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APOLLO CHENNAI INSIGHTS

REDEFINING POSSIBILITIES

Excellence in High-Risk Medical Care

Edition-I

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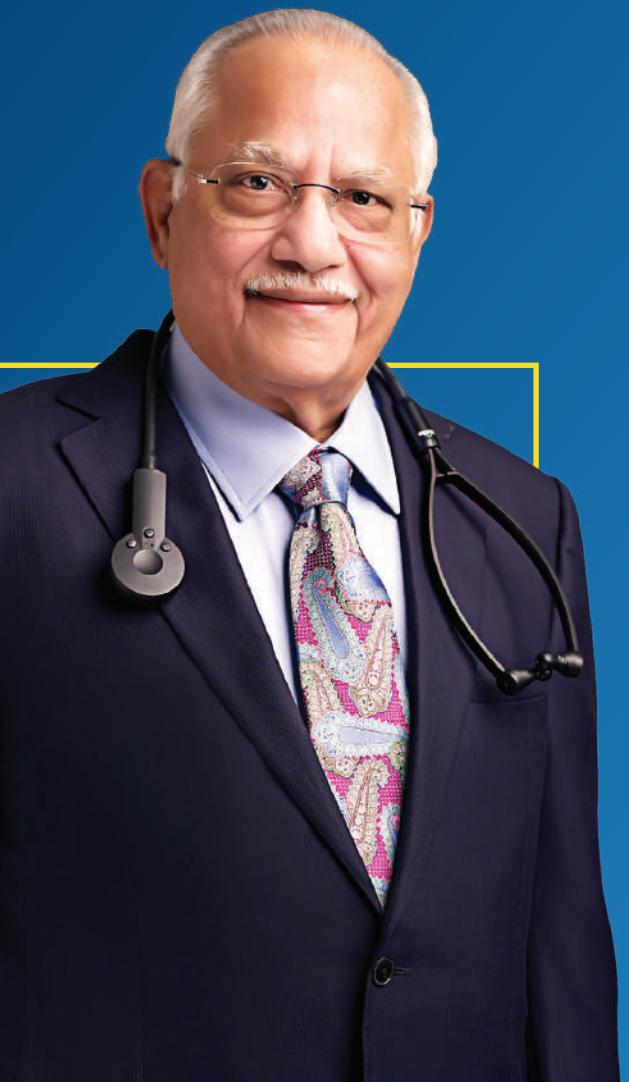
FROM THE CHAIRMAN'S DESK: VISION AND MISSION



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Dr Prathap C Reddy
Founder & Chairman
Apollo Hospitals

01

Mitral Annular Calcification-Related Calcific Amorphous Tumour With Cavitation & Left Ventricle To Left Atrium Communication - A Rare Presentation

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INTRODUCTION

A 77-year-old gentleman with hypertension, type 2 diabetes mellitus, dyslipidemia and end-stage renal disease on regular maintenance hemodialysis thrice weekly for 2 years, presented with severe breathlessness and pedal edema for 10 days. He was transferred from another hospital after treatment of acute pulmonary edema.

On examination, he was tachypneic, with a blood pressure of 140/80 mm Hg, pulse rate of 120 beats/min, andSaO2 96%. Cardiac auscultation revealed a soft S2 and pansystolic murmur of mitral regurgitation with pulmonary congestion and right heart failure.

Baseline blood investigations were unremarkable. Evaluation for infective endocarditis with multiple sets of blood cultures was negative. The electrocardiogram showed sinus tachycardia with QS complexes in leads V1 to V3, and ventricular premature complexes.

Transthoracic echocardiography revealed hypokinetic basal inferior, inferoseptal and inferolateral walls of the left ventricle with an ejection fraction of 50% with dense calcification in the posterior mitral annulus and severe MR.

Transesophageal echocardiography revealed extensive and dense calcification of the mitral annulus with an echolucent space in the posterolateral region of the MAC, suggestive of cavitation of CAT (CAT cavity; approximately measuring 15 x 10 mm), which was communicating into both the left ventricle (LV) and the left atrium (LA) [LV to LA fistulous communication through CAT cavity] (Figure 1).

