



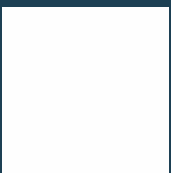
ROYAL CARE
HOSPITALS
making life better



• **Editor & Publisher**

Dr. K. Madeswaran

Chairman - Consultant Neuro & Spine Surgeon



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H-2022-0901



CHAIRMAN'S COLUMN



Dear friends,

As we traverse through the ever-evolving landscape of healthcare, it is imperative that we remain steadfast in our commitment to excellence, innovation, and most importantly, patient care. Today, I wish to share with you some insights and reflections on the current healthcare trends that are shaping our industry, alongside timeless quotes that remind us of the values we hold dear.

Patient-Centric Care: "The good physician treats the disease; the great physician treats the patient who has the disease." - Sir William Osler

In an era of advanced technology and intricate medical procedures, let us not forget the essence of our profession - the human connection. Each patient is not merely a case study but a unique individual deserving of compassion, empathy, and personalized care.

Digital Transformation: "The only way to do great work is to love what you do." - Steve Jobs.

Innovations in healthcare technology continue to revolutionize how we deliver services and engage with patients. Embracing digital transformation enables us to streamline processes, enhance efficiency, and ultimately, improve patient outcomes. Let us approach these advancements with enthusiasm and a willingness to adapt.

Interdisciplinary Collaboration: "Alone we can do so little; together we can do so much." Helen Keller

In our interconnected world, collaboration across disciplines is essential for tackling complex healthcare challenges. By fostering a culture of teamwork and knowledge-sharing, we can harness the collective expertise of diverse professionals to deliver comprehensive care that addresses the holistic needs of our patients.

Health Equity and Access: "Of all the forms of inequality, injustice in healthcare is the most shocking and inhumane." - Martin Luther King Jr.

Healthcare disparities persist, underscoring the need for us to champion health equity and ensure access to quality care for all members of our community. Let us strive to dismantle barriers to healthcare access and work towards building a more inclusive and equitable healthcare system.

As we navigate these trends and challenges, let us remain unwavering in our dedication to upholding the highest standards of healthcare excellence. Together, we have the opportunity to shape the future of healthcare and make a meaningful difference in the lives of those we serve.

Thank you for your unwavering commitment and dedication to our shared mission.

Warm regards

Dr. K. Madeswaran
Founder Chairman

From The **EDITOR'S DESK**

*"Nothing will come of nothing.
Dare mighty things..."*

- William Shakespeare

We have completed 50 percent of the new phase expansion and hope to occupy the new and improved facility within the next 4 to 6 months. This facility shall house more modern operating theatres, ICU, poison center, and more luxurious and also economical rooms.

Bringing more facilities to benefit the people has always been the dream of our chairman and with that, he envisaged the use of a 2-wheeler ambulance as a quick response team to get to the ailing patients to give an immediate first response and stabilize the patient till proper care arrives. This program was launched with the support of eminent personalities.

The Royal Care Institute of Nursing was inaugurated and the lamp lighting function was also conducted with great enthusiasm by the vice chancellor Dr. Narayanasamy and the District Collector Kranti Kumar Pati and was attended by the parents and students with great zeal.

The 7th Annual Day functions – Royal fest was conducted by the hospital and it was a great evening to remember with the chairman and his family participating in the events and also blessing every employee of the hospital with good fortune for the next year. The hospital also conducted many medical camps at TNPL, the Coimbatore airport, and many other places.

The hospital is committed to the dissemination of knowledge and there were many CME programs conducted by the team and our doctors delivered medical lectures for the benefit of general practitioners and specialists. NEOCON 2023, a state-level conference in neonatology had a hands-on session in our hospital. The TIPS – conference on interventional pulmonology was also conducted in our hospital

We congratulate Dr. Kalaivani for being admitted as a fellow in the Association of Minimal Access Surgeons of India and also other doctors who participated in mock drills conducted by the disaster management team. We welcome the new team of consultants who have joined the ever-growing Royal Care Hospital medical fraternity and wish them success in their endeavors.

Editorial Board

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Senior Executive - Marketing



INAUGURATION OF ROYALCARE INSTITUTE OF NURSING



Royalcare Trust proudly inaugurated the Institute of Nursing by organizing an event at Gokulam Park, Coimbatore, on October 4, 2023. Approved by the Government of Tamil Nadu, affiliated with Tamil Nadu Dr. MGR Medical University, and recognized by the



Nursing Council, this institute has begun its journey with 100 B.Sc. Nursing seats and 40 GNM seats, setting a course for excellence in nursing education. Dr. Narayanasamy, Vice-Chancellor of Tamil Nadu Dr. MGR Medical University, graced the occasion as the Chief Guest.





