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## **CONGRESS ABSTRACTS BOOK**

8th International "Baku Heart Days" Congress, dedicated to the memory of National Leader Heydar Aliyev, held from May 19th to 21st, 2023





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Available online at <u>www.bakuheartdays.az</u>

## 8th International "Baku Heart Days" Congress, dedicated to the memory of National Leader

## Heydar Aliyev, held from May 19th to 21st, 2023

## **CONGRESS ABSTRACTS BOOK**

DOI: 10.5455/azjcvs.2023.05.19

## **General information**

#### Organizer

Azerbaijan Society for Cardiovascular Surgery

#### **Congress Date and Venue**

Scientific program will be held between May 19th and May 21st 2023 at Gulustan Palace, Baku, Azerbaijan.

#### Working Language of Congress

The official language are Azerbaijani and English. Simultaneous translation will be provided in sessions.

#### **Confirmation of Attendance**

All registered participants will be awarded with a certificate and CME score.

#### **Name Badges**

The name badges will be given to all participants. We kindly ask all participants to wear their name badges during the meeting.

#### **Exhibition Area**

During the congress, a large area devoted to drugs, medical supplies and book companies, exhibit their product.

#### Permissions

Official congress invitations will be sent to the participants through their own request for permissions for their institutions and visa applications. The purpose of this invitation letters can just be used for permissions or visa application.

#### **Registration and Abstracts Submission**

Online Registration and Abstracts Submission starts – from December 15, 2022
Last day of registration – March 30, 2023

Participants who have not previously registered will be able to complete their registration formalities at "On-Site Registration Desks".

#### Those who have difficulty registering for the Congress can contact the Organizing Committee:

#### Secretariat address:

Address: 76 Parlament avenue, Baku, Azerbaijan

Mob: (+99450) 245 99 06 (WhatsApp)

Mob: (+99450) 309 19 00

E-mail: info@bakuheartdays.az

#### **Official website:**

www.bakuheartdays.az



#### Invitation

Azerbaijan Society for Cardiovascular Surgery is hosting the 8th International Congress "Baku Heart Days", dedicated to the memory of National Leader Heydar Aliyev, on 19-21 May, 2023. As you already know, the AzSCVS organized the "Baku Heart Days" International Congress from 2009.

Special attention paid by President Ilham Aliyev to this field as a logical continuation of the healthcare policy of the National Leader Heydar Aliyev, enabled such rapid development of cardiology and cardiovascular surgery in the country. The increasing interest of the international community towards these congresses, which are a great contribution into the development of cardiology and cardiovascular surgery, shows that we are on the right path.

While developing the program for the congress, we also have tried to cover the most disputable problems of cardiology and cardiovascular surgery and maintain a high scientific-practical level of the congress. Traditionally, both local and foreign specialists will be able to send their abstracts electronically. These abstracts will be printed in a special booklet of the congress and distributed among all participants. Live transmission of the surgeries on disputable patients that we will hold jointly with the most eminent specialists of the world, will enhance the scientific-practical significance of the "Baku Heart Days" International Congress. I believe the practical courses also will be especially beneficial for our young colleagues.

At the same time, this congress will enable the Azerbaijani specialists to discuss the latest achievements in cardiology with the leading experts of the world. Our foreign guests will have a chance to discover the rich history and cultural heritage of Azerbaijan through our social program.

As the chairman of the Azerbaijan Society for Cardiovascular Surgery, both personally and on behalf of the members of the organizing committee of the congress, I invite my colleagues in cardiology and cardiovascular surgery to the "Baku Heart Days" 8th International Congress in May, 2023.

Looking forward to meet in Baku, Prof. Dr. Kamran Kazimoglu MUSAYEV Chairman of AzSCVS





#### SCIENTIFIC PROGRAM

"Baku Heart Days" 8th International Congress

of the Azerbaijan Society for Cardiovascular Surgery

dicated to the 100th birth anniversary of the national leader Heydar Aliyev

MAY 19-21, 2023 / Gulustan Palace, Baku, Azerbaijan SCIENTIFIC PROGRAM

MAY 19, 2023

Time	PLAN	Adress	
10:00- 11:00	Visit to the Alley of Martyrs and the Alley of Honor		
10:00- 14:00	Surgical anastomosis course (Ethicon) (Şeref Alp Küçüker, Nevzat Erdil)	Central Clinic Hospital	
14:00- 18:00	Mitral valve repair course (Mustafa Güden)		
14:00- 16:00	The future of high technologies in cardiovascular medicine – Metaverse session – Introduction to the concept of Mathematical Surgery- Peyman Sardari Nia	Online	
10:00- 14:00	Perfusion course: The use of the blood transfusion device in heart surgery: benefits and methods (Livanova-Besan)	Central Clinic of Oil	
14:00- 18:00	Nursing course (Doğsan)	Workers	
15:00- 17:00	Roundtable session: The future of cardiovascular surgery in the Turkic World (Azerbaijan, Turkiye, Kazakhstan, Uzbekistan, Turkmenistan, Kvrouzstan)	Gulustan Palace	

#### MAY 20, 2023 MAIN HALL

Time	Lecture title	Speaker
8:00-12:00	Registration	
9:00-10:00	AORTA AND BRANCHES	
MODERATORS:	Seymur Musayev, Nasraddin Abishov, Camil Babayev	
9:00-9:15	Surgical treatment of Hypertrophic Obstructive Cardiomyopathy	Aleksandr Boqachev
9:15-9:30	Management of aortic dissection in marfanoid patients	Ubaid Ullah
9:30-9:45	Total Arch replacement using Thoraflex device: Single Center Experience	Parla Astarcı
9:45-10:00	Discussion	
10:00-11:00	MITRAL VALVE	
MODERATORS:	Vuqar Qapaqov, Rashad Mahmudov, Firdovsi Ibrahimov	
10:00-10:15	Mitral surgery is best performed through midline sternotomy?	Prakash Pundjabi
10:15-10:30	State of the art endoscopic mitral valve repair in Barlow valves	Peyman Sardari Nia
10:30-10:45	Infective endocarditis: indication-techniques and results for surgical treatment	Mustafa Cikirikcioglu
10:45-11:00	Discussion	
11:00-11:30	COFEE-BREAK	
11:30-12:30	OPENING CEREMONY	
12:30-13:30	CONGENITAL HEART DISEASES I	
MODERATORS:	Atıf Akçevin, Elnur Hasanov, Veli Behbudov, Qalib Imanov	
12:30-12:45	Surgical treatment of anomalous coronary arteries	Zohair Al Halees
12:45-13:00	Outflow tract rotation for complex transposition of great arteries: review of a single centre series	Tornike Sologashvili
13:00-13:15	Unifocalisation in patient with VSD and Pulmonary Atresia	Alican Hatemi
13:15-13:30	Discussion	
13:30-14:30	LUNCH	
14:30-15:00	HONORARY LECTURE	
CHAIRMEN	Kamran Musayev, Richard Daly	
14:30-15:00	History of invasive cardiology	Murat Tuzcu
15:00-16:00	CORONARY_	
MODERATORS:	Anar Emrah, Gulnaz Dadashova, Uzeyir Rahimov	
15:00-15:15	Multivessel coronary artery disease and Mitral regurgitation: In Search of the Best Treatment: When and How I treat the Ischaemic mitral valve during CABG	Prakash Pundjabi
15:15-15:30	LMCA: Surgical approach	Sheref A. Kucuker
15:30-15:45	LMCA: Invasive approach	Teoman Kılıç
15:45-16:00	Discussion	
16:00-16:30	COFFEE-BREAK	
16:30-17:30	SOCIAL SESSION	
MODERATORS:	Nigar Kazimzadeh, Yasmin Rustamova, Ulvi Mirzoyev	