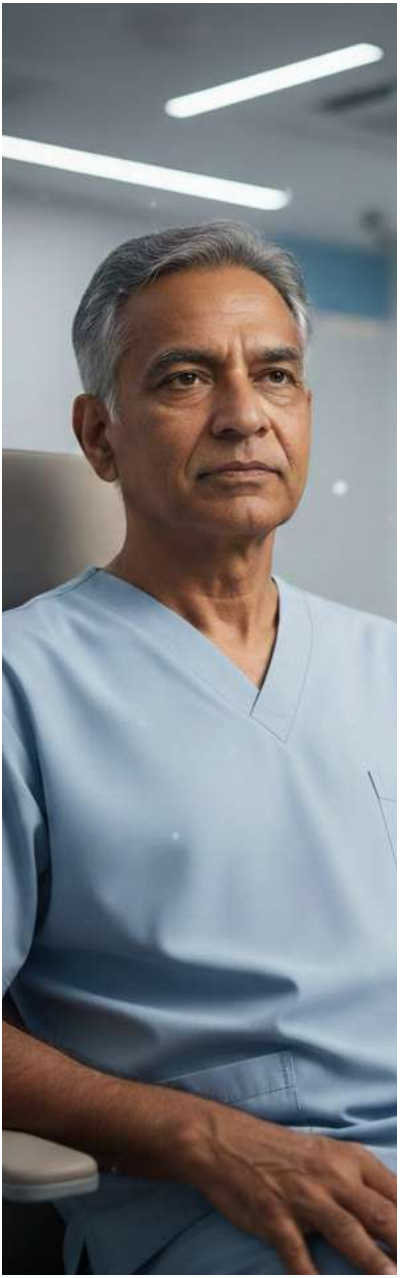
PRESENTATION

The communication to LA was narrow and tortuous, and out of phase with the central MR jet. There was also mild thickening of the posterior mitral leaflet with poor coaptation at the medial aspect of the P2 segment. There was severe MR with two jets: a large central jet from the valve coaptation area and another smaller eccentric jet via the LV-CAT cavity-LA communication (Figure 2-4).

The MR volume was 117 ml. Computed tomography coronary angiography, and nuclear myocardial perfusion scan did not reveal any ischemia. A diagnosis of MAC-related CAT with severe MR resulting from mitral coaptation defect and LV-CAT cavity-LA communication was made.

UNIQUENESS NOVEL COMMUNICATION PATHWAY

It represents the first reported instance of a cavitating MAC-related CAT establishing a direct communication between the left ventricle and the left atrium, contributing significantly to mitral regurgitation



DUAL MECHANISM OF SEVERE MR

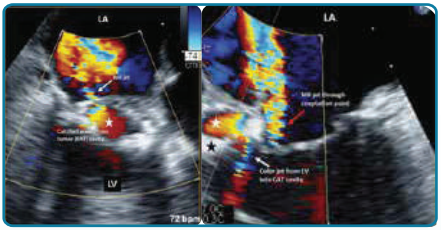
The patient exhibited severe MR arising from two distinct mechanisms: a central coaptation defect likely exacerbated by the MAC, and an eccentric jet originating from the newly identified LV-CAT-LA communication.

CLINICAL SIGNIFICANCE OF CAVITATION

The presence of cavitation within the CAT appears to be integral to the formation of this unusual communication.

HIGH-RISK PATIENT POPULATION

The report underscores the heightened risk of severe and atypical cardiovascular complications in patients with ESRD and MAC, emphasising the need for vigilant monitoring and advanced imaging in this population.



SUGGESTED TREATMENT STRATEGY

Given the persistent severe MR from both the coaptation defect and the LV-CAT-LA communication, a definitive treatment strategy would ideally address both issues.

SURGICAL INTERVENTION (PREFERRED)

Surgical repair of the CAT cavity and the LV-LA communication, combined with mitral valve repair or replacement, would be the most comprehensive approach.

TRANSCATHETER OPTIONS (ALTERNATIVE FOR HIGH-RISK PATIENTS)

In patients deemed prohibitively high-risk for surgery, a staged or combined transcatheter approach could be considered:

- TRANSCATHETER EDGE-TO-EDGE REPAIR (TEER) WITH MITRACLIP This could address the central mitral regurgitation resulting from the coaptation defect.
- VASCULAR PLUG EMBOLIZATION Percutaneous closure of the LV-CAT-LA communication using a vascular plug (e.g., Amplatzer Vascular Plug II) could potentially reduce the eccentric MR jet.