Dr.K.Madeswaran

Managing Trustee, Royal Care Trust
 "We've started this institute to train good nurses for the entire world, not just for Royal Care



Dr. Narayanasamy

VC, Dr. MGR Medical University
 "The care given by the nurses during the pandemic was excellent, dedication, sincerity, and devotion are the three key pillars of nursing care".



Dr. G.Thilagavathy Roy

Principal, Royal Care He Institute of Nursing
 "To the world, you may be just a teacher, but to your students, you're a hero."



Prof. Dr. B. Asokan,

Dean, Royal Care Hospital
 "Humanitarian Touch is Important in the realm of healthcare. "

The healthcare needs of the society change constantly. Among the healthcare professionals meeting the emerging health needs of society, Nurses are ranked first. Preparing young enthusiastic Aspirants of nursing for the quality nursing profession is a dedicated task in the hands of nurse educators. Royal Care Institute of Nursing is one of the best nursing institutions in Coimbatore in terms of faculty, infrastructure, and clinical facilities.

Royal Care Institute of Nursing is functioning under the Royal Care Trust. We believe in the spirit

of caring fellow beings with utmost excellence. Our motto is "committed to excellence".

The student's clinical experience is met in the parent hospital. **Royalcare Super Speciality Hospital is a 500-bed** NABH-accredited hospital. Students learning are facilitated through simulation and demonstration with well-equipped laboratories. College has an excellent, efficient, and highly motivated faculty who plan meticulously all the curricular and co-curricular activities for the students



LAMP LIGHTING CEREMONY

CHIEF GUEST

Thiru. Kranthi Kumar Pati I.A.S.

1st Batch of B.Sc(N) & DGNM

Guest of Honour

Dr. Angela Gnanadurai, M.Sc(N)



ROYAL CARE INSTITUTE OF NURSING LAMP LIGHTING AND OATH TAKING CEREMONY

The lamp lighting ceremony, held as a tribute to Florence Nightingale formally declares the student's entry into the Nursing profession. The lamp lighting and oath-taking ceremony of the first batch of B.Sc Nursing and DGNM students of Royal Care Institute of Nursing was held on 17.2.2024 at Ramlakshmi Auditorium, Coimbatore. Dr.Thilagavathy Roy the principal of the college welcomed the gathering. The program was presided over by Dr.K.Madeswaran, Chairman and managing trustee of Royal care super speciality Hospital and Royal Care Institute of Nursing, Coimbatore. Honourable district collector of Coimbatore Thiru.Kranthi Kumar

Pati was the chief guest of the occasion who emphasized on the demand of the Nursing Profession and uplifted the image of the Profession. The Guest of Honour, Dr. Angela Gnanadurai, Principal of Jubilee Mission College of Nursing, Thrissur passed the light & blessed the young budding nurses and other esteemed invitees from various colleges and hospitals who graced the occasion. It was followed by the oath-taking ceremony which was led by Dr. Thilagavathy Roy the principal of the college. The program was concluded with a vote of thanks delivered by Prof. Mrs. Smitha, vice principal of RCIN.



Honourable District Collector of Coimbatore
Thiru. Kranthi Kumar Pati
Lighting the Lamp





DIFFUSE CALCIFIC CORONARY ARTERY DISEASE - IS MEDICAL THERAPY THE ONLY OPTION?



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MD, DM (Cardio),
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Dr. G. Ramraj
MD, DM (Cardio),
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Introduction: -

Diffuse coronary artery disease with or without calcifications is a challenge to cardiologists and cardiac surgeons.

In vessels with poor distal run-off, coronary artery grafting results in early occlusion and secondary Myocardial infarction (MI). We often come across patients with the diffuse disease and extremely calcified coronaries due to diabetes, long-standing disease, previous PCI or surgery, A significant number are in heart failure despite optimal medical therapy, surgery, or PCI

In such subgroups Multivessel or Endarterectomy with CABG has yielded good results and completeness of revascularization, we share our experience in this article.

Rationale & Indications :-

There are no specific guidelines for Coronary Endarterectomy (CE) with CABG to date, however, anecdotal studies are available. With the aggression in PCI & DES therapy in diffuse CAD widely emerging

Following coronary artery disease, a patient can be sub-grouped into three categories, Those with ischaemic burden, Mechanical issues with heart failure burden and arrhythmic burden. If each

group is analysed to the grass root level it suggests that incomplete revascularization may be the cause. We took this subgroup and subjected it to myocardial viability studies and found that a significant number were in the salvageable group and this prompted us into multivessel endarterectomy with CABG

Material and Methods:

Retrospective analysis of surgical outcome in patients who underwent CE with CABG

Total number of 94 patients

Men – 71. Women- 23

Age range – 31-76 years - Mean 52 years

Risk factors – Diabetes: 68 pts Hypertension: 59 pts

Acute MI – 18pts. Anterior wall – 10pts,
Lateral wall -4pts, Inferior wall – 4 pts

