevention of SVT in patients without WPW syndrome.	IIa
Flecainide or propafenone should be considered for prevention of SVT in patients with WPW syndrome, and without ischaemic or structural heart disease.	IIa
Flecainide or propafenone in patients without structural heart disease should be considered if AV nodal blocking agents fail to prevent SVT.	IIa
Digoxin or verapamil should be considered for rate control of AT if beta-blockers fail in patients without WPW syndrome.	IIa
Amiodarone is not recommended in pregnant women.	III