02

Simultaneous Deceased Donor Liver Transplantation & Sleeve Gastrectomy In A Morbidly Obese Patient With Nash Cirrhosis: A Feasible & Effective Strategy

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INTRODUCTION

Non-alcoholic steatohepatitis (NASH), driven by rising obesity rates, is an increasingly common cause of end-stage liver disease. High BMI poses added risks in liver transplantation, traditionally managed by delaying bariatric surgery.

We present this patient story of a 140-kg male with NASH-induced cirrhosis who underwent simultaneous deceased donor liver transplantation and sleeve gastrectomy.

The patient recovered well, losing 23 kg within a month, highlighting the feasibility and potential long-term benefits of combined surgery in selected high-BMI patients.

PATIENT PRESENTATION

Patient: Male, 140 kg, 41 of BMI, 48 years

Diagnosis:

Abdominal discomfort, flushing episodes, and weight loss

Diagnosis:

- NASH-induced decompensated cirrhosis
- Model for End-Stage Liver Disease (MELD) score: [ ]
- Comorbidities: Insulin resistance, obstructive sleep apnea

Preoperative Evaluation:

• Cardiac, respiratory, and anesthetic clearance.

• Multidisciplinary review involving hepatology, bariatric surgery, and anesthesiology teams.

• Discussed risks and benefits of simultaneous surgery

Surgical Management:

PROCEDURE:

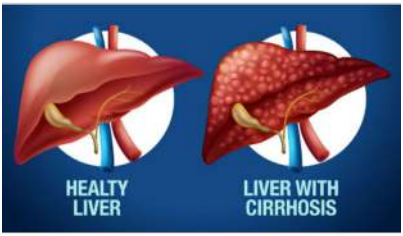
- DDLT (Deceased Donor Liver Transplantation) was performed first.
- Sleeve Gastrectomy (Bariatric Surgery) was performed immediately after the liver implant, ensuring liver perfusion and hemodynamic stabilization.

Operative Course:

• Surgery performed in a single setting under one anesthetic.

• No intraoperative complications.

• Blood loss and operative time were within acceptable limits.

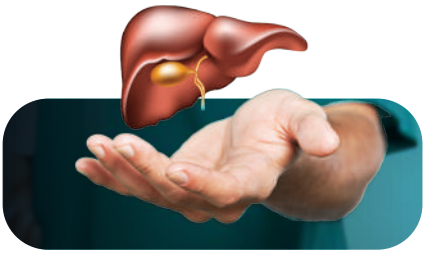


Follow-Up (1 Month):

- Total Weight Loss: 23 kg
- Improved metabolic profile
- Liver function tests normalized
- Estimated future excess weight loss: ~60% expected in the coming months

Postoperative Course:

- Uneventful recovery
- Early mobilization & enteral nutrition
- No rejection or graft dysfunction
- Discharged on a post-op day



DISCUSSION

This clinical insight highlights a paradigm shift in managing morbid obesity and NASH cirrhosis through simultaneous liver transplantation and bariatric surgery. Benefits include: Reduced perioperative risk from a single surgical episode. Accelerated weight loss in the post-transplant period. Lower long-term risk of metabolic complications and graft. Careful patient selection and a multidisciplinary team approach are crucial for success.

CONCLUSION:

Simultaneous sleeve gastrectomy and DDLT are safe, feasible, and effective in selected patients with NASH-related cirrhosis and morbid obesity. It offers a holistic solution to address both hepatic failure and underlying metabolic syndrome, potentially improving long-term graft and patient outcomes.

03

First Dual Chamber Leadless Pacemaker In Tamil Nadu

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INTRODUCTION

Conventional transvenous pacemakers have long represented the standard of care for patients requiring permanent pacemaker implantation. However, their implantation involves endocardial leads and a subcutaneous pocket, both of which are associated with complications such as lead dislodgment, venous stenosis, tricuspid valve regurgitation, device and pocket infection, and long-term mechanical failure.