Previous PCI – 12 pts

All patients underwent CE + CABG

Off-pump – 36 pts Pump assisted – 56 pts

IABP: 3 pts

Arterial conduits – Internal Mammary artery – 87pts,
Radial artery – 12 pts





Technique:-

We preferred open endarterectomy in multiple vessels and adopted a customized protocol in Pre-op and post-op care . The use of Cardiopulmonary bypass was decided on the table depending on the complexity of anatomy, hemodynamic instability, and exposure for a comfortable anastomosis/ repair. Once the vessel is exposed, a comfortable length of arteriotomy is done and the plaque is separated at the junction of adventitia media, which at times may be difficult to yield. In such a scenario, we use a 6mm Suture needle to create a plane and separate the plaque. Once the plaque gets lifted off it is grabbed with adequate pressure not allowing it to break off and gentle traction and counter traction are applied to retrieve the entire length of plaque. The procedure is deemed incomplete if the plaque snaps off midway, resulting in post-op occlusion.

Completion is achieved with a once wind sock-like tail end retrieved. Every specimen is carefully inspected for completion, if it fails the vessels are opened at the distal end, and a complete coronary endarterectomy is achieved. Subsequently, the vessels are grafted. When we use arterial conduits we use a vein patch to reconstruct the vessel and subsequently grafting is done. The choice of conduits was based on age and the caliber and native flow of the coronary artery.

Post-op Management: As these patients are highly prone to early native vessel thrombosis, within the first three hours we start Heparin infusion at 150-300 units/hr depending on the drainage.

2 antiplatelet agents for 1 year viz., Ticagrelor 90 mg B.D, Aspirin 150 mg OD with warfarin or Acenocoumarol (Acitrom) for 6 months. Prothrombin time values are titrated between 2 - 2.5INR

References:

1. Coronary Endarterectomy: Analysis of The Society of Thoracic Surgeons Adult Cardiac Surgery Database: John J. Kelly, MD, Jason J. Han, et al, (Ann Thorac Surg 2022;114:667-75)
2. Coronary endarterectomy for diffusely diseased coronary artery: An ace in the hole in coronary artery surgery, Kosaku Nishikawa, MD, Toshihiro Fukui, MD, PhD, JTCVS Techniques 2021;10:133-7 2666-2507

LAD	24
LAD + D1	14
LAD + OM + PDA	18
OM1 + OM2 + RCA	15
RCA only	12
RCA + LAD	11

Surgical Results

Between 2017 - and 2023 we have done 94 coronary endarterectomies with CABG

Multivessel - 58

Single vessel - 36

Operative mortality - Nil

Early post-op mortality - one patient – refractory arrhythmia

Angio data - CT coronary angiogram was done at random to see the patency of grafts

98% have patent vessels at the end of 3 years

No cerebrovascular events were noted

Conclusion:

Though unfamiliar among many surgeons this technique gives a new ray of hope to those who are refractory to medical therapy. Complications are well documented in studies to date and these patients need to be followed up with a close watch.





EMERGENCY LIFE-SAVING EMBOLIZATION OF ICA PSEUDOANEURYSM



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Dr. P. Sampathkumar

MD, DNB (Radiology), PDCC
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Consultant Interventional Radiologist

A young 30-year-old gentleman who had an RTA and suffered multiple skull fractures with multifocal cerebral hemorrhages was admitted to our hospital. He had a significant mass effect for which decompressive craniectomy was done. He had a prolonged hospital stay and improved subsequently with residual left hemiparesis.

He suddenly developed massive epistaxis in the ward, for which he was immediately shifted to the ICU, and nasal packing was done.

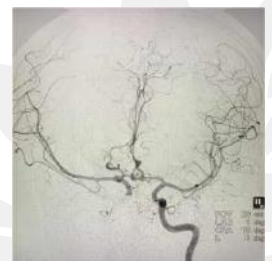
Emergency CT showed active bleeding into the right sphenoid sinus cavity. The patient was immediately taken up for DSA, which revealed a dysplastic right cavernous ICA with a small rent extravasating contrast into the sphenoid sinus.

In such emergencies, treatment usually comprises either placing a covered stent graft across the rent

or occluding the blood vessel itself, after checking adequate cross flow from the contralateral circulation.

Considering the history of RTA and the cavernous segment itself being dysplastic, we decided to proceed with parent vessel occlusion of the right ICA after the carotid cross-compression test. Since he had good cross flow from the opposite side across the anterior communicating artery, we could occlude the right ICA, thus stopping the active bleeding. The patient immediately improved and had no new onset neurological deficits.

One important point to note is that such conditions are associated with high mortality and emergency intervention plays a critical role in saving the life of the patient.