## 8<sup>th</sup> International "Baku Heart Days" Congress

16:30-16:45	The ethical aspects of Extracorporeal Membrane Oxygenation	Carlos A. Mestress
16:45-17:00	The role of social media in health management	Gunay Kazimova
17:00-17:15	Our heart and hormones	Farhad Burzu
17:15-17:30	Discussion	
17:30-18:30	MECHANICAL CIRCULATORY SUPPORT	
MODERATORS:	Ömer Bayezid, Fuad Abdullayev, Oktay Musayev, Isakh Mustafayev	
17:30-17:45	Where are we with Current state of MCS and it'sinfluence on Transplant Programs	Asghar Khaghani
17:45-18:00	Development of Mechanical Circulatory Support in Iasi	Grigori Tinica
18:00-18:15	MCS program in Kazakhstan: 10 years outcomes	Svetlana Novikova
18:00-18:15	MCS program in Kazakhstan: 10 years outcomes Discussion	Svetlana Novikova

	II HALL	
15:00 -16:00	ABSTRACT SESSION 7 min presentation, 3 min discussion	Authors
MODERATORS:	Shahin Khalilov, Beyrek Abbaszadeh, Elnur Azadkhanov	
15:00-15:10	Results of use of non-glycosic cardiotonic agent at patients with severe left ventricular dysfunction during coronary bypass operations.	Kh. Khalikulov, D. Chernov, S. Murtazaev, Kh. Mirzaev.
15:10-15:20	Results off-pump coronary artery bypass through ministernotomy at patients with diabetes mellitus.	Khalikulov Kh.G., Mansurov A.A., Murtazaev S.S., Djuraeva N.M.
15:20-15:30	Robotic repair of atrial septal defect with partial pulmonary vencus return anomaly: Cur 5 year experience	M. Kadan , G. Erol, E. Kubat, K. Karabacak, S. Doğancı, E. Hacızade, C. Bolcal, U. Demirkılıç
15:30-15:40	Unplanned 30-day re-admissions after coronary artery bypass grafting	Khan, I. Samy Ali, Tarig F. Babiker, Ab.Elrefy, Y. M. Obeidat, Z. M. Khan
15:40-15:50	Effect of Dren Localization on Early Postoperative Results in Minimally Invasive Mitral Valve Operations	S. Musayeva, E. Selçuk, M. Şengör, D. Kara , C. Köksal.
15:50-16:00	РЕДКИЕ СЛУЧАИ МИКСОМЫ СЕРДЦА (из практики кардиохирургического отделения).	Абдумаджидов Х.А., Буранов Х.Ж., Ураков Ш.Т.
16:00-16:10	Minimal invasive Cardiac surgery: A single centre Experience of initial 60 cases	Yasir Khan

#### MAY 21, 2023 MAIN HALL

Time	Lecture title	Speaker
9:00-10:00	HEART FAILURE	
MODERATORS:	Mehmet Ali Özatik, Ilqar Tahiroglu, Farid Aliyev	
9:00-9:15	Heart transplantation update: DCD, Wx-vivo perfusion and allocation policy	Richard Daly
9:15-9:30	Myocardial revascularization in patients with heart failure	Solkhan Lominadze
9:30-9:45	VA ECMO: The use in supporting in Cath-Lab as ECMO-CPR, and complex ventricular ablation	Ehud Rudis
9:45-10:00	Discussion	
10:00-11:00	CONGENITAL HEART DISEASES 2	
MODERATORS:	Elshen Rzayev, Kamran Ahmedov, Elnur Imanov	
10:00-10:15	Strategy and Technique for Surgical Treatment of Ebstein's Anomaly	Quing Yu Wu
10:15-10:30	Surgery for Hypoplastic Aortic Arch	Alican Hatemi

10:30-10:45	Biventricular vs. Single Ventricle Repair for Complex Congenital Cardiac Lesions	Zohair Al Halees
10:45-11:00	Discussion	
11:00-11:30	COFEE-BREAK	
11:30-12:30	MIXED SESSION 1	
MODERATORS:	Eldar Aliyev, Tofiq Cahangirov, Ruchan Akar	
11:30-11:45	Pathway for the diagnosis and management of pulmonary embolism	Eyal Herzog
11:45-12:00	Trans-apical Tendyne valve implantation: Single centre experience.	Parla Astarci
12:00-12:15	Fetal ECHO-cardiography	Azer Farac
12:15-12:30	Discussion	
12:30-13:30	MINIMALLY INVASIVE SURGERY	
MODERATORS:	Cabir Gulmali, Mehman Agamaliyev, Rafael Dashdemirov	
12:30-12:45	Robot assisted Heart surgery: current status and pitfalls	Richard Daly
12:45-13:00	Minimally invasive mitral valve repair: pitfalls and safeguards	Cengiz Koksal
13:00-13:15	Routine complete coronary artery revascularization via left anterior thoracotomy on pump (mini bypass surgery)	Barish Caynak
13:15-13:30	Discussion	
13:30-14:30	LUNCH	
14:30-15:30	AORTIC VALVE	
MODERATORS:	Mireli Mecidov, Abbasali Abbasaliyev, Aysel Islamli	
14:30-14:45	Where we are in Transcatheter Aortic Valve Replacement?	Teoman Kılıç
14:45-15:00	Reconstructive surgery of the aortic root with autologous tissues: are there any limits?	Roman Komarov
15:00-15:15	Patient-prosthesis mismatch	Mustafa Guden
15:15-15:30	Discussion	
15:30-16:30	MIXED SESSION 2	
MODERATORS:	Ashraf Hasanzadeh, Elnur Isayev, Rufulla Abdullayev	
15:30-15:45	Tricuspid Valve Replacement: Mechanical or Biological Prostheses? A Systematic Review and our experiences	Abbas Afrasiabi
15:45-16:00	Cardiovascular diseases and Type II Diabetes Mellitus	Hidayat Mammadov
16:00-16:15	Role of periodontology in heart health	Cavid Ahmedbeyli
16:15-16:30	Discussion	
16:30-17:00	COFFEE- BREAK	
17:00-18:00	VASCULAR	
MODERATORS:	Farhad Agayev, Vuqar Fattah-pur, Mehemmed Karimov	
17:00-17:15	Miniphlebectomy in chronic venous insufficiency	Nevzat Erdil
17:15-17:30	Significance and approach to vascular graft infection.	Carlos A. Mestress
17:30-17:45	Surgical/ invasive approach in Femoro-popliteal occlusions	Nevzat Erdil
17:45-18:00	Discussion	
18:00-19:00	ANESTEZIOLOGY AND ICU	
MODERATORS:	Rafiq Ibrahimov, Fazil Abbasov, Elman Alekberov	
18:00-18:15	Regional anesthesia in cardiac surgery	Asef Mammadov
18:15-18:30	Cardiovascular ICU: Fluid balance and pain management	Gulnara Shabiyeva

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18:30-18:45	Anesthesia in special cases (LV EE PH, Anitythmia, organifailure)		Remin Verdikhanov
18:45-19:00	Discussion		
	IIHALL		
15:20-16:30	ABSTRACT SESSION 7 min presentation, 2 min discussion	Authors	
MODERATORS:	Musa Qahramanov, Ruslan Najafov, Imadetelin Bagirov		
15:00-15:10	Direct results of opcab in patients with severe left ventricle dysfunction and severe concomitant diseases.	Rhalikulov Kh.G., Mansurov A.A., Murtazoev S.S., Djurzeva N.M., Abdumadjidov Kh.A., Ikhomov O.E.	
15:10-15:20	Results of coronery bypass grafting at patients with acute coronery synchrome.	Kh. Khalikukov, R. Yarbekov, S. Martzniev, S. Babedjanov, N. Djaraeva, Kh.Alzdarnadjidov.	
15:20-15:30	Unplanned 30-day re-admissions after coronary artery bypass grafting	I. Khan, I. Samy Ali, Tarig F. Babiker, Ab.Eirefy, Y. M. Obeidat, Z. M. Khan	
15:30-15:40	Aorti: Valve Neocuspidization (AVNeo) with Ozaki procedure. A mid-term single center experience.	K. Karabacak, E. Hacazado, E. Kubat, Y. Tokgóz, M. Kadan, T. Özdern, G. Erol, C. Bolcal	
15:40-15:50	Complete Coronary Revascularization via Left Anterior Thoracotomy with the TCRAT tochnique, single center experiens.	K.Karabacak, M. Kaslan , T. Özdem, E. Kal Demirkaran, G. Erol, C. Bolcal	at, E. Hecuade, T.
15:50-16:00	ХИРУРГИЧЕСКОЕ ЛЕЧЕНИЕ ГЕПАТОКАРДИАЛЬНОГО И КАРДИОПУЛМОНАЛЬНОГО ЗХИНОКОКОЗА	Х.Ж. Буронов, Х.А. Абдунадиндов	
16:00-16:10	Clinical Outcomes of CABG patients During the COVID- 19 Pandemic	Dgtay Muzayev, Rafael Dashadamirov, Fin Kamran Musayev, Shafa Shahbazova, Eko Bewyek Abbacovde, Nicar Kashmade, Na	dovai Ibrahimov, ira Gardashova, piz Mushtarzadeb