To overcome these risks, self-contained leadless pacemakers (LPs) have been developed. Smaller than an AAA battery, these devices are implanted entirely within the heart, eliminating the need for leads, a subcutaneous surgical pocket, and a pulse generator. **Leadless pacemakers aim to reduce procedural complexity and hardware-related complications**

PRESENTATION AND EVALUATION

An 80-year-old diabetic, hypertensive gentleman is a case of CAD – Old MI, Status Post PTCA to RCA (2011) and LAD (2012), End-stage renal disease on hemodialysis. He was evaluated for recurrent syncope. His ECG showed LBBB with 2:1 AV Block, ECHO revealed LVH, Global hypokinesia of LV and mild LV dysfunction.

CKD on hemodialysis with an AV fistula increases the risk of conventional pacemaker infection; hence, he was recommended to undergo leadless pacemaker implantation.

PROCEDURE

Under IV sedation and through femoral venous access, the right ventricular leadless pacemaker (AVEIR VR DEVICE) was deployed into the right ventricular apical septum (Figure 1). Atrial device (AVEIR AR DEVICE) was advanced into the right atrium using the same femoral access and deployed into the base of the right atrial appendage (Figure 2). After deployment and appropriate programming, both the atrial and the ventricular leadless pacemakers were paired successfully with implant-to-implant (i2i) communication and were functioning appropriately. **The pacemaker interrogation showed stable device parameters the day after implant. The longevity of a pacemaker is around 10 years, and subsequently can be retrieved, and a new implant can be done.** This is the first reported case of implantation of a DR dual-chamber leadless pacemaker in Tamil Nadu in an elderly patient with multiple underlying ailments.

04

Minilep Using Thulium Laser: A Neo Revolution In Prostate Surgery




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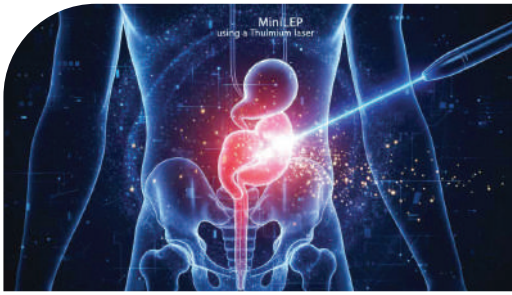
CLINICAL PRESENTATION

As men age, one of the most common health concerns they face is benign prostatic hyperplasia (BPH) - a non-cancerous enlargement of the prostate gland. This condition affects millions of men, especially those over the age of 50, and can lead to frustrating urinary symptoms like frequent urination, weak stream, nighttime urination (nocturia), and difficulty in emptying the bladder.

For years, the standard treatment for significant prostate enlargement has been TURP (Transurethral Resection of the Prostate), a surgical procedure that uses electric current to remove excess prostate tissue. While effective, TURP comes with some drawbacks, including bleeding, longer recovery time, and hospital stays.

With advancements in medical technology, a more refined, safer and quicker alternative has emerged: MiniLEP using Thulium Laser. This cutting-edge technique represents a gentler approach to prostate surgery, offering excellent outcomes with fewer side effects and faster recovery - especially for men with smaller to moderately enlarged prostates.



MiniLEP stands for Miniaturised Laser Enucleation of the Prostate. It is a less invasive version of traditional laser prostate surgeries, such as HoLEP (Holmium Laser Enucleation of the Prostate). Instead of using large instruments and more extensive removal of tissue, MiniLEP uses smaller surgical tools and precise laser (thulium) to gently "shell out" the enlarged part of the prostate that is blocking the urinary stream.

The procedure is performed through the natural urinary passage - there are no external cuts or stitches. A special scope (tube with a camera) is inserted through the penis, and the thulium laser is used to delicately separate the obstructing prostate tissue from the outer capsule of the gland. This tissue is then removed, and the patient is typically catheterized for a short period.

WHY THULIUM LASER?

Among the various types of lasers available in urology, the Thulium: YAG laser stands out for several reasons: Precision: The thulium laser provides continuous energy, allowing surgeons to cut with pinpoint accuracy.

Minimal Bleeding: Its wavelength (~2010 nm) is absorbed well by water-rich tissue like the prostate, giving excellent haemostasis (bleeding control).