GLIMPSE

**Kangayam
Marathon 2023
Second Edition 13th
August 2023**



**Disaster
Management Mock
Drill at Coimbatore
International Airport
on 05.10.2023**



**Disaster
Management Mock
Drill held at Royal
Care on 07.10.2023**



**Medical camp
at TNPL Unit 2
Manapparai on
14.10.2023**



**NEOCON-2023
Annual State
Conference and
Scan Workshop
20.10.2023**





Saraswati Puja
Ayudha puja
Celebration
23.10.2023



TIP 2023 EBUS &
PERIPHERAL
LESION Workshop
05.11.2023



Royal Fest - 2023
7th Annual Day
Celebrations
04.11.2023

World Diabetes
Day Screening
Camp at Royal
Care on 14.11.2023



CME Programme
at Pollachi on
21.12.2023



MALE CHEST BODY CONTOURING SURGERY



Dr. K. Preetha Rani

MBBS, MS, M.Ch., Plastic Surgery (PGI Chandigarh)

Consultant Plastic, Reconstructive and Cosmetic Surgeon

Amongst the most appealing characteristics of an athletic male body is a well-defined pectoral area. The shape and development of the pectoralis muscles dictate the aesthetic standards of the male chest.

Poor development of the male chest musculature seems to be a result of modern urban lifestyle choices, including increased calorie intake, lack of physical activity, and resistance exercises.

Abnormal fat deposition in the chest, gynecomastia, disrupt the normal anatomy and are common reasons to perform reshaping surgery.

We categorize patients into four groups depending on their body type, leading to a different choice of procedure for each type: slim, athletic, fat, and gynecomastia patients

Gynecomastia or male boobs refers to the enlargement of breasts in males similar to that of females.

It may be due to enlargement of glandular tissue or fat accumulation. It can vary from small amounts of tissue to well-developed breasts like in females. It commonly occurs during puberty or could be drug-induced. It is a common cause of embarrassment for young males.

Body contouring surgery varies for each patient.

In thin patients, we achieve enhanced definition by performing superficial liposuction in addition to fat grafting in the muscular and submuscular layers.

In athletic patients, we can create a high definition using both deep plane and superficial plane liposuction and highlighting the major muscle groups. (High-definition liposuction). For obese patients also called pseudogynecomastia, we aim

to completely remove the deep layer of fat in and around the pectoral area by liposuction. Superficial fat removal is also required to achieve skin retraction in the area. Gynecomastia surgery includes liposuction, open gland excision, or most commonly a combination of both. This depends on whether the condition is mainly fatty, mainly glandular, or a combination of both. In patients with true gynecomastia, open resection is performed through a small incision in the periareolar region.

Liposuction is always performed as part of the surgical treatment to remove the excess breast fat and shred the gland tissue.

Liposuction surgery is one of the most common cosmetic surgeries performed.

The essence of liposuction surgery is the removal of fat by blunt, discontinuous dissection without interrupting the larger neurovascular bundle coursing to the skin from the deep fascia by using special suction techniques. (Power assisted, LASER assisted).

These are minimally invasive techniques done through pinhole incisions under general or local anesthesia. The use of tumescent infiltration enables bloodless and pain-free surgery.

Liposuction is a body-reshaping surgery.

There is a common misconception that fat is regained post-liposuction surgery which is not true. This is because the number of fat cells in our body is constant and liposuction removes these fat cells, so these cells cannot grow back.

Recovery period





The procedure is done as daycare procedure. It has a quick recovery time. Volume and size loss is more evident than weight loss.

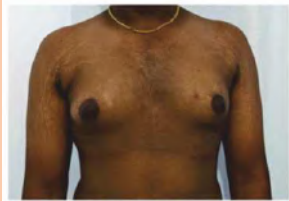





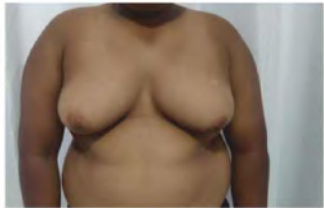

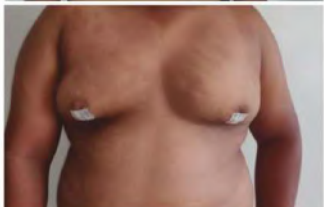



Slight discomfort and soreness in the chest for 3-4 days Can get back to regular cardio exercises in a week, and strenuous exercises in two weeks.

Compression garment to be worn for 4-6 weeks. The skin keeps shrinking for 3-6 months and with a stable weight and a healthy lifestyle, the results can last a lifetime.