## Metaverse session Topic:

The future of high technologies in cardiovascular medicine Introduction to the concept of Mathematical Surgery Speaker: Prof. Dr. Peyman Sardari Nia

Date: May 19, 2023

Time: 14:00 – 16:00 (GMT+4)

### JOIN METAVERSE SESSION

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Oral Presentations Abstracts	19-35

8th International "Baku Heart Days" Congress

## **SPEAKER ABSTRACTS**

#### DOI: 10.5455/azjcvs.2023.05.19

Nevzat Erdil MD, Prof.

Inonu University, Medical Faculty, Department of Cardiovascular Surgery, Malatya, Türkiye

## Miniphlebectomy in Chronic Venous Insufficiency

#### Abstract

Mini (ambulatory) phlebectomy is a safe, aesthetic, effective and economical surgical method used for the removal of incompetent saphenous vein, major branches, perforators and reticular veins, except for the saphenofemoral and saphenopoliteal junction in the treatment of chronic venous insufficiency. In cases with saphenous insufficiency with accompanying large varicose packs, miniphlebectomy may be accompanied in the same session or in a subsequent session, whether it is classical striping procedure, transcatheter saphenous ablation techniques or other techniques. Before mini phlebectomy, varicose veins should be marked in detail and carefully under the guidance of Doppler ultrasonography while the patient is standing. Miniphlebectomy may not be successful and effective in patients who develop dermatitis and have increased skin and subcutaneous tissue thickness (CEAP 4 and above). Patients should be informed about this. The incisions should be enlarged if necessary or sclerotherapy may be recommended in the next session. In these patients, the risk of complications increases when we say to do a miniphlebectomy. Mini phlebectomy is a very safe method and serious complications are very rare. Small incisions during the procedure, not traumatizing the skin and subcutaneous tissue, closure with a sterile strip after the procedure, early bandage application, wearing compression stockings for at least 2-3 weeks after 1 day and early mobilization are important details of the miniphlebectomy intervention. In this talk, I aimed to explain the indications of this procedure, how it is done, post-procedure complications, accompanied by photographs and an operation video.

Keywords: Chronic Venous Insufficiency, Mini phlebectomy, Treatment

#### DOI: 10.5455/azjcvs.2023.05.19

Nevzat Erdil MD, Prof.

Inonu University, Medical Faculty, Department of Cardiovascular Surgery, Malatya, Türkiye

## Surgical / Invaziv Approach in Femoropopliteal Occlusions

#### Abstract

The most common cause of peripheral arterial disease is systemic atherosclerosis. Multiple arterial disease is 60–70%. Infrainguinal involvement: 50% Femoropopliteal, 5% Popliteal, 17% Crural. 20-40% of the cases with peripheral arterial disease are asymptomatic. These patients are diagnosed using anamnesis, clinical examination and ankle-brachial index. Further testing is not recommended for these patients. Risk factor modification is recommended in these patients (LDL lowering, Hypertension treatment, Diabetes regulation, smoking cessation). Best medical treatment is recommended for patients with intermittent claudication and a walking distance of more than 200 meters. In cases that do not benefit from treatment or have intermittent claudication below 200 meters; Doppler USG, CT Angio, MR angio and classical DSA procedures should be performed and the patients should be evaluated in terms of interventional treatment. According to the ESVS 2017 guideline, first choice endovascular intervention is recommended for short femaropopliteal lesions (less than 25 cm). Femoropopliteal bypass is the first choice in patients with femaropoliteal lesions larger than 25 cm. These indications may vary according to the comorbidity of the patient, the experience of the center where the intervention is performed, the location and severity of the vascular occlusion. In this talk, the indications for surgery or invasive intervention in femaropopliteal artery occlusions will be explained with national and international guidelines.

Keywords: Peripheral arterial disease, indication, treatment, surgery, invasive intervention

Qing-Yu Wu

First Hospital of Tsinghua University, Cardiac Center Beijing, China

## **Strategy and Technique for Surgical Treatment of Ebstein's Anomaly**

#### Abstract

**Introduction:** To introduce our experience on 253 patients with Ebstein's anomaly (EA) underwent surgical treatment between March 2004 to January 2020 in Cardiac center, The First Hospital of Tsinghua University. Surgical strategies and techniques, management principles and operative indications were accessed.

**Methods:** A retrospective study of the results 258 operations in 253 patients with Ebstein anomaly were performed by the same cardiac surgeon in our center, 32 patients of them had previous cardiac surgery in other hospitals. Their clinical data was collected and analyzed.

**Results:** Anatomical correction (to reconstruct tricuspid valve with three leaflets, a normal right ventricle and correct complicated malformations simultaneously) was performed in 203 (80.2%) patients; 1<sup>1</sup>/<sub>2</sub> ventricle repair in 38 (15%) patients, tricuspid valve repair only in 4 patients (1.5%), tricuspid valve replacement in 10 patients (3.9%), total cavopulmonary connection (TCPC) in 2 (0.7%) and Glenn operation in 1 patient (0.4%). Reoperation was performed in 5 patients (1.9%) duration of hospital stay, among of them tricuspid valve replacement in 1 (0.4%) patient, 1<sup>1</sup>/<sub>2</sub> ventricle repair in 2 (0.7%), and tricuspid valve annulus reinforcement in 2 (0.7%) patients. Associated cardiac malformations were operated in 202 patients (80%) simultaneously. 244 post-operative patients( 4patients lost follow-up)were followed up with a duration of 3-168 months (mean  $87.6\pm38.4$ m), early mortality rate was 1.9%. A-V block complicated in 1(0.4%) patient. Cardiac function improved significantly with mean NYHA class improved from 3.5 to 1.1. The mean grade of tricuspid valve regurgitation improved from 3.6 to 1.5.3 late deaths occurred (1.1%). Survival rate at 5 and 10 years after surgery was 98.6% and 98.2%, respectively. Reoperation was performed in 5 patients (2.0%) during follow up period Conclusions: Based on our management strategies, operative principles and techniques, the anatomical correction of EA can achieve excellent results and low rates of TCPC, 11/2 ventricle repair, valvular replacement.

