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ROYAL CARE HOSPITALS
making life better

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- **Editor & Publisher**

Dr. K. Madeswaran

Chairman - Consultant Neuro & Spine Surgeon

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CHAIRMAN'S COLUMN

Dear friends,

As we step into a new quarter, I extend my heartfelt gratitude to every member of the Royalcare team — doctors, nurses, paramedics, administrators, and support staff — for your unwavering commitment to excellence and compassionate care. Your dedication continues to define our identity as one of the region's most trusted healthcare institution.

In the words of **Maya Angelou**,
"People will forget what you said, people will forget what you did, but people will never forget how you made them feel."

At Royalcare, we do more than treat ailments — we touch lives. Every patient who walks through our doors deserves the dignity, empathy, and clinical excellence that we proudly offer. Our mission has always been rooted in delivering **quality healthcare with a human touch**, and I am proud of the milestones we continue to achieve in that journey.

This quarter, we've introduced new specialty services, advanced technologies, and enhanced patient care protocols — all part of our ongoing efforts to stay ahead in a fast-evolving medical landscape. The healthcare sector is transforming, and we must remain agile, innovative, and patient-centric in everything we do.

Let us also draw inspiration from **Steve Jobs**, who once said:

"The only way to do great work is to love what you do."

Let us carry this spirit forward as we continue to grow, learn, and lead. In the face of challenges, let us stand united — not just as professionals, but as a family bound by purpose. Our strength lies not just in the technology we use, but in the trust we build and the lives we touch.

Let us continue to work with passion, uphold the highest standards, and strive for excellence. I encourage each one of you to keep learning, improving, and contributing to our shared vision: to make Royalcare a **centre of healthcare excellence and hope** for every life we touch.

Wishing you a fulfilling and successful quarter ahead.

With warm regards

Dr. K. Madeswaran
Founder Chairman

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From The EDITOR'S DESK

"Jump in first, figure out on the way,
perfect does not exist, start rough, just start"
- Arthur Nash

The hospital is growing in leaps and bounds, and we are in the process of opening up the new and improved rooms and many more facilities. The construction is going on in full swing, and we aim to complete it within the next 6 months.

The Royal Care BA and MI room was inaugurated at the Coimbatore Airport to serve the public, and the helpline for blood donors and awareness on platelets and SDP was done on World Blood Donor Day. We also celebrated World Hand Hygiene Day by spreading awareness amongst the staff and public.

The hospital is committed to the dissemination of knowledge, and there were many CME programs conducted by the team at Ooty, Dindigul, and Gandhipuram. Our consultants delivered wellness lectures to the public.

The hospital, in association with Rotary Club Coimbatore, conducted a medical camp in Palakkad and vaccinated 100 more young girls against cervical cancer at our premises. International Yoga Day was celebrated with great enthusiasm by the public and also our staff.

Royal Care also completed 175 MRgFUS cases, which is a record for any hospital around the world. It has benefited many patients with Parkinsonism and essential tremors. The hospital also got multiple certifications like CAHO Endosafe, iComply South Champion, etc.

We congratulate our consultants who were invited as faculty at national and international lectures for their phenomenal achievements. We welcome the new team of consultants who have joined the ever-growingRoyal Care Hospital medical fraternity and wish them success in their endeavors. In this volume, we have articles on robotic surgery, mitral valve replacement, MICS, and burn scar management.

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MITRAL VALVE REPLACEMENT WITH CORONARY REVASCULARIZATION IN PATIENTS WITH SEVERE MR FOLLOWING MI– RESULTS AT 7 YEARS

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Abstract

Mitral regurgitation following myocardial infarction occurs in 10-15% of patients. Many studies have reported an increase in mortality and morbidity for those undergoing Mitral valve replacement(MVR) and Coronary artery bypass grafting (CABG).Chordal sparing MVR yields excellent outcome and a long event free survival

Objective- To assess the improvement in LV dimensions and function ,progression of heart failure and event free survival following CABG + MVR

Methods – We conducted a retrospective analysis of 92 patients who underwent CABG + MVR between 2013-2024. Pre operative and postoperative data on LV function, LV dimensions, PAH,and heart failure ,zone of infarct were collected by echocardiogram, Return to normal activities, morbidity and mortality were studied

Results – Significant number of patients had improvement in LV function , regression of LV dimensions, and heart failure. 85% (n=78) remained in NYHA II, 5% (n=9) early mortality was noted, 10 % (n=5)had progression of heart failure which was managed medically.

Conclusion : CABG + MVR with chordal preservation yielded a good outcome in terms of event free survival, regression of heart failure and LV dimensions in patients with MR following MI

Introduction:

Mitral regurgitation (MR) following myocardial infarction (MI) is noted in 10-15 % patients. It is more common in patients with inferior and lateral wall infarction namely Right Coronary Artery (RCA) and Left circumflex artery (LCX) territories. It is seldom seen in isolated anterior wall MI. It is a consequence of altered LV geometry,dilatation of mitral annulus, rupture of chordae/ papillary muscles , elongation of chordae and papillary muscles,leaflet tethering.Ischaemic MR is classified as Type IIb according to Carpentier Edwards classification of MR.In patients with reversible ischaemic myocardium CABG may ameliorate MR and restore the valve function,however 40% of patients continue to have progressive MR and altered LV geometry

Multiple studies have been conducted with isolated CABG, CABG with mitral valve repair and replacement. Despite a debatable scenario we preferred mitral valve replacement to achieve a better long term correction, avoiding reoperation, shorter operating time.Post operative recurrence of MR following repair amounts to 32% as enunciated in studies across the globe.

Material and Methods

We conducted a retrospective analysis of 92 patient records who underwent CABG + MVR. All patients had acute MI and subsequent mitral

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regurgitation. Patients with pre existing mitral valve disease from rheumatic and degenerative valve disorders were excluded in this study.Men were71 women were 21. Age ranged between 35-78yrs with a mean age of 56yrs. All patients had MI of which 32 % n = 29had NSTEMI, 68 % n = 63had STEMI. Thrombosuction was done in 33 % n= 30 patients. Distribution of zone of infarct is illustrated in the graph below.