Patient 1	Front View	Lateral View
Before		
After		

Patient 2	Front View	Lateral View
Before		
After		

Patient 3	Front View	Lateral View
Before		
After		





ZERO OR MINIMAL CONTRAST PERCUTANEOUS CORONARY INTERVENTION – AN OPTION FOR PATIENTS WITH CHRONIC KIDNEY DISEASE



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Consultant Interventional Cardiologist

Introduction

Patients with diabetes mellitus (DM), baseline renal compromise, or non-dialysis dependent chronic kidney disease (CKD) and the elderly are at high risk for worsening renal function with contrast media use during coronary interventions. They may need renal replacement therapy (RRT). The risk of contrast-induced acute kidney injury (CI-AKI) ranges from 3.3% (1) (in all comers) to 19% (2) (in acute coronary syndrome, ACS). CI-AKI leads to mortality and morbidity. Although the maximum allowable contrast volume is 3 times the estimated glomerular filtration rate (eGFR) (3), it often is impossible to limit

the volume during the revascularisation of a complex lesion in a complex patient.

Patients with renal dysfunction are less likely to be referred for both diagnostic and interventional procedures – a common occurrence termed ‘renalism’. Studies have shown that patients with CKD have a higher risk for mortality due to acute coronary syndromes. CKD co-exists with chronic coronary artery disease (CAD) and both influence long-term outcomes. Hence, a strategy to reduce overall contrast use or eliminate any use of contrast during percutaneous coronary intervention (PCI) is preferred in such patients.

Table 1

CI – AKI	Increase in serum creatinine by >0.5mg/dl or >25% of the baseline in 2-3 days postprocedure
At risk for CI-AKI	eGFR <45, Patients with DM, previous CI-AKI, Elderly
Allowable contrast use	Contrast volume = 3 times the eGFR
Ultra-low contrast PCI	Contrast volume = eGFR
Zero contrast PCI	No contrast used during the PCI procedure. Ultra-low contrast angiogram should be done 1 week prior

Strategies in ultra-low/zero contrast PCI

1) Pre-procedural hydration: Intravenous hydration reduces the incidence of CI-AKI. Hydration is done based on invasively measured left ventricular end-diastolic pressure (LVEDP) based on the data from the POSEIDON trial (4) (Table 2).

Table 2

Pre-procedure	3ml/kg of Normal saline (NS) for 1 hour	
During the procedure	LVEDP	NS
	<13 mm Hg	5ml/kg/hr
	13 -18 mm Hg	3ml/kg/hr
	>18 mm Hg	1.5ml/kg/hr
Post-procedure	Continue NS for 4 hours	





- 1) Coronary angiograms (CAG) are ideally done earlier (by 1 week) to the PCI procedure. Limited, unmagnified views without any panning of the table are taken with a total contrast volume not exceeding the eGFR. CAG should be done with narrow-bore 5F catheters. Staging the CAG and subsequent PCI by a week to allow for renal recovery is important.
- 2) Engagement of a 7 or 8F interventional guiding catheter for PCI is done without contrast puffs using just fluoroscopy. Saline injection into the coronary arteries produces a transient ST segment change in the ECG which confirms adequate engagement.
- 3) Wiring the coronary arteries is done without contrast use using roadmaps generated from the previously done CAG. The coronary artery of interventional interest is silhouetted with multiple wires in multiple side branches giving rise to a 'coronary skeleton'.
- 4) A physiological assessment is done with fractional flow reserve (FFR) or instantaneous wave-free ratio (IFR) to determine the physiological severity of coronary stenosis. Vessels with FFR <0.80 or IFR < 0.90 are intervened.
- 5) Intravascular imaging by intravascular ultrasound (IVUS) is done into the vessel of interest, and the length and extent of the lesion are quantified. Stent length is decided and the need for lesion preparation is assessed. Proximal and distal stent landing zones are captured using co-registration or fluoroscopy.
- 6) Using the previous coronary roadmap, the PCI procedure is completed and stents are placed.
- 7) Repeat IVUS is done, and the stent is post-dilated and optimized. Edge dissection, under expansion, and malapposition of the stents can be easily identified and corrected. Minimal stent area (MSA) is calculated and MSA >5.5mm² is considered excellent with good long-term outcomes.
- 8) ECG and BP are monitored throughout. Post-procedure FFR or IFR is done to determine the improvement in physiology.

- 9) Using IVUS and FFR/IFR, it is possible to perform and optimize the result in the vessel without the use of a single ml of contrast.
- 10) If any complications should arise – development of chest pain or ECG changes, adequate amounts of contrast are used for identification and bailout of the problem.
- 11) Post-procedure ECHO is done to exclude any pericardial collection due to potential coronary perforation.
- 12) A final check or control angiogram with minimal contrast (2-3ml) is done after the removal of the wires from the coronary tree.

Conclusion

Patients at risk for CI-AKI should be carefully identified and strategies of ultra-low contrast PCI should be used. In CKD patients not on dialysis, it's paramount to offer them low-risk, zero-contrast coronary intervention procedures which can improve their overall quality of life and reduce long-term cardio-vascular risk.