Keywords: Ebstein's Anomaly, Anatomical repair, Surgical treatment, Long-term results

Sulkhan Lominadze

Professor, Caucasus Medical Centre, Tbilisi, Georgia

## **Myocardial Revascularization in Patients** with Heart Failure

Coronary artery disease (CAD) is the most common type of heart disease and the third leading cause of death in both women and men worldwide. Coronary artery bypass graft (CABG) is the most performed procedure in patients with multivessel coronary artery diseases. Indeed, several perioperative risk factors have been reported to affect outcomes after CABG. Traditional predictors of adverse outcomes after CABG are older age, female gender, diabetes mellitus, hypertension, chronic obstructive pulmonary disease (COPD), renal impairment, left main stem disease, and low left ventricular ejection fraction (LVEF). Therefore, identifying the predictors that may be associated with worse outcomes after CABG, plays an important role in making a clinical decision and patient selection. In 2018 ESC/EACTS Guidelines on myocardial revascularization randomized clinical trial data comparing revascularization with medical therapy exists only for CABG in the setting of the STICH trial. One analysis from this trial showed that CABG can be performed with acceptable 30 day mortality rates (5.1%) in patients with LV dysfunction (LVEF  $\leq 35\%$ ). Extended follow-up in the STICH Extension Study (STICHES) supports a significant survival benefit of CABG combined with medical therapy vs. medical therapy alone in a 10 year observation period. Pre-operative ejection fraction (EF) and comorbidities affect post-op outcomes. We aimed to compare the in hospital mortality rate of our patients with low EF (LVEF  $\leq$  30%). We conducted a retrospective evaluation of prospectively collected data in patients undergoing isolated CABG at the Caucasus Medical Centre (Tbilisi, Georgia) from from February 2019 to July 2022. In hospital mortality rate was zero. We believe that our results are because of all of the operations were performed with Off-Pump coronary artery bypass technique. Since October 2018, 1600 different types of Open Heart surgeries are performed in our Hospital. CABG is the most performed procedure in our department of Cardiac Surgery. In hospital mortality rate is 2.1%(34).

#### DOI: 10.5455/azjcvs.2023.05.19

Sulkhan Lominadze

Professor, Caucasus Medical Centre, Tbilisi, Georgia

## Myocardial Revascularization in Patients with Heart Failure

## **Teaching Points:**

1. Coronary artery disease (CAD) is the most common type of heart disease and the third leading cause of death in both women and men worldwide.

2. Coronary artery bypass graft (CABG) is the most performed procedure in patients with multivessel coronary artery diseases. Indeed, several perioperative risk factors have been reported to affect outcomes after CABG

3. Traditional predictors of adverse outcomes after CABG are older age, female gender, diabetes mellitus, hypertension, chronic obstructive pulmonary disease (COPD), renal impairment, left main stem disease, and low left ventricular ejection fraction (LVEF). Therefore, identifying the predictors that may be associated with worse outcomes after CABG, plays an important role in making a clinical decision and patient selection.

4. In 2018 ESC/EACTS Guidelines on myocardial revascularization randomized clinical trial data comparing revascularization with medical therapy exists only for CABG in the setting of the STICH trial. One analysis from this trial showed that CABG can be performed with acceptable 30 day mortality rates (5.1%) in patients with LV dysfunction (LVEF  $\leq$ 35%). Pre-operative ejection fraction (EF) and comorbidities affect post-op outcomes. We aimed to compare the in hospital mortality rate of our patients with low EF (LVEF  $\leq$ 30%).

OPCAB operations reduce mortality and morbidity in patients with low EF.Hospital. CABG is the most performed procedure in our department of Cardiac Surgery. In hospital mortality rate is 2.1%(34).

Tornike J. Sologashvili

Cardiovascular Surgery, Geneva University Hospitals & School of Medicine, Geneva, Switzerland

# Outflow tract rotation for complex transposition of great arteries: review of a single centre series

**Introduction:** When transposition of the great arteries (TGA) is associated with ventricular septal defect (VSD) and pulmonary valve stenosis (PS), Rastelli or Bex-Nikaidoh (posterior aortic translocation) procedures are usually performed. Right and left ventricular outflow tract obstruction are common complication after these surgeries. A modification of a novel surgical technique, initially described by Yamagishi, currently known as outflow tract rotation (OTR), has been used at our center in selected cases. OTR allows for conservation of both semilunar native valves, replaced in their physiological position by a half-turn rotation of the truncal block. The aim of this study was to analyse our general experience with this surgical technique and the mid-term results regarding growth of the arterial trunci and function of sumilunar valve when preserved.

**Method:** We reviewed all patients that underwent OTR in our center, performed by the same surgeon. Pre-operative patient selection was performed in multidisciplinary cardiology team after echocardiography, and CT. Included: TGA/VSD/PS, TGA with inlet VSD. Intra-operative anatomy was carefully inspected to confirm the adequacy of OTR. 23 Patients with TGA VSD PS underwent OTR between 2016 and 2022. Patient age ranged from 4 days to 11.5 years with a median of 2.2. Pulmonary valves could be preserved in 11 cases whereas 2 patients underwent monocusp pulmonary valve plasty and 2 Contegra implantation.

**Results:** Two patients with inlet VSD required pacemaker implantation. Short- and medium-term outcome were excellent, with no mortality, and no need for reoperation after a mean follow up of 18,7 months.

Richard C. Daly, M.D.,

Professor of Surgery, Mayo Clinic

## Heart Transplantation: What's New?

**Introduction:** When transposition of the great arteries (TGA) is associated with ventricular septal defect (VSD) and pulmonary valve stenosis (PS), Rastelli or Bex-Nikaidoh (posterior aortic translocation) procedures are usually performed. Right and left ventricular outflow tract obstruction are common complication after these surgeries. A modification of a novel surgical technique, initially described by Yamagishi, currently known as outflow tract rotation (OTR), has been used at our center in selected cases. OTR allows for conservation of both semilunar native valves, replaced in their physiological position by a half-turn rotation of the truncal block. The aim of this study was to analyse our general experience with this surgical technique and the mid-term results regarding growth of the arterial trunci and function of sumilunar valve when preserved.

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**Results:** Two patients with inlet VSD required pacemaker implantation. Short- and medium-term outcome were excellent, with no mortality, and no need for reoperation after a mean follow up of 18,7 months.

Richard C. Daly, M.D.,

Professor of Surgery, Mayo Clinic

## **Robot-Assisted Mitral Valve Repair: Mayo Clinic Experience**

Repair of severe mitral regurgitation for degenerative mitral valve disease improves symptoms and late survival. If repair is delayed until after left ventricular EF < 60% or advanced symptoms, late survival is less than what would be expected in a normal population. Therefore, surgical intervention is advisable even in asymptomatic patients if mitral regurgitation is severe, valve repair is likely, and surgical risk is otherwise low. Surgical mitral valve repair has better outcome compared to current percutaneous therapies such as MitraClip. Minimally invasive approach to surgical mitral valve repair include mini right thoracotomy and robot assisted approach. Robot assisted approach to mitral valve repair has been performed at the Mayo Clinic since 2008 and there have now been over 1500 robot assisted mitral valve repair cases. Outcomes have been excellent. Conversion to sternotomy was performed in 0.5%, much of these related to cannulation. There have been no conversions for inability to repair the mitral valve. In recent review of 10 year outcome, the freedom from reoperation at 10 years was 92.6% and survival at 10 years was 93%. When patients were surveyed, 93.4% reported their activity level at or above their peers and 93.3% reported no activity limitations. Left ventricular ejection fraction decreased early postoperatively, as expected, but improved over the subsequent 2 years to near normal. Robotic mitral valve repair is safe and effective with excellent long-term results. Exceedingly low mortality rate and freedom from reoperation are comparable to standard open repair.

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## Incidence and Clinical Implications of Postoperative Atrial Fibrillation in Patients Undergoing On-Pump and Off-Pump Coronary Artery Bypass Grafting

Aim: Post-operative incidence and clinical implications of atrial fibrillation in patients having on-pump and off-pump

CABG.

**Place of Study:** Department of Cardiovascular & Thoracic Surgery, Shaikh Zayed Hospital, Lahore.

Study Duration: 1 year

Design of Study: Quasi-experimental study

**Methodology:** 140 cases were selected. Non-probability purposive sampling technique was used.

Grouping: Group A (Off-pump) and Group B (On-pump).

**Results:** In group A, cases showed atrial fibrillation and in group B 23(32.9%) cases were noted. The incidence of

postoperative atrial fibrillation was low in off-pump CABG as compare to on pump CABG.Clinical implications of postoperative AF such as, length of ICU & hospital stay, cerebrovascular events, wound infections and mortality of the cases are significantly reduced by using off-pump CABG.