Preoperative echocardiographic data -

LA size	Ann.dilatn.	EF	RWMA	MR Jet	Leaflet tethering	Chordal rupture	Pap.Muscle rupture
2.8 - 4.4	6pts	22-38% mean 26%	28pts	4.0-7.8cmsq	5pts	4pts	2pts

Left atrial dimension ranged betweer 2.8-4.4cm mean of 3.4cm, Annular dilatation was noted in 6 pts, EF ranged between 22-38% mean26%,MR jet area ranged between 4.0-6.2cmsq . Leaflet tethering of P3 was noted in 5 patients,Major chordae rupture was present in 4 pts and posterior papillary muscle rupture was seen in 2 patients.

Severe mitral regurgitation was defined as an effective regurgitant orifice area of >0.4cmsq. All patients had a nucleotide viability scan,and those with viable myocardium were taken up for surgery

Data collected include lv dimensions systolic and diastolic, ejection fraction, annulus diameter,presence of PAH , associated tricuspid regurgitation, and structural changes viz chordal rupture, paillary muscle rupture. Adverse events as stroke, LV failure,sepsis,stroke and re-operations were assessed

Surgical procedure

All patients underwent CABG + MVR through midline sternotomy, standard bicaval cannulation, Mild hypothermic cardiopulmonary bypass, PA was vented . Construction of distal anastomosis was done first as pump assisted beating heartprocedure. Once distal anastamosis were done hypothermic cardioplegic arrest was achieved following antegrade and retrograde infusionof cardioplegia with aorta duly clamped. We used multiple doses of Blood cardioplegia admixed with St.Thomas solution at 4:1 ratio.

Left atrium was approached transeptally. Mitral valve was inspected , Annular sutures were taken with 2-0 pledgetted polyester plicating the leaflet tissue and preserving the native valve. Mechanical prosthesis was implanted in % of patients taking care that no chordae interfered in leaflet mobility. Few minor chordae had to be snipped off in a small number of patients who had limitation in leaflet mobility. Elderly patients received a bio prosthesis. 4 patients had thickened anterior leaflet which would narrow down the annulus diameter on plication. A window of AML tissue was excised and plicating annular sutures were taken to implant the prosthesis.Atrial Septum was closed in two layers with 4-0 polypropylene . Aorta was declamped and heart was allowed to beat until complete rewarming, during which time proximal anastomosis was done on partial aortic clamp Intra operative TEE confirmed normal prosthetic valve function, absent paravalvular leak.

3 patients needed Balloon pump support while weaning from CPB and gradually weaned off in the ICU after 48hrs.All patients were ventilated for 24 hours prior to weaning. 2 patients needed reopening forpost operative bleeding. Elective IABP was inserted in 3 patients while weaning from CPB. The average ICU stay was 3 days,and were discharged on day 9 from the hospital. 5 patients died in the early postoperative period due to intractable arrythmias and RV dysfunction.

Follow up echo was done at regular intervals and data was collected and analysed

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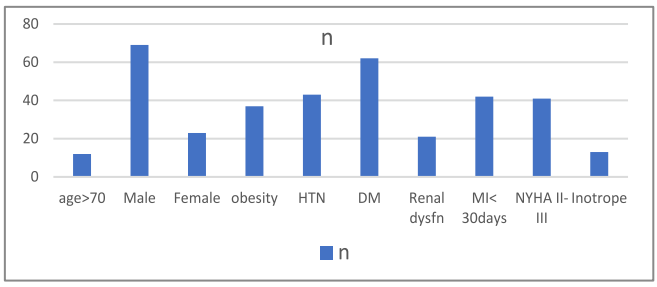
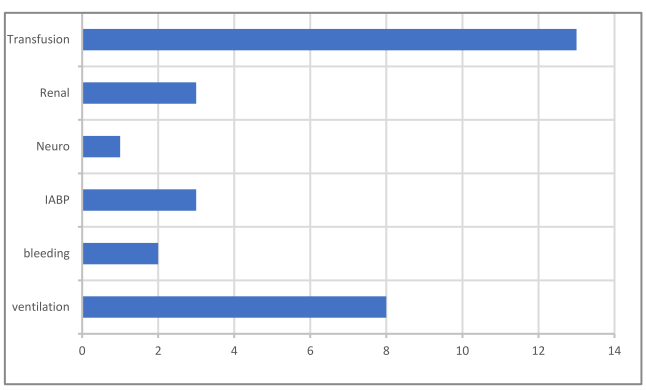


CABG

No of grafts	2 / >2	43
	3 / >3	34
	4 / >4	15
	LIMA	12
	LRA	34
	GSV	46
CPB time	1hour	14
	1-2 hours	36
	> 2 hours	42
Aortic cross clamp time	< 1hour	43
	1-2 hours	29
	> 2 hours	20

POST OPERATIVE



CLINICAL END POINT

	30 Days	6 Months
Mortality (Early RV & LV failure, Arrhythmias, Sepsis)	5	Nil
Stroke	Nil	Nil
Worsening of NYHA class of II	Nil	Nil
Mitral Valve Re operation	Nil	Nil

SERIOUS ADVERSE EVENT

	30 Days	6 Months
Heart failure (Elderly Tissue valve patients, I.e. 65 - 77 years)	3	6
Stroke	Nil	Nil
Renal Failure	1	Nil
Sepsis	1	Nil
Respiratory Failure	1	Nil
Bleeding	2	Nil