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- 4) Brar SS, Aharonian V, Mansukhani P, et al. Haemodynamic-guided fluid administration for the prevention of contrast-induced acute kidney injury: the POSEIDON randomised controlled trial. *Lancet*. 2014;383:1814-1823. doi:10.1016/S0140-6736(14)60689-9





Figure 1

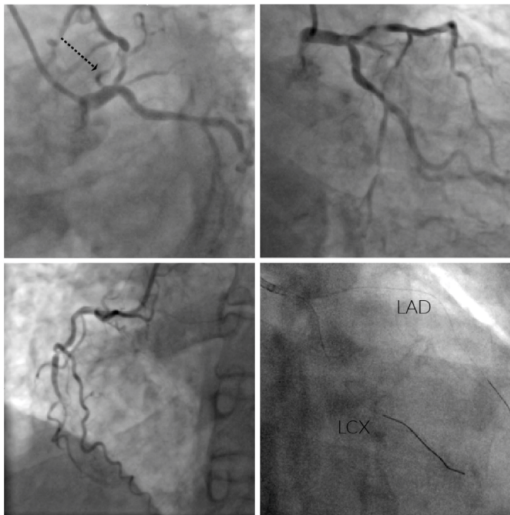


Figure 1 : A 71 year old patient with limiting angina was evaluated. CAG revealed Double vessel disease with RCA CTO and a long Ostial to mid LAD lesion. As the patient had an eGFR of 19, Ultra-low contrast CAG followed by staged zero-contrast PCI to LMCA-LAD was planned. The last panel shows 2 wires in the LAD and LCX, skeletonising the left coronary system.

Figure 2 : Upper panel shows the pre-stenting IVUS run demonstrating the proximal landing zone and distal landing zones for the stents. Upper middle panel is at the ostium of the LAD showing eccentric calcium and a very tight stenosis. The lower panel shows post stenting IVUS with good MSAs in all the segments. IVUS also ruled out edge dissections and malapposition, thereby eliminating the need for contrast injections.

Figure 2

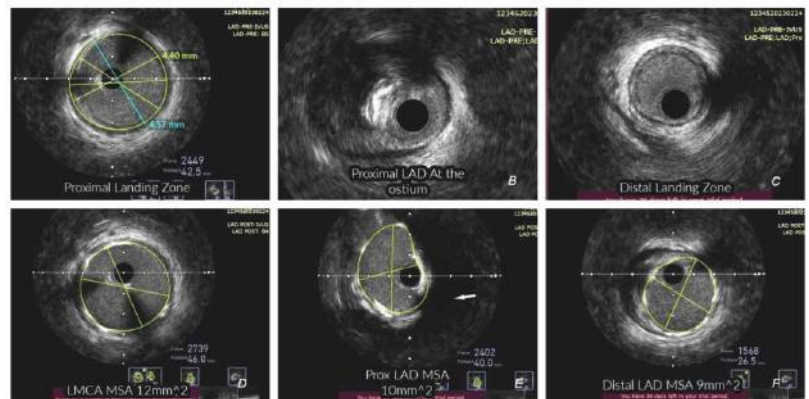


Figure 3

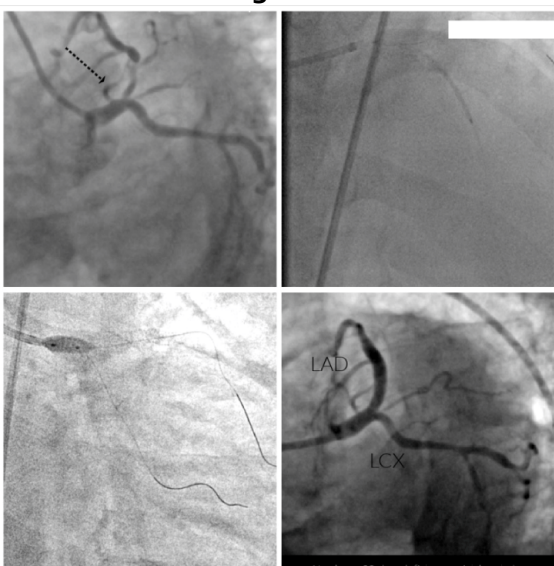


Figure 3 : Demonstrating the Stent placement from LMCA to LAD using CAG roadmap and further proximal optimisation. The last panel shows the final result – which was excellent angiographically.

FFR was done with intracoronary nicorandil, with a pre procedure value of 0.6 and post procedure improvement to 0.97.



GROWING TERATOMA SYNDROME



Dr. Narmadha Rathinasamy

DM (Medical Oncology),
Consultant Medical Oncologist

Germ cell tumours originate predominantly from the gonads and about 1-3 % of presentation is extragonadal. The anterior mediastinum is the most common extragonadal site in adults aged between 25 and 35 years. The histology and treatment regimen remains similar to gonadal tumours although the clinical presentation, prognosis and survival outcomes may differ. The other differential diagnosis would include thymic tumours, lymphoma and metastasis.