**Conclusion:** Incidence of P/O atrial fibrillation is low in off-pump CABG as compare to on pump CABG

Keywords: Coronary Artery Bypass Graft (CABG), Atrial Fibrillation, on pump CABG

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## Significance and Current Approaches to Vascular Graft Infection

Vascular graft infections are uncommon (1-3%), are associated to a high mortality (>20-30%) and to relevant costs. The infection occurs perioperatively through inoculation with bacteria from the patient skin flora. Vascular graft infections are biofilm-associated infections and are often polybacterial (30%). They are common to all graft locations and there still is a low level of evidence to recommend specific therapies, isolated or in combination. The clinical pattern includes a variety of symptoms and signs. The Management of Aortic Graft Infection Collaboration criteria (MAGIC) offer support in the diagnosis of aortic graft infection and positron emission tomography (PET) scan may add value to differentiate general inflammation (e.g. postoperatively) from infection. Operative treatment modalities include extensive debridement, removal of the infected material, local debridement and in situ aortic reconstruction whenever possible. Conservative treatment may be considered in selected cases. A number of materials for vascular replacement have been used; allografts and xenopericardial tubes seem to offer the best results with regards reinfection. Accumulated information suggests that biofilm formation accounts for the major pathogenetic mechanism, that there are a diversity of therapeutic approaches and that there is still no clear consensus regarding the best treatment option.

8th International "Baku Heart Days" Congress

## **ORAL PRESENTATIONS**

Imran Khan, Iman Samy Ali, Tarig F. Babiker, Abdelbasset Elrefy, Yaqthan M. Obeidat, Zahid M. Khan

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## **Unplanned 30-Day Re-Admissions After Coronary Artery Bypass Grafting**

### Abstract

Aim: Coronary artery bypass grafting is the most common cardiac surgical procedure performed but re-admissions after the surgery affects quality of life and incurs high cost on health care. The objective of this research was to study the re-admission rate and its predictors after CABG in a private health setup in the Kingdom of Saudi Arabia.

**Materials and Methods:** A retrospective study of the medical records of the patients admitted for coronary artery bypass grafting at a tertiary care private hospital between January 2018 and December 2022 was performed. Patients above the age of 18 who underwent first time CABG were included in the study. Patients with additional procedures like valve surgery were excluded. Re-admission was defined as unplanned re-hospitalization within 30 days after discharge. Data was collected on Excel sheets from the available electronic medical record system of the hospital. The data was then transported to and analyzed using IBM SPSS software (version 23, SPSS Inc., Chicago, IL, USA). Patients were divided into re-admission group and no re-admission group and various perioperative variables were compared between the two groups.

**Results:** After applying the exclusion criteria, the final analysis included 503 patients. The total number of re-admitted patients was 29 (5.77%). The main reasons for readmissions were superficial chest wound infection (24.14%), pericardial effusion (24.14%) and deep sternal wound infection (10.34%). Variables significantly different between the readmission group and no readmission group were analyzed through stepwise logistic regression analysis. Factors identified by the model predicting readmission were age (OR=1.05, 95% CI (0.934-0.994), p= 0.042), Diabetes mellitus (OR=1.31, 95% CI (0.87-0.98), p=0.045), smoking (OR=0.181, 95% CI (0.037-0.882), p=0.034) and NYHA class III or IV (OR=0.046, 95% CI (0.46-0.686), p=0.001).

**Conclusion:** Preoperative factors like age, diabetes mellitus, history of smoking and NYHA class were identified as predictors of re-admission after CABG. Large scale multi center studies are needed to study the rate as well as financial impact of re-admissions after CABG.

Keywords: Coronary artery bypass grafting, re-admission, predictors, perioperative factors

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## **Clinical Outcomes of CABG Patients During the COVID-19 Pandemic**

### Abstract

**Actuality:** The COVID-19 pandemic has presented unique challenges in the management of patients undergoing coronary artery bypass grafting (CABG). Understanding the impact of COVID-19 on the clinical outcomes of these patients is crucial for optimizing patient care and identifying potential modifications in practice.

**Aim:** This study aimed to assess the clinical outcomes of patients who underwent CABG two years before the COVID-19 pandemic and investigate the impact of COVID-19 infection on mortality rates, hospitalization rates, and the need for repeat revascularization.

**Materials and Methods:** A retrospective analysis was conducted on a cohort of 510 CABG patients, comprising 172 COVID-19 positive and 338 COVID-19 negative patients. Patient demographics, comorbidities, perioperative variables, and clinical outcomes were collected and analyzed. Comparative analysis was performed to evaluate mortality rates, causes of death, hospitalization rates, and the need for repeat revascularization between the COVID-19 positive and negative groups.

**Results:** Among the COVID-19 negative patients, 31 deaths were observed, with 17 attributed to cardiac causes and 14 due to other causes. COVID-19 positive patients experienced 11 deaths related to COVID-19 infection. 9 COVID-19 negative patients and 6 COVID-19 positive patients required repeat revascularization. Statistical analysis revealed a significant association between COVID-19 status and the need for repeat revascularization (p < 0.001). Furthermore, among the COVID-19 positive patients, 43 individuals required hospitalization, whereas there were no hospitalizations in the COVID-19 negative group.

**Conclusion:** This study demonstrates significantly higher mortality rates among COVID-19 negative patients, primarily attributed to cardiac causes, while COVID-19 positive patients exhibited a higher incidence of COVID-19-related deaths. Additionally, COVID-19 infection was associated with an increased need for repeat revascularization and a higher rate of hospitalization. These findings emphasize the importance of comprehensive patient management, infection control measures, and resource allocation to optimize outcomes in CABG patients during the COVID-19 pandemic.

Keywords: COVID-19, coronary artery, CABG

## Aortic Valve Neocuspidization (AVNeo) with Ozaki Procedure A Mid-Term Single Center Experience

#### Abstract

**Aim:** Aortic valve disease (AVD) represents nearly 50% of all valve diseases, affecting millions of people worldwide. The gold standard treatment for severe AVD has always been aortic valve replacement (AVR), which involves the substitution of the native aortic valve with a biological or mechanical prosthesis. Ozaki procedure or aortic valve neo-customization includes the replacement of aortic valve cusps by three native autologous pericardial cusps. The Ozaki procedure is now gaining popularity in cardiac surgery centers around the world. This study aimed to present the first 50 patients with midterm experience of the AVNeo procedure of a single center.

**Materials and Methods:** The medical records of the first 50 patients who underwent AVNeo (Ozaki procedure) with or without concomitant cardiac surgery between December 2019 to May 2022 at our hospital were scanned retrospectively.

**Results:** AThe mean age of patients was  $62.9\pm8.7$  aged years and 27 of them were men. 26 patients (52%) were operated on for aortic stenosis and 24 patients (48%) were on for aortic insufficiency. Morphology of the aortic valve was tricuspid in 42, bicuspid in 7, and mono-cuspid in one of the patients. Concomitant cardiac surgery was performed in 32 patients. There was 8 mitral valve surgery, 15 Coronary bypass surgery, 8 ascending aortic surgery an one pulmonary valve surgery. We performed 48 cases through median sternotomy and 2 were performed through right anterior thoracotomy. Preoperative echocardiographic findings showed us Peak aortic gradient (mmHg) was  $80.8\pm5.3$  and the Mean aortic gradient was  $50.2\pm10.9$  and the aortic valve area (mm2) was  $0.89\pm0.22$ . Preoperative CT angiography revealed the mean aortic annulus diameters were  $23.1\pm2.02$  mm. Cardiopulmonary bypass time was mean 141.8±36.7 and Aortic cross-clamp time was mean  $104.1\pm27.9$  minutes.