HOSPITALIZATION

	30 Days	Months 6
Any Re hospitalization	Nil	Nil
Readmission for Cardiovascular disease	Nil	Nil

Conduits

LIMA:-Left Internal mammary Artery

LRA :- Left Radial Artery

GSV:-Great Saphenous vein

LIMA	12
LIMA + LRA	34
LIMA + GSV	46

Variables

AWMI : - Anterior wall Myocardial infraction

ALWMI : - Anterolateral wall Myocardial infraction

ILWMI : - Inferolateral wall Myocardial infraction

IPWMI : - Inferoposterior wall Myocardial infraction

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Acute STEMI		NSTEMI
AWMI	9	16
ALWMI	26	
ILWMI	28	
IPWMI	13	

	Pre operative	Post operative
EF	25%-30%	40%-45%
LA size	3.5 cm	3 cm
MR jet area	> 8	No paravalvular leak
LVIDd	5.5 cm	4.8 cm
LVIDs	5 cm	4 cm

Tissue valve	Mechanical valve	
12	80	
	SJM - 66	Others - 14

Discussion:

Ischaemic mitral regurgitation (IMR) is seen in 10-15% cases with acute MI. The diagnosis is usually by clinical setting ,Transthoracic and Transoesophageal echo. Acute MR has severe hemodynamic compromise needing high inotropic support and IABP. Acute volume overload of the LV leads to altered lv wall tension , altering Frank-Starling principle and eventually Acute LV failure. Early intervention has yielded good results as enunciated in our study. Delay in definitive therapy leads to multiorgan dysfunction due to low cardiac output which accounts to a mortality of 85%. CABG alone does not suffice as progression to severe MR is inevitable needing secondary intervention which increases the surgical mortality. Some studies have shown an increase in post procedural complications probably due to increased ischaemic time, whereas in our data we found a majority of patients with an ischaemic time of 1 hour.

Mitral valve repair has shown to have varied results depending on the LV remodelling post procedure and Hemodynamics pre and postoperatively. In our study we encountered a surgical mortality of 4.6% n=5patients which is comparable with data available. According to our data we have found a significant improvement in LV function, regression of LV dimension and return to activity . We used TTK Chitra Mechanical prosthesis in most of our patients for its soft and pliable sewing ring which makes the tying of sutures without much force.

Conclusion:

Mitral valve replacement done as a concomitant procedure with CABG for acute severe MR yields good results and remains a definitive therapy for acute severe MR. The choice of prosthesis may vary between different centres.

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"AN ADVANCEMENT - INITIALLY CONSIDERED AN EXPENSIVE SURGERY, NOW REDUCES COST"

A detailed review of 10 Recent surgeries on Cost benefit analysis of Robotic Surgery vs. Laparoscopic Hernia Surgery

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Abstract:

Hernia repair has traditionally been performed using open or laparoscopic techniques, with the latter requiring fixation devices such as tackers, significantly increasing costs. Robotic-assisted hernia repair eliminates the need for tackers by utilizing precise suturing with robotic arms. This study analyzes the cost differences and overall clinical outcomes, including pain scores, ileus due to pain, discharge days, and patient benefits, between laparoscopic and robotic hernia repairs over ten recent cases, demonstrating a substantial reduction in surgical expenses and improved patient recovery with robotic techniques.

Introduction: Minimally invasive hernia repair has evolved with the introduction of robotic-assisted surgery, initially perceived as an expensive alternative to laparoscopic surgery. However, with improvements in surgical techniques& reduced time due to increasing experience, robotic surgery has proven to reduce overall costs by eliminating the need for expensive fixation devices while also improving patient outcomes. This study aims to evaluate the cost-effectiveness and overall benefits of robotic surgery compared to laparoscopic surgery in hernia repair, particularly emphasizing pain management, ileus prevention, early mobilization, and shorter hospital stays.

Methods:

A retrospective analysis of ten patients (five laparoscopic and five robotic hernia repair cases) was conducted. The following parameters were analyzed:

- Average procedural costs per case (excluding hospital stay and anesthesia charges)
- Postoperative pain scores (VAS scale at 24 hours, 3 days, and 7 days)
- Incidence of postoperative ileus
- Length of hospital stay
- Recovery and return-to-activity time

Results:

Cost Analysis (Per Case Comparison)

Laparoscopic Surgery Costs (Average Per Case):

- OT Charges + Advanced Laparoscopy Set Expenses + Laparoscopic Surgery Manpower : 60,000
- Surgery Consumables : 15,000
- Mesh : 30,000
- Tackers for Mesh Fixation : 40,000
- Total : 1,45,000
- Overall Out-of-Pocket Expenses (Including Extended Stay & Additional Analgesics): 1,60,000

Robotic Surgery Costs (Average Per Case):

- OT Charges + Basic Laparoscopy Set Expenses + Robotic surgery Manpower: 60,000
- Robotic Equipment Expenses: 40,000
- Surgery Consumables: 15,000
- Mesh: 30,000
- Total: 1,45,000
- Overall Out-of-Pocket Expenses (Including Extended Stay & Additional Analgesics): 1,55,000

Over all final Outcome and major complications rates were similar in both types of surgeries.
But there was difference in pain scores and postoperative ileus rates.
Statistical Comparison of Postoperative Pain (VAS Score Analysis for 5 Cases Each)

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Time	Laparoscopic Surgery (Mean ± SD)	Robotic Surgery (Mean ± SD)
24 hours	6.5 ± 1.2	4.0 ± 1.0
3 days	4.8 ± 1.0	2.5 ± 0.8
7 days	2.2 ± 0.8	1.0 ± 0.5

Statistical analysis revealed a **20-40% reduction in pain scores** at all time points in robotic surgery cases compared to laparoscopic surgery.