Case Report

A 30-year-old male presented to the pulmonology team with symptoms of cough for 2 months duration and weight loss of 3 kg in 1 month. CT scan of the chest showed 13 x 10 cm anterior mediastinal mass compressing the mediastinal vessels. CT-guided biopsy of the mass was reported as seminoma with IHC being positive for PLAP and CD 117. Tumour markers (mentioned in the table) were suggestive of non-seminoma and PETCT showed 15 cm x 14.8 x 11 cm anterior mediastinal mass with displacement of mediastinal structures and compressing the left main bronchus with subcarinal nodes and supraclavicular nodes. Ultrasound of the scrotum showed no suspicious lesions in both testes. Based on the workup, the patient was diagnosed as a mixed germ cell tumour of mediastinum –high risk.

The patient was initiated on chemotherapy with a BEP regimen as per the standard of care and showed minimal improvement in the symptoms

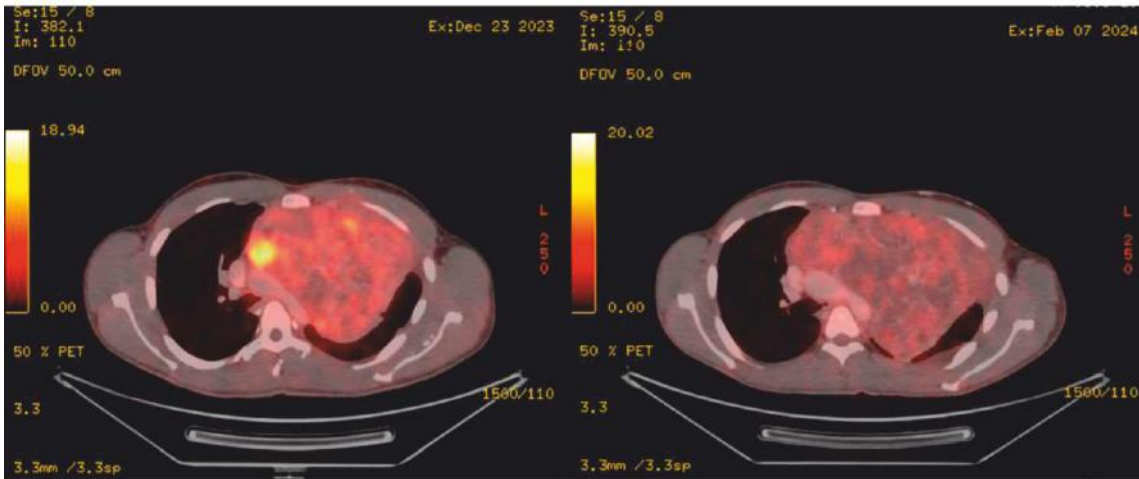
after 1 cycle along with a significant reduction in tumour markers. However, after completion of 2 cycles of chemotherapy, he presented with an increase in cough, breathlessness on exertion and mild pain over the back. Chest X-ray showed an increase in mediastinal widening compared to baseline and repeat tumour marker showed a further declining trend. In view of the high clinical suspicion of early and rapidly growing teratoma, further systemic therapy was withheld and was planned for an interim PETCT scan.

PET-CT showed a reduction in FDG uptake with an increase in the size of the mediastinal mass with encasement of the arch of the aorta, tumour thrombi in the left IJV up to the skull base and pericardial infiltration. Based on the normalized tumour markers with rapidly enlarging tumours in imaging, a clinical diagnosis of growing teratoma syndrome was made. Multidisciplinary team opinion involving Surgical oncology, Cardiothoracic surgery, Cardiology and Pulmonology was taken for surgical resection. The patient was counselled about the need for an MRI Brain to assess the extent of tumour thrombi, and the anticipated risk of incomplete resection carrying a high risk for local recurrence along with perioperative morbidity and mortality due to cardiopulmonary compression. The patient was unwilling to surgical management and hence was discussed the option for salvage systemic therapy versus best supportive and palliative care. However, after a detailed discussion with the patient's family, the patient has been started on Cdk4/6 inhibitor- palbociclib.



Tumour markers -

Tumour Markers	Baseline	Post Cycle 1 BEP	Post Cycle 2 BEP	Prior to Palbociclib
AFP	4035	1045	177	20
BHCG	670	137	3.2	0.7
LDH	392	326	294	236



- i) Baseline PETCT showing the anterior mediastinal mass causing compression of the mediastinal structure
- (ii) PETCT during chemotherapy showing an increase in size with minimal FDG uptake of the necrotic lesion

Growing Teratoma Syndrome :

Growing teratoma syndrome is a rare clinical entity in patients with non-seminomatous germ cell tumour who have disease progression during or after chemotherapy in spite of the normal tumour marker. The usual onset of growing teratoma is reported around 7 – 18 months, though can develop even during chemotherapy and as long as after a decade of treatment. Surgery is the cornerstone for growing teratomas which are usually resistant to chemotherapy and radiation. Complete surgical resection improves survival in growing teratoma but the mediastinal site remains a surgical challenge due to cardiopulmonary compression. Limited options of systemic therapy with available early phase data and case reports include targeting one of the following- VEGF, C-Kit, EGFR, receptor Tyrosine kinase, mTOR, Cdk4/6, and PD 1. Results of these trials and clinical case reports of these available drugs showed modest

response rates leading to shorter survival.