2 patients needed reoperation for bleeding after surgery, no pacemaker implantations, no conversion to classical prosthetic aortic valve replacement, or infective endocarditis. One patient needed reoperation in the third month due to severe aortic insufficiency. 3 patients died due to non-cardiac reasons.

Postoperative echocardiographic findings showed us significant recovery in peak and mean aortic valve pressures at discharge, 6th months, 1 year, 2 years, and 3 years (Preop:Peak gra  $80.8\pm15.3$ mmHg and Mean gra.  $50.2\pm10.9$  mmHg. At discharge:  $20.1\pm3.1$  mmHg and  $9.8\pm2.1$  mmHg, 6th month:  $17.7\pm2.7$  mmHg and  $8.7\pm1.8$ mmHg, 1 year:  $15.9\pm2.6$  and  $7.7\pm2.1$ , 2 year:  $16.3\pm2.4$  and  $8.1\pm2.3$ , 3 year:  $17.3\pm2.1$  and  $9.2\pm2.5$ ). The rate of development of 2nd-degree and higher aortic valve insufficiency in the middle term was not observed, excepted 1 patient who needs redo surgery due to aortic insufficiency.

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**Conclusion:** In conclusion, the AVNeo procedure is a feasible technique for all kinds of aortic pathologies. This technique can be applied in patients with aortic stenosis, aortic regurgitation, infective endocarditis, and prosthetic valve endocarditis, with the advantages of immediate superb hemodynamics after the operation, avoiding anticoagulants and the applicability of concomitant surgical procedures. In the AVNeo procedure, there is no prosthetic stent ring, and the glutaraldehyde-fixed autologous pericardium is directly sutured into the native aortic annulus. As a result, the aortic gradient is much lower than all other prosthetic valves. This technique also has much better hemodynamic results as it does not change the anatomical structure of the annulus and the commissures thus allowing normal physiological annular movements and Dynamics without reducing the valve's functional area.

Although this procedure requires serious experience, results similar to the available published literature can be obtained and reproducible even during the learning curve when technical steps are strictly followed.

Keywords: Aortic valve, Aortic valve neocuspidisation, Aortic valve surgery

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## Effect of Dren Localization on Early Postoperative Results in Minimally Invasive Mitral Valve Operations

## Abstract

**Aim:** This study investigates the effect of drain localization on early postoperative results in patients who underwent mitral valve operation with right mini-thoracotomy.

**Materials and Methods:** The data of the patients who underwent mitral valve operation with mini thoracotomy between 2020-2023 were reviewed retrospectively. Both groups (Group 1: intercostal drain; Group 2: Subxifoid drain) compared postoperative drainage, pleural effusion, respiratory failure, analgesic use, and postoperative pain scales (Visual Analog Scale-VAS).

**Results:** Subxifoid drain insertion in patients undergoing mitral valve operation with mini thoracotomy significantly reduces early postoperative pain and in-hospital narcotic analgesic use compared to conventional intercostal drain insertion.

**Conclusion:** TThe data of a total of 144 patients (Group 1- intercostal= 113 and Group 2-subxifoid=33 patients) were examined. 60.4% (n=87) of the patients were male; the mean age was  $51.5\pm10.3$  years. Postoperative 1st day mean VAS scores were  $6.6\pm1.4 \& 4.4\pm1.2$ ; significantly higher in Group 1 (p<0.001). Mean VAS scores on postoperative 5th day were  $4.2\pm1.1 \& 3.8\pm1.4$ ; there was no significant difference between both groups (p=0.30). Narcotic analgesic use was significantly lower in patients with subxifoid drain inserted (Group 1= 45%, 51 patients & Group 2=22.6\%, 7 patients; p=0.023). There was no significant difference between both groups between postoperative drainage, pleural effusion, respiratory failure.

Keywords: Minimally invasive, mitral valve, drenage

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## **Results of Coronary Bypass Grafting at Patients with Acute Coronary Syndrome**

### Abstract

**Aim:** Estimation of the direct and short-term results of the coronary bypass operations of ischemic heart disease at patients with the unstable angina.

**Material and methods:** We have analyzed 110 patients with the ischemic heart disease who have the multivessel coronary artery disease with the unstable condition. By the period of 2018 - 2019 we performed coronary revascularization for these group of patients. The effectiveness of operations was evaluated by the following criteria: absence of angina symptoms after an operation, myocardial infarction, neuro-cerebral complications, mortality, echocardiographic data. All patients had the unstable angina (progressive angina, early postinfarction angina, acute coronary syndrome). In all cases preoperatively we tried to stabilize the condition of patients with the purpose of improvement the results of surgical intervention.

**Results:** At 78.8% cases patients had postinfarction cardiosclerosis, at 64.7% arterial hypetension, at 11.2% diabetes mellitus. 12 (10.9%) patients were diagnosed with acute coronary syndrome and 3 patients among these patients had the S-T myocardial infarction. The other 98 patients had unstable angina (66 (60%) patients with progressive angina and 32 (29.1%) patients with early postinfarction angina. Coronaryangiographic data was following: two-vessel disease – 33.6% cases, three-vessel disease – 53.6%, left main disease – 12.8% cases. The most frequent lesions were revealed of left anterior descending artery at 109 (99.09%) cases. EchoCG data showed following: ejection fraction of left ventricle preoperatively was average 45.5±1.2% (range from 36% to 62%). At the short time of period after operation the average ejection fraction has increased to the 47.3±1.3%. Among the three patients with the acute coronary syndrome two of them had negative troponin I test and one with the positive test. Perioperative myocardial infarction was developed at 2 (1.8%) patients.

In all 110 cases were performed various types of coronary bypass grafting operations. Quantity of grafts: 41 cases – two grafts, 55 cases – three grafts, 14 cases – 4 grafts. Coronary bypass grafting on beating heart was performed at 17 patients, due to very unstable condition and low contractility function of the heart with the means of decrease the unfavorable effect of cardiopulmonary bypass. Mortality rate was 0,9%, this patient was operated on the acute stage of myocardial infarction, due to unavailability of interventional treatment.

**Conclusion:** direct and short time results after operations of coronary revascularization at patients with unstable angina showed good clinical effect of surgical treatment. There should be stabilized the condition of patients prior to expected operation and in case of urgent situation (impossibility of conservative stabilization of condition and inability of interventional treatment) coronary bypass surgery has shown encouraging results at this type of group patients.

Keywords: Coronary artery by-pass, Acute coronary syndrome, ishemic heart diseases

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## Complete Coronary Revascularization via Left Anterior Thoracotomy with the TCRAT Technique, Single Center Experiens

## Abstract

**Aim:** Surgical revascularization of the myocardium in patients with coronary artery disease continues to be an effective treatment despite advances in percutaneous coronary intervention and stent technology. While using less traumatic techniques in surgical revascularization, one should also continue to adhere to safe and feasible surgery. Minimally invasive coronary artery bypass surgery is becoming increasingly popular as an effective and safe method. In this study, we aimed to share our experience and clinical results of coronary artery bypass surgery with left anterior mini-thoracotomy in our center.

**Material and methods:** In our center, between February 2021 and January 2023, 72 patients (male, and female) underwent coronary artery bypass surgery with left anterior mini-thoracotomy. No target vessel differentiation was made in the patients. A mean of 2.24±0.91 vessels underwent surgical revascularization. The left internal mammarian artery was used in all patients, and a saphenous vein graft was used for other anastomoses. All surgeries were performed with cannulation of the femoral artery and vein, accompanied by cardiopulmonary bypass (CPB), cross-clamping, and cardioplegia. Postoperative results were recorded and the results were analyzed.

**Results:** The mean duration of CPB was  $153\pm42.1$ , and the time of cross-clamp was  $73.8\pm25.6$ . The mean duration of intensive care and hospitalization were  $1.37\pm0.58$  and  $5.68\pm0.96$ , respectively. Reexploration was performed in 1 patient due to early postoperative bleeding. A median sternotomy was performed in 1 patient due to retrograde aortic dissection during femoral artery cannulation. No mortality was observed in our patients. No postoperative myocardial infarction was observed, and no additional percutaneous or surgical intervention was required in the controls.