Incidence of Postoperative Ileus (For 5 Cases Each)

Parameter	Laparoscopic Surgery	Robotic Surgery
Delayed Bowel Movement (>24h)	2 out of 5 (40%)	1 out of 5 (20%)
Severe Ileus (>48h)	1 out of 5 (20%)	0 out of 5 (0%)

A significant reduction in ileus incidence was observed in robotic cases due to **lower postoperative pain and reduced opioid consumption.**

Hospital Stay & Recovery (For 5 Cases Each)

Parameter	Laparoscopic Surgery	Robotic Surgery
Average Hospital Stay	2.8 days ± 0.5	1.7 days ± 0.3
Return to Normal Activities	15.6 ± 2.1 days	9.8 ± 1.5 days

Robotic surgery patients were **discharged approximately 1 day** earlier on average and returned to normal activities **5-7 days sooner** than laparoscopic surgery patients.

Discussion:

The findings from this 5 vs. 5 case analysis emphasize multiple benefits of robotic-assisted hernia repair:

- **Pain Reduction & Early Mobilization:** Lower pain scores in robotic surgery patients resulted in earlier mobilization, decreasing the risk of complications like deep vein thrombosis and pneumonia.
- **Lower Risk of Postoperative Ileus:** With a 20% vs. 40% ileus rate, robotic surgery patients demonstrated better gastrointestinal recovery, likely due to decreased opioid use.
- **Shorter Hospital Stay & Faster Recovery:** Patients undergoing robotic surgery experienced a **30% shorter hospital stay** and returned to daily activities **about a week earlier** compared to laparoscopic surgery.
- **Cost Parity with Long-Term Savings:** Although the cost of tackers in laparoscopic surgery is replaced by robotic equipment expenses, the overall cost reductions in robotic surgery are primarily driven by **shorter hospital stays, better pain management, and lower pharmacy expenses.** Additionally, while laparoscopic surgery requires **advanced laparoscopic equipment,** robotic surgery requires only **a basic laparoscopic setup,** effectively offsetting the cost of a trained robotic surgery team. Despite a **no significant difference in out-of-pocket expenses per case,** the overall benefits of **reduced pain, shorter hospitalization and reduced minor complications** suggest long-term economic advantages in robotic surgery.

While robotic systems have an initial capital cost, the improvement in **clinical outcomes, patient satisfaction, and long-term healthcare cost reduction** supports a shift toward robotic-assisted hernia repairs.

Conclusion:

This comparative study of five laparoscopic vs. five robotic hernia surgeries demonstrates that robotic surgery achieves **similar upfront costs** with significant **long-term benefits in pain management, reduced ileus incidence, shorter hospital stays, and faster recovery.** These findings support the wider adoption of robotic-assisted hernia repair as a cost-effective and patient-friendly alternative to traditional laparoscopic approaches. Larger multicenter studies are recommended to validate these findings further.

Keywords : Robotic surgery, laparoscopic hernia repair, cost-effectiveness, postoperative pain, opioid-induced ileus, early mobilization, surgical innovation, recovery time.

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GLIMPSE

TANS 2025 Neuro Conference at Trichy on 11.04.2025

CME Programme at Dindigul on 13.04.2025

Royalcare's BA and MI Room Inauguration at CBE Airport on 15.04.2025

Cholesterol Awareness Health Talk Program at Royalcare on 03.05.2025

World Hand Hygiene Day Awareness Program 05.05.2025

Rotary Medical Camp at Palakad on 18.05.2025

World Blood Donor Day Celebration On 14.06.2025

Cervical Cancer Vaccination Camp On 21.06.2025

International Day of Yoga Celebration 21.06.2025

CME Programme held at Ooty on 22.06.2025

MINIMALLY INVASIVE CARDIAC SURGERY

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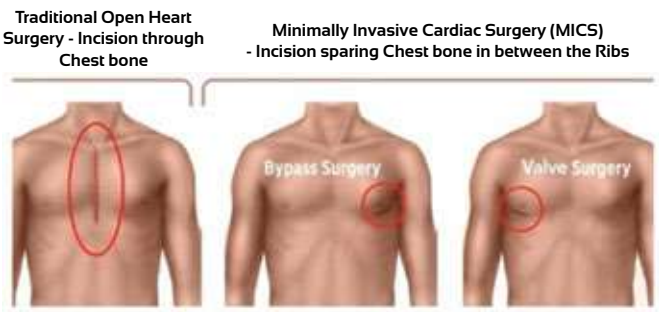
Minimally Invasive Cardiac Surgeon

Introduction

cardiovascular surgery is in the midst of an ongoing evolution in technique. What began in the 1990s with the first reports of minimally invasive valve surgery has spread to influence nearly every type of cardiovascular operation performed today, With increasing patient interest in minimally invasive procedures, it is more important than ever for surgeons to be current on the most common minimally invasive techniques in cardiac surgery. Herein, we will review the most widely used incisions and approaches, with a focus on aortic valve, mitral valve, and coronary artery bypass procedures.



Minimally Invasive Cardiac Surgery - Smaller Incision, smaller scars

Coronary Artery Bypass Grafting

While coronary artery bypass grafting (CABG) remains the gold standard for coronary revascularization, it continues tobe performed primarily through a median sternotomy withlittle change in the overall invasiveness of the

OPEN CABG **MICS CABG**

procedure. When performed through small incisions, including the technical demands of delicate vascular dissection and suturing, the difficulty of exposing multiple areas of the heart, internal mammary arteries, and aorta, and prolonged operating times. Despite these challenges, minimally invasive CABG is growing.

Postoperative photo after off-pump coronary bypass surgery performed through left minithoracotomy

68 year old male, was admitted with shoulder pain for 20 days .On cardiac evaluation and Echo showed LVH with Good LV Systolic Function diagnosed as unstable angina. CAG shows single vessel disease and advised CABG. He underwent MICS CABG Procedure was uneventful.