Conclusion

Growing teratoma syndrome is a rare clinical scenario that warrants early diagnosis and complete surgical resection to relieve symptoms of cardiopulmonary compression and to improve survival. Our patient presented with yet another rare presentation of teratoma growing during chemotherapy compared to the usual late-onset presentation following treatment.

Nitecki R, Hameed N, Bhosale P, et al Growing teratoma syndrome; International Journal of Gynecologic Cancer 2023;33:299-303.

Laura Galvez-Carvajal, Alfonso Sanchez-Muñoz, Nuria Ribelles, Maribel Saez, Javier Baena, Sofia Ruiz, Catherine Ithurbisquy, Emilio Alba, Targeted treatment approaches in refractory germ cell tumors, Critical Reviews in Oncology / Hematology, Volume 143, 2019



Congrats



Dr. Kalaivani Logesh
MBBS, MS (OG), MRCOG (UK), DNB (OG), MNAMS
Consultant Obstetrician and Gynaecologist

for being admitted as a fellow of The
Association of Minimal Access
Surgeons of India - FMAS



Dr. Narmadha Rathinasamy MD (R.T), DM (Medical Oncology),
Consultant Medical Oncologist

She completed her MBBS from Coimbatore Medical College in 2013 followed by MD Radiation Oncology from Madras Medical College and DM Medical Oncology from Tata Memorial Hospital, Mumbai. Previous Work experience- Tata Memorial Hospitals (Ad Hoc assistant professor), Apollo Proton Cancer Centre (Consultant) and PSG IMSR (Assistant professor).



Dr. Varun Marimuthu MD, DM(Cardio),
Consultant Interventional Cardiologist

Dr Varun completed his MBBS from Madras Medical College and his MD (Internal medicine) from KMC, Manipal. After finishing his speciality training in Cardiology (Adult and Pediatric Interventions) from Sri Jayadeva Institute of Cardiovascular Sciences and Research, Bangalore, he worked as an Assistant Professor at the same institute before joining Royal care hospitals.



Dr. Akanksha Palo MBBS, MD Nuclear Medicine (Jipmer),
Consultant Nuclear Medicine

Dr Akanksha has finished her MBBS from Jawaharlal institute of Postgraduate Medical Education and Research (JIPMER), Pondicherry in 2019. She then finished her MD in Nuclear Medicine from JIPMER in 2023. She has currently joined Royal care Superspeciality Hospital as Consultant Nuclear medicine



Dr. K. Subramaniam MBBS, MD, DNB(Path), PDF(Haematopath), MBA(HM),
Consultant Haematopathologist

Completed his MBBS from Government Erode Medical College, Perundurai (IRT-PMCH) in the year 2007 and did his Post-graduation degree in Pathology from the prestigious Armed Forces Medical College, Pune in 2011. Worked as Assistant Professor in the Department of General Pathology, Christian Medical College, Vellore. Then completed the Post Doctoral Fellowship in Haematopathology from CMC, Vellore in 2014. He was trained in Flowcytometry and Haematopathology from Tata Memorial Hospital, Parel, and Advanced Centre for Treatment, Research and Education in Cancer (ACTREC), Navi Mumbai. Established the Haematopathology lab and worked as Chief Consultant Haematopathologist in G. Kuppaswamy Naidu Memorial Hospital, Coimbatore for ten years before joining our Royal Care Super Speciality Hospital.



Dr. S. Kiruthika MBBS, MD(Pathology),
Consultant Pathologist

Completed MBBS in 2011 from Madras Medical College, Chennai. Completed MD pathology at Coimbatore Medical College in 2023. She joined as a consultant pathologist at our Royal Care.



Dr. Sundhara Moorthi Nagarajan MBBS, MD(Psychiatry),
Consultant Psychiatrist

He obtained his MBBS from Kanyakumari Government Medical College in 2016 and completed his Doctorate of Medicine (MD) in Psychiatry from Thanjavur Government Medical College in 2022. He gained professional experience with the Tamil Nadu government service under the Directorate of Medical Health Services at the Aranthangi District Headquarters Hospital as a Satellite Psychiatrist. Subsequently, he worked as an Assistant Surgeon at Kotagiri Government Hospital under the Tamil Nadu government service. He joined as a Consultant Psychiatrist at our Royalcare.

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