**Conclusion:** Minimally invasive coronary artery bypass surgery is being performed safely and effectively all over the world. Although there are technical difficulties, the early results are satisfactory all over the world, as in our study.

Keywords: Minimally ivasive, coronary artery by-pass, ishemic heart diseases

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## Results of Use of Non-Glycosic Cardiotonic Agent at Patients with Severe Left Ventricular Dysfunction During Coronary Bypass Operations

## Abstract

**Aim:** To summarize our own experience of using the drug of a new class of calcium ion sensitizer levosimendan at various stages of the perioperative period of direct myocardial revascularization in patients with coronary artery disease with severe left ventricular (LV) dysfunction, to assess the efficacy and safety of various modes of its use.

**Materials and methods:** The object of the study was 11 patients with coronary artery disease with a low ejection fraction (EF) of the LV who were operated on from 2019 to 2020 at our department. The average age of patients was  $56.2 \pm 7.5$  years, 8 men (72.7%), 3 women (27.3%). The clinical picture of angina pectoris in 7 (63.6%) patients presented with stable angina, 4 (36.4%) patients presented with unstable angina. The severity of coronary lesions, calculated using the Syntax Score, averaged  $31.82 \pm 4.47$ . The mean value of LVEF calculated by the Simpson method was  $33.64 \pm 2.23\%$ . Other concomitant diseases were following: 5 (45.6%) patients with type II diabetes mellitus, 4 patients with stage III hypertension, in 2 (18.2) patients, cardiac arrhythmias of the type of a permanent form of atrial fibrillation.

**Results:** All patients underwent direct myocardial revascularization, in 2 cases on a beating heart, in the other with use of cardiopulmonary bypass and cardioplegia. The average revascularization index was 2.6. Levosimendan was used in all patients at various stages of the perioperative period in order to support hemodynamics. In 5 patients, the infusion of levosimendan was started from the moment of admission to the operating room (group I), in 3 patients during the operation (group II) and in 3 cases, levosimendan infusion was started on the first day after surgery, in the intensive care unit (ICU) at patients with severe hemodynamic instability resistant to the use of catecholamines (group III). The average time spent in the ICU at first group was  $2.6 \pm 0.8$  days, at second group -  $3.3 \pm 1.2$  days, in third group -  $7.3 \pm 1.2$  days. The progression of heart failure required the use of ECMO mechanical circulatory support in 2 patients of group III. Mortality was observed in 1 case, in a patient of group III, due to the development of multiple organ failure, cardiogenic shock.

**Conclusion:** Patients with low EF belong to the group of extremely severe risk, which is one of the main factors for the unfavorable outcome of cardiac surgery. In this regard, special attention is paid to methods of treatment that allow to increase coronary blood flow, improve myocardial contractility, and maintain hemodynamics at a level that ensures adequate microcirculation of vital organs. Perioperative use of levosimendan can significantly improve the course of the early postoperative period, which is reflected in a significant reduction in the length of stay in the ICU. Our experience shows that early use of the drug (before the main stage of the operation) to a greater extent allows to show its positive inotropic effects.

Keywords: Coronary artery by-pass, left ventricular ejection fraction, levosimendan

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## Minimal Invasive Cardiac Surgery: A single Centre Eperience of Initial 60 Cases

## Abstract

Aim: Minimally invasive procedures for coronary revascularization have been performed for over 20 years and have demonstrated their effectiveness in reducing the recovery times while ensuring optimal results and minimizing complications. The technical complexity, steep learning curves, cost and non availability of training programs are the basis of their limited acceptability. We present an initial single center experience of our initial 60 patients successfully treated with minimal invasive techniques. The aim is also to describe the step-by-step learning process on how to establish a minimally invasive coronary artery revascularization and valvular heart surgery program with limited resources.

**Materials and methods:** We retrospectively reviewed the records of patients who underwent minimally invasive coronary artery revascularization and different valvular and other procedures at our Institution between January 2021 and March 2023.Baseline demographics, peri, postoperative and laboratory data were extracted from each patient's medical records.

**Results:** 60 patients were operated minimally invasively in this period. 52 males and 8 females. 54 years is the mean age. MICS CABG n=29 MVR n=15 AVR n=9 ASD n=4 VSD n=1, DVR n=1 LA myxoma n=1 Conversion rate n=2.

**Conclusion:** Despite the small sample size, the minimal invasive approach is acceptable with encouraging results. The main advantage of this approach is related to the reduction of postoperative pain and pulmonary complications.

Keywords: MICS-CABG, Mini MVR, Mini AVR

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## **Results Off-Pump Coronary Artery Bypass Through Ministernotomy at Patients With Diabetes Mellitus**

## Abstract

**Aim:** To Estimation of the direct results off-pump coronary artery bypass through ministernotomy at patients with diabetes mellitus.

**Material and methods:** We have performed 40 operations off-pump coronary artery bypass. All operations were performed through ministernotomy with the using myocardial stabilizer. The age of patients varies from 32 to 60 years old. All patients were male. Unstable angina was diagnosed at 15 (37,5%) patients, and the rest of 25 (62,5%) patients had different class of stable angina. Arterial hypertension at 38 patients, coronary insufficiency at 11 patients. 34 patients had myocardial infarction in the anamnesis.

ECG data revealed ischemia at 25 patients. EchoCG: left ventricle ejection fraction under 40% at patients, under 50% at 22 patients and the rest of patients had a 55%. Blood glucose level was varied from 8 to 15 mmol/L and average mean composed of 11,2 mmol/L.

Aniography data revealed single-vessel disease at 25 cases and the other 15 patients had double-vessel disease.

**Results:** In all cases performed off-pump coronary artery bypass grafting. The use of internal mammary artery at 38 cases. By the means of reducing complications related to the diabetes mellitus in all cases performed inferior L-shaped ministernotomy.

After operation patients were extubated from 3 to 4 hours (average mean 3,4 hours). Mortality was 0%. After operation all patients were prescribed insulin infusion. Ejection fraction by EchoCG increased up to 6,65% averagely, at 35 (90%) cases were revealed improvement on coronary blood supply by ECG data. There wasn't revealed purulent-inflammatory complications at the nearest-term outcome after operation.

**Conclusion:** Off-pump coronary artery bypass through ministernotomy at patients with diabetes mellitus in accordance with the insulin infusion reduces risk of intraand postoperative complications such as complications of central nervous system and purulent-inflammatory processes.

Keywords: Coronary artery by-pass, off-pump, mini-sternotomy, diabetes mellitus

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## Direct Results of Opcab, in Patients with Severe Left Ventricle Dysfunction and Severe Concomitant Diseases

## Abstract

Actuality: Off-pump coronary artery bypass (OPCAB) is justified as a pursuit of the further diminution of perioperative complications frequency in patients with severe left ventricle dysfunction and heavy concomitant diseases expanding the list of indications to myocardial revascularization.

**Aim:** To ameliorate the results of OPCAB and work out surgical approach standards for patients with severe left ventricle dysfunction and heavy concomitant diseases.

Material and methods: In a group were enrolled 44 patients undergone OPCAB. The median age was 48.7±8.1 years. 40 patients were male and the rest 4 were female. 17 patients were defined as angina on exertion of FC III, 7 patients were considered as FC IV, 16 patients were determined as progressive stenocardia, 2 patients were identified as early postinfarction stenocardia, 1 patient was registered as unstable stenocardia, postinfarction cardiosclerosis was developed in 34 patients, left ventricle aneurism was disclosed in 4 patients, diabetes mellitus was revealed in 9 patients. Regarding to echocardiography (EchoCG) results myocardial contractility was <35% in 4 patients, approximately 40-50% was in 19 patients, >55% was in the rest 17 patients. 39 patients were performed OPCAB without cardiopulmonary bypass (CPB), whereas 5 patients were carried out OPCAB under conditions of CPB. The revascularization of one artery was accomplished in 33 patients, while two arteries in 4 patients, three arteries in 2 patients. Concerning to the coronaroventriculography data the lesion of proximal 1/3 of left anterior descending artery (LAD) was unraveled in 32 patients, whereas medium 1/3 of LAD was defeated in 12 and proximal 1/3 of right coronary artery (RCA) was involved in 3, while the lesion of distal 1/3 of RCA was detected in 3, on top of that the impairment of proximal 1/3 of diagonal branch (DB) was found in 2, medium 1/3of the latter artery was defeated in 1, as the involvement of proximal 1/3 of circumflex branch was identified in 1. For the purpose of LAD revascularization left internal mammary artery (LIMA) was overlaid in 37 cases, whereas in 8 cases saphenous vein grafts were applied. Moreover, both LIMA was consumed in 4 patients. LAD was replaced in all cases, DB was rearranged in 3 cases, obtuse margin-1 in 1 patient, as RCA in 3 and posterior descending artery in 3 cases.

**Results:** Fatal outcome was observed in 1 (2.2%) patient undergone OPCAB under conditions of CPB and against the background of heavy accompanying pathology and severe left ventricle dysfunction (ejection fraction <35%). The patient succumbed to the cause of thromboembolism complications at 8 days after surgery. Clinical findings improved in the rest patients: retrosternal pain absence, in terms of EcoCG data myocardial contractility surged on the average per  $4.1\pm0.34\%$ , referring to electrocardiography issue the amelioration of coronary circulation was observed in 39 (88.7%). All patients was extubated at 6-8 hours after OPCAB, at the mean it equaled

to  $6.4\pm0.14$  hours, while under conditions of CPB it matched up to  $12\pm0,5$  hours. Hospital stay period was at an average 5-7 days after OPCAB, as under conditions of CPB conformably 10-12 days.

**Conclusion:** OPCAB pools the best outcomes with minimal risks of fatal cardiac complications following surgical treatment standards and the option of approach in regard to aforementioned category of patients. OPCAB under conditions of CPB is considered as an alternative way for the patients with severe left ventricle dysfunction and heavy concomitant diseases.

Keywords: Coronary artery by-pass, off-pump, low ejection fraction

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## **Robotic Repair of Atrial Septal Defect with Partial Pulmonary Venous Return Anomaly: Our 5 Year Experience**

### Abstract

**Aim:** Partial pulmonary venous return anomalies (PPVRA) were not considered as a good candidate for robotic surgery in early time of robotic cardiac surgery. In this study, we present our experience in patients undergoing robotic atrial septal defect (ASD) and PPVRA surgery.

**Material and methods:** Between November 2014 and January 2020, data of 21 patients who underwent robotic ASD with PPVRA was collected. Inclusion criterion was presence of right-sided PPVRA with ASD. All operations were performed robotically.

Surgical technique: A single surgical team performed all operations, and all of the patients were elective cases. The daVinci® SI model (Intuitive Surgical Inc.,) was used. Briefly, common femoral vein was used for inferior caval decompression and the right jugular vein was used for superior caval decompression. In these cases, the superior caval cannula was placed more superior than other robotic procedures to allow superior caval clamping. Common femoral artery was used for arterial flow. A 2-3 cm right anterolateral minithoracotomy was performed and the instrument ports were also inserted as usual. Azygos vein and anomalous pulmonary veins were identified with careful dissections. Vacuum-assisted venous drainage was used. Different from other robotic set up, superior caval clamping was performed before aortic cross-clamping (ACC) to overcome the difficulty of obligatory higher caval clamping secondary to anomalous pulmonary veins. The superior caval clamp were inserted between anomalous returning pulmonary vein and azygos vein. After aortic ACC (Chitwood® clamp, Scanlan International Inc.,), cardiac arrest was provided with cardioplegia solution (Custodiol®, Köhler Chemie GmbH, Alsbach Hähnlein, Germany), delivered through a temporary cardioplegia catheter at the proximal part of the ascending aorta. Inferior cava was clamped after cardiac arrest as usual. Following cardiac arrest, atriotomy was performed as usual. In patients with supracardiac PPVRA, incision was advanced towards to vena cava superior (VCS) and the anomalous pulmonary veins (APV). The VCS was incised through the posterior part of sinus node for preventing possible sinus node injury. The ASD and origin of APV were visualised after placement of atrial retractor (Figure A). Atrial septal defect was repaired with an autologous pericardial patch, which was sutured around edges of ASD and origin of APV. This patch allows the APV to drain into the left atrial cavity, while ensures the formation of solid septum (Figure B). After repairing the ASD and confirming of no residual shunts, the caval incision was repaired with another autologous pericardial patch to prevent the potential narrowing of superior vena cava. In patients with intracardiac PPVRA, the right atrium was repaired with primary sutures as usual (Figure C). Temporary pacemaker wires were routinely placed on the diaphragmatic side of right ventricle. A control TEE was performed on all patients in the operating room immediately before terminating surgery. The operation was terminated with standardised techniques.

**Results:** The mean age of patients was 26.7±10.3 years. Seventeen patients (81%) had superior-caval ASD with supracardiac PPVRA and double-patch technique was used. Four patients had inferior-caval ASD with intracardiac PPVRA and singlepatch technique was preferred. Cross-clamp time and cardiopulmonary bypass time were 92.8±29.6 and 127.8±38.1, respectively. There was no mortality. One patient had atrioventricular-block and required pacemaker.

Conclusion: Robotic repair of ASD with PPVRA is feasible and effective method as an alternative to conventional surgery.

Keywords: Robotic atrial septal defect surgery, robotic cardiac surgery, robotic pulmonary venous return anomaly surgery



**Figure 1.** Intraoperative views: A- ASD localization, superior caval type. B-diagnosis of ASD with the first pericardial patch. C- complete closure of the ASD with a second pericardial patch

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## Surgical Treatment of Cardiopericardial Echinococcosis

### Abstract

In the article there was reviewed results of diagnostics metods and surgical service 73 patients with echinococcosis of heart. The patients were shared on two groups depending on nature of involvement: the 1st group — it was insulated ehinococcosis of heart/pericardium. The 2d group — it was combined ehinococcosis of heart and organs — target (lungs or liver). Basic diagnostic technique was echocardiogram and MRI. In 75% case the patients were operated in cardiopulmonary bypass; in 25% - without recourse cardiopulmonary bypass. Postoperative lethality was 6,8%. Spontaneous perforation and anaphylactic shock were observed in 4,3% cases. Among not fatal complication there often were observed rhytm disturbance.

Keywords: Echinococcosis of heart, cardiopulmonary bypass, surgical treatment

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## Surgical Treatment of Combined Echinococcosis of Heart and Other Organs – Target (Lungs or Liver)

## Abstract

In the article there was reviewed results of diagnostics methods and surgical service 31 patients with echinococcosis of heart. Basic diagnostic technique was echocardiogram and MRI. In 34,6% case the patients were operated under cardiopulmonary bypass; in 64,4% - without cardiopulmonary bypass. Postoperative mortality was 0%. Spontaneous perforation and anaphylactic shock were observed in 3,5% cases. Among not fatal complication there often were observed rhythm disturbance.

Keywords: Echinococcosis of heart, cardiopulmonary bypass, surgical treatment

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## Surgical Treatment of Hepatocardiac and Cardiopulmonal Echinococcosis

## Abstract

In the article there was reviewed results of diagnostics methods and surgical service 31 patients with echinococcosis of heart. Basic diagnostic technique was echocardiogram and MRI. In 34,6% case the patients were operated under cardiopulmonary bypass; in 64,4% - without cardiopulmonary bypass. Postoperative mortality was 0%. Spontaneous perforation and anaphylactic shock were observed in 3,5% cases. Among not fatal complication there often were observed rhythm disturbance.

Keywords: Echinococcosis of heart, cardiopulmonary bypass, surgical treatment

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