Patient general condition good and vitals stable and discharged on 4th pod

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Minimaly Invasive coronary Artery Bypass Surgery

MICS CABG is a beating heart, multi-vessel CABG procedure in which the anastomoses are performed under direct vision through an anterolateral mini-thoracotomy. The internal mammary artery (IMA) harvest can be performed under direct vision, with video assistance, or robotically. Additionally, in order to achieve complete revascularization, a hybrid approach, or pump-assisted beating heart approach, can be employed

Potential Benefits of MICS CABG:

Improved satisfaction among patients

- Complete revascularization can be achieved through a small thoracotomy
- Proven mid-term LIMA/LAD patency
- Comparable clinical outcomes to OPCAB

For the Patient:

- Shorter hospital stay
- Faster return to daily living
- Better cosmesis
- No sternotomy, no risk of a sternal wound infection

1. Patient Selection/Inclusion Criteria

- Left main coronary artery disease
- Triple vessel disease
- Complex proximal left sided lesions with or without large branch involvement

Comorbidities: Includes patients who are at a high risk for problems with median sternotomy

- Long-term steroid use
- Severe chronic obstructive pulmonary disease (COPD)
- Need for other major operative procedure
- Patients with arthritic or orthopedic problems

Patients who want the procedure, are active, and seek out less invasive surgery options

2. Contraindications

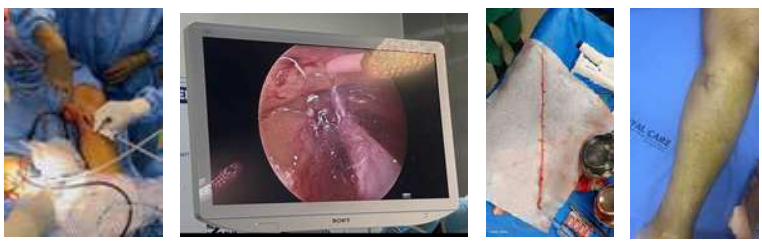
- Emergency cases
- Patients with hemodynamic instability

Potential Contraindications:

- Previous CABG surgery
- Morbid obesity
- Patients with postero-lateral branch disease - Ejection Fraction < 20%
- Patients with peripheral vascular disease (PVD) - Moderate to severe aortic insufficiency

Thoracotomy/Incisions

- The "window incision" refers to the skin incision and the intercostal incision together.
- The window incision is a 5-cm to 7-cm intercostal incision in the 4th ICS
- Male patients: Over the 4th intercostal space (ICS)
- **Female patients :** Inframammary
- In some patients, this could be the 5th ICS, depending on the location of the apex of the heart.
- While making the window incision, deflate the left lung.



ENDOSCOPIC VEIN HARVESTING TECHNIQUE

OPEN VEIN HARVESTING INCISIONS

.MITRAL VALVE APPROACHES

Developments in minimally invasive mitral surgery began in the mid-1990s with the pioneering work of Cohn (1), Cosgrove (2), Navia (3), and others. Technological

Carpentier-Loulmet Classificaion of Degrees of Surgical Invasiveness

Level I

- Mini-incision (10–12 cm) Direct vision

Level II

- Micro-incision (4–6 cm) Video-assisted

Level III

- Micro or port incision (1–2 cm) Video-directed

Level IV

- Port incision with robotic instruments Video-directed

Although a myriad of approaches have arisen, these procedures can be best classified using the Carpentier/ Loulmet nomenclature, which is based on incision size and visualization methods.

Right minithoracotomy for mitral valve is the most widely used in current clinical practice.

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Right Minithoracotomy

The right minithoracotomy has been established as the most commonly used incision for minimally invasive mitral valve surgery and is now the standard minimally invasive approach at most centers. Multiple retro spective series have assessed outcomes following mitral valve surgery via right minithoracotomy, with reported advantages including a more en face view of the valve, a decreased risk of infection due to the well-vascularized overlying pectoralis muscle and avoidance of sternaldivision, shorter hospital length of stay, decreased postoperative bleeding, and improved postoperative pain.

To approach the mitral valve via a right minithoracotomy, a4- to 6-cm inframammary incision is made in the midaxillary line for primary access and augmented as needed with stab incisions. The ideal location to maximize working distance and valve visualization can be modified according to surgeon preference.

PERIPHERAL FEMORAL CANNULATION FOR CARDIOPULMONARY BYPASS

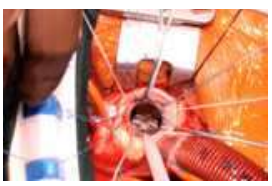
Alternative cannulation strategies include an entirely peripheral and a hybrid design, where the aortic and venous cannulas are peripheral and the antegrade and retrograde cardioplegia cannulas remain central.

AORTIC VALVE APPROACHES

Aortic valve disease is a common indication for cardiac surgery, with the prevalence of aortic stenosis. Minimally invasive approaches to the aortic valve have evolved significantly since the first reports in the 1990s and today are safely and consistently performed at many centers.

Right Anterior Thoracotomy

Another minimally invasive approach to the aortic valve isthe right anterior thoracotomy .This procedure is more commonly used for operations on the mitral valve it can be used for aortic valve surgery as well. Although this approach avoids sternotomy, it provides inferior exposure in most cases since the aortic root and valve are more difficult to see and reach from this angle. Additionally, It usually requires more sophisticated and active transesophageal echocardiogram (TEE) guidance, at the very least for peripheral cannulation and in some cases for peripheral insertion of retrograde cardioplegia catheters or pulmonary vein.



Hemisternotomy

While minimally invasive approaches to the aortic valve can be accomplished with a wide range of incisions, the most commonly used approach is a hemisternotomy, usually extended in a J-shape into the right fourth intercostal space. In this technique, a midline incision is made at the sternomanubrial junction and extended inferiorly 4 to 5 cm.

While extending the incision into the fourth intercostal spaceis the most common approach, the specific intercostal space used can and should be tailored to the patient.

51 years old female presented with complaints of shortness of breath, followed by chest pain, burning sensation with sweating and giddiness for the past 6 months. History of dyspnoea on exertion in nature settled with 20 minutes at rest. Diagnosed as severe aortic stenosis. CAG which revealed minor CAD. She was taken up for MINIMALLY INVASIVEaortic valve replacement on 22.03.2025. Post operative period was uneventful. She improved well and mobilised earlier and discharged in a clinically stable condition on 4th POD.

Conclusion

Since 1990s, minimally invasive techniques have been applied to a wide range of cardiac procedures. In the intervening 3 decades, numerous literature have demonstrated the feasibility, safety, and efficacy of minimally invasive cardiac surgery and supported its integration into clinical practice. With increasing patient demand for less invasive surgical options . In the future, the continued evolution of endoscopic, robotic, and percutaneous technologies will decrease operative trauma.

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- International Gold Standard in rehabilitation care
- Patient-Centered Practices that improve outcomes
- Rigorous Quality Standards across safety, ethics, and clinical care
- Continuous Improvement Culture

This accreditation reflects our unwavering commitment to providing world-class rehabilitative care — and places India on the global map for excellence in rehabilitation.

Proud to be the iComply South Zone Champion!

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At Royal Care Super Speciality Hospital, we believe patient safety is non-negotiable. Our dedication to maintaining the highest levels of hygiene, compliance, and quality has been recognized nationally — earning us the prestigious iComply South Zone Winner Award.

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- Rigorous Infection Control: We follow strict protocols to prevent infections and keep you safe.
- Digital Compliance Monitoring: Using the advanced iComply system, our safety practices are tracked in real time, ensuring transparency and accountability.
- Continuous Improvement: We regularly audit and upgrade our processes, always aiming for excellence.
- Highly Trained Staff: Our teams are certified and committed to delivering safe, compassionate care.
- Patient-Centered Approach: Your health, comfort, and trust guide everything we do.

We Are CAHO EndoSafe Certified!

Safe Scopes. Safe Hands. Safe You.

What is EndoSafe?

A national certification by CAHO (Consortium of Accredited Healthcare Organizations) that ensures endoscopy procedures are 100% safe and infection-free.

Why Choose Us?

- Safely cleaned & disinfected endoscopes
- Trained & certified staff
- Trusted by a national quality body
- Focused on your safety every step of the way

First in India to successfully complete 175 Magnetic Resonance-guided Focused Ultrasound (MRgFUS) procedures at Royal Care Super Speciality Hospital, Coimbatore.

Dr. K. Madeswaran, our visionary Chairman, believed in the revolutionary technology to treat Parkinson's Disease and Essential Tremors non-invasively, and brought the first system to India.

Thanks to our entire MRgFUS team, support staff, referring physicians, patients, and INSIGHTEC for their unconditional support.

" BEYOND THE SCAR "

Dr. T. Krishnakumar

MS, MCH, DNB (Plastic Surgery).,
Consultant Plastic, Burns and Diabetic Foot Reconstructive Surgeon

Dr. M. N. Sivakumar

MBBS, DA, DNB, IDCCM, EDIC, FICCM.,
Head - Institute of Critical Care Medicine

Introduction :

Burn injuries are a significant public health problem in India, with an estimated 6 to 7 million new cases each year, 1.4 lakhs deaths, and 2.4 lakhs people suffering from disability. Lack of specialized Burn care units and a multi-disciplinary team approach is a reason for increased mortality and morbidity in burns. Burns with a total body surface area of more than 40% in adults and more than 60% in children are at high risk of mortality and morbidity even in highly specialized centers.

Multi-disciplinary Team Approach :

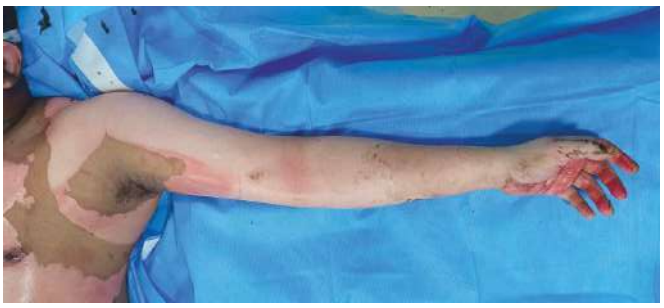
Advances in Burn care have been colossal, but while extra work is needed, it is clear that organised effort of the burn team make improvement in survival rate and quality of life in Burn patients. The multi-disciplinary team includes Plastic surgeons, Intensivists, Anaesthesiologists, Staff nurses, Respiratory therapists, Dieticians, Physiotherapists, Psychologists. We at Royal Care Hospital have a dedicated Comprehensive Burn care team for giving a state of art care to burn patients.

Recent Advances :

With the advancement of dedicated Burns team, Early excision of burns and split skin grafting (SSG), silver dressings, Dermal substitutes, good rehabilitation protocol, there is a drastic reduction in burns mortality and morbidity.

Case Report :

40-year-old patient was admitted to our hospital with severe burns caused by the explosion of a petrol tank while working. The patient was initially resuscitated in a nearby hospital and referred here. On admission patient was conscious and had second-degree superficial to deep burns involving scalp, face, neck, chest, back, both upper limbs, and right lower limb with inhalational injury (Total Body Surface Area 55%). The patient was initially resuscitated, taken for emergency surgery under anaesthesia, wound wash given, wounds were assessed, and silver dressings applied. The patient was resuscitated and monitored in the ICU with strict isolation and supportive measures. After 48 hours patient was taken for Tangential excision of Burns under anaesthesia, the superficial layer of dermis was removed, and silver dressings were applied, followed up with one to two times a day dressings, with Nutritional care and physiotherapy. On day 5 patient developed sepsis, and cultures revealed Acinetobacter and Pseudomonas infection, and started on



appropriate antibiotics and taken for emergency debridement and wound wash. Once the patient is stabilised, full thickness excision of burns with split skin grafting for both upper limbs and silver dressings for chest done, followed up with dressings and supportive measures.

Allografts and Dermal Substitutes

We have facilities for Allografts and skin substitutes (BTM, MATRIDERM) for immediate coverage of Burn wounds. Recently, we have procured allografts for a patient with 70% burns on an emergency basis from Skin Bank.

Patient recovered well and shifted to the room. Wounds healed well, started on oral diet and mobilized, patient was discharged on 45th day. Followed up with scar massage, physiotherapy, and compression garments.

Conclusion :

Multi-disciplinary team approach and a comprehensive Burn care team play a major role in the survival of burn patients. With recent advances in burns dressings, Early excision and Grafting, and a good Rehabilitation protocol, we can reduce Mortality and Morbidity in Burns patients.

contact@royalcarehospitals.in 0422 - 2227000

welcome

Dr. M. Bhuvaneswaran MM.S. (GEN. SURG.), M.CH. (VASCULAR SURG.).,

Consultant Vascular Surgeon

Dr. M. Bhuvaneswaran completed his MBBS from Coimbatore Medical College in 1998, followed by MS in General Surgery from Karnataka Institute of Medical Sciences, Hubli in 2002, and MCh in Vascular Surgery from Madras Medical College, Chennai in 2006.

He began his surgical career as Registrar in Vascular Surgery at Vijaya Hospitals, Chennai, and KMCH, Coimbatore. He then served as Consultant Vascular Surgeon at KMCH until 2014. He further advanced his expertise with a Fellowship in Vascular Surgery at Doncaster Royal Infirmary, UK (2014–2015), and most recently at Sunshine Coast University Hospital, Queensland, Australia (2024–2025).

Between 2015 and 2024, he practiced as a freelance vascular specialist and visiting consultant to leading institutions including GEM Hospital, Ortho One, Coimbatore Kidney Centre, and Royal Care Hospital. He has now joined our Royal Care as a Consultant Vascular Surgeon.

Dr. Ilango Sethu

MS, MCh (GI and HPB Surgery), ASTS Multiorgan Transplant Fellowship (USA), Pediatric Liver Transplant Fellowship (Japan), FACS

Consultant - HPB and Abdominal Multi-Organ Transplant Surgeon

Completed MBBS from Madurai Medical College, MS in General Surgery from Medical College, Trivandrum, and MCh in GI and HPB Surgery from Madras Medical College. He underwent advanced training in Liver Transplantation at the University of Pittsburgh Medical Center, USA, and Pediatric Liver Transplantation at NCCHD, Tokyo, Japan. He is also a Fellow of the American College of Surgeons (FACS).

Dr. Ilango Sethu has previously led transplant and GI surgery programs at Kauvery Hospital, Fortis Bangalore, MIOT Chennai, and Naruvi Hospital, Vellore. His expertise spans adult and pediatric liver transplantation, renal, pancreas, and small bowel transplantation, as well as complex hepatobiliary and GI oncological surgeries.

Dr. Hemamala MD, DM (Gastroenterology), Transplant Hepatology Fellowship (USA), IDCCM

Consultant - Gastroenterologist and Transplant Hepatologist

Completed MBBS and MD from Madurai Medical College, followed by DM in Medical Gastroenterology from Madras Medical College. She pursued a prestigious ACGME-accredited Fellowship in Transplant Hepatology at the University of Pittsburgh Medical Center, USA. Formerly served as Lead Hepatologist at MIOT Hospital and Consultant at Apollo Hospitals, Chennai. Founder Director of The Liver World, Chennai, with expertise in advanced liver care, liver transplantation, and endoscopic management of GI bleeding.

Dr. G. Pradeep MBBS, DrNB (Cardiothoracic and Vascular Surgery).,

Consultant Lead Surgeon - Heart and Lung Transplantation & Mechanical Circulation (ECMO)

Completed MBBS from Stanley Medical College, Chennai in 2010 and pursued DrNB in Cardiothoracic and Vascular Surgery from Apollo Hospitals, Chennai, under the National Board of Examinations (2012–2017), followed by a one-year senior residency including a focused stint in the Heart and Lung Transplant Unit.

He has served at Fortis Malar Hospital, Chennai (2018–2019), MGM Healthcare, Chennai (2019–2022), and was most recently the Senior Consultant and Program Head for Heart and Lung Transplantation & Mechanical Circulation at PSG Institute of Medical Research, Coimbatore.

He is a member of the expert advisory panel on Heart and Lung Transplantation to the Tamil Nadu State Government and an alumnus of IIM Ahmedabad in Hospital Services and Healthcare Management. Dr. Pradeep is also an accomplished animal researcher and principal investigator in two ongoing projects focused on heart failure management.

Dr.S. Kirubanand MBBS, MD (Anaesthesiology), DM (CTVA)

Consultant Lead Cardiac Anaesthesiologist

Fellowship in Heart and Lung Transplant Anaesthesia & Critical Care (Toronto, Canada)

Dr. S. Kirubanand completed his MBBS from Coimbatore Medical College in 2009, followed by MD in Anaesthesiology from Sanjay Gandhi Postgraduate Institute, Lucknow in 2014. He went on to pursue a DM in Cardiothoracic and Vascular Anaesthesia (CTVA) from Sree Chitra Tirunal Institute of Medical Sciences, Trivandrum, in 2017.

He brings rich international exposure, having completed multiple advanced clinical fellowships in Cardiovascular, Thoracic, and Transplant Anaesthesia and Critical Care at Toronto General Hospital, Canada (2022–2025). He has also served in various academic and clinical roles across prestigious institutions, including CMC Vellore, Narayana Institute of Cardiac Sciences Bengaluru. Before joining Royal Care Super Speciality Hospital, Dr. Kirubanand briefly served as a Consultant in Cardiac Anaesthesia at PSGIMSR, Coimbatore.

Dr. S. Leo Prince Mathan MBBS, MD, DM (Clinical Hematology).,

Consultant Hemato-oncologist and BMT Physician

Dr. S. Leo Prince Mathan completed his MBBS from IRT Perundurai Medical College, Erode in 2012, followed by MD in Pathology from St. John's Medical College, Bangalore in 2015. He then pursued his DM in Clinical Hematology at the renowned Seth GSMC & KEM Hospital, Mumbai, completing in 2020.

He began his academic journey as Assistant Professor in Hemato-Oncology at KEM Hospital, Mumbai (2021–2022), and went on to serve as Senior Registrar at the Comprehensive Thalassemia Care Center, Borivali, where he gained intensive bone marrow transplant experience. He later served as Consultant Hematologist at Rela Institute, Chennai (2022–2023).

Before joining Royal Care, Dr. Leo Prince Mathan worked as a Consultant Hematologist and Assistant Professor in the Department of Hemato-Oncology at PSG Medical College, Coimbatore.

Dr. T. Krishnakumar MS, MCH, DNB (Plastic Surgery).,

Consultant Plastic, Burns, and Diabetic Foot Reconstructive Surgeon

Completed MBBS from Thanjavur Medical College in 2009, and has achieved MS General Surgery from Govt Mohan Kumaramangalam Medical College Salem in 2014 and did Mch Plastic Surgery from Madras Medical college in 2019 and also achieved DNB Plastic surgery in same year and worked as a Registrar in Ganga hospital Coimbatore, and as a Consultant in KMCH Sulur.

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welcome

Dr. Manikandan Ramalingam

MBBS, MS(General Surgery), MCh(Surgical Oncology),

Consultant Surgical Oncologist

Dr. Manikandan Ramalingam completed his MBBS from Madras Medical College in 2011, followed by MS in General Surgery from Thanjavur Medical College in 2017. He went on to pursue MCh in Surgical Oncology at the prestigious Cancer Institute, Adyar, graduating in 2022.

He served as Assistant Professor in the Department of Surgical Oncology at the Cancer Institute, Adyar, from September 2022 to September 2023. Before joining Royal Care Super Speciality Hospital, he worked as a Consultant Surgical Oncologist at Sudha Cancer Centre, Erode.

Dr. S. N. Mohan Kumar

MBBS, MS (ENT), FELLOWSHIP IN COCHLEAR IMPLANT, FELLOWSHIP IN RHINOPLASTY.,

Consultant ENT, Head & Neck Surgeon

Completed MBBS from Sri Manakula Vinayagar Medical College in 2017, achieved post graduation from Pravara Institute of Medical Science, Shirdi, Maharashtra, did senior residency, and was promoted as assistant professor in PIMS.Did fellowship in rhinoplasty, worked in KMCH Medical College, did fellowship in cochlear implant in gmc gandhi Nagar before joining Royal Care.

Dr. R. Ragapriya MBBS, MD, DNB (Biochemistry)

Consultant Biochemist

Dr. R. Ragapriya completed her MBBS from K.A.P. Viswanatham Government Medical College, Tiruchirappalli (2006–2012), and pursued her MD in Biochemistry from PSG Institute of Medical Sciences and Research, Coimbatore (2020–2023). She also earned her DNB in Biochemistry from the National Board of Examinations in March 2025.

She began her career with junior resident roles in cardiology at GKNM Hospital, Coimbatore (2012) and Narayana Hrudalaya, Bangalore (2015–2016), gaining early clinical exposure. She served as Junior Resident and then Senior Resident in Biochemistry at PSG IMSR and KMCH Institute of Health Sciences and Research, Coimbatore, before joining Royal Care.

Dr. S. Saliha Thahsin MD (PMR).,

Consultant Physical Medicine and Rehabilitation

Dr. S. Saliha Thahsin completed her MBBS from Government Medical College, Calicut (2012–2018), followed by an MD in Physical Medicine and Rehabilitation from Madras Medical College (2020–2023), where she was the University Topper and Gold Medallist.

She began her clinical journey with an internship at Calicut Medical College, then served as Junior Resident at Malabar Medical College Hospital and Research Centre, and later as Assistant Surgeon at PHC, Pachapalayam, Tamil Nadu. Dr. Saliha now joins Royal Care Super Speciality Hospital as Consultant in Physical Medicine and Rehabilitation.

Dr. Samhita Ankala MBBS, MD(Radiodiagnosis).,

Consultant Radiologist

Completed MBBS from MVJ Medical College and Research Hospital, Bengaluru, and MD in Radiodiagnosis from Amala Institute of Medical Sciences, Thrissur in 2023. Has worked as a Consultant Radiologist in leading institutions like Lakeshore Hospital, Irinjalakuda Co-operative Hospital with focused experience in breast imaging, cross-sectional imaging, image-guided procedures, and interdisciplinary diagnostic support.

Dr. Sai Kishore MBBS, MD (Nuclear Medicine)

Consultant Nuclear Medicine

Dr. Sai Kishore completed his MBBS from Madras Medical College in 2019 and pursued his MD in Nuclear Medicine from the prestigious JIPMER, graduating in 2024. He worked for 8 months at Manipal TRUtest in Vijayawada before joining Royal Care.

Dr. P. Karthik Kumaran MS, MCh (Cardiothoracic Surgery)

Consultant Cardiothoracic Surgeon

Dr. P. Karthik Kumaran completed his MBBS from PSG Institute of Medical Sciences and Research, Coimbatore (2002–2008), followed by MS in General Surgery from Vinayaka Missions University, Salem (2011–2014). He then pursued his MCh in Cardiothoracic Surgery from the prestigious Sree Chitra Tirunal Institute of Medical Sciences and Technology, Trivandrum (2016–2018).

He has gained rich clinical experience across several reputed institutions, including Manipal Hospital, Salem; Sri Ramakrishna Hospital, Coimbatore; KMCH, Coimbatore; and Sri Sathya Sai Institute, Puttaparthi. He served as Associate Consultant Cardiac Surgeon at Sri Ramakrishna Hospital, Coimbatore (2019–2023) and, most recently, worked as Consultant Cardiothoracic Surgeon at Apollo Hospitals, Madurai, before joining our Royal Care Super Speciality Hospital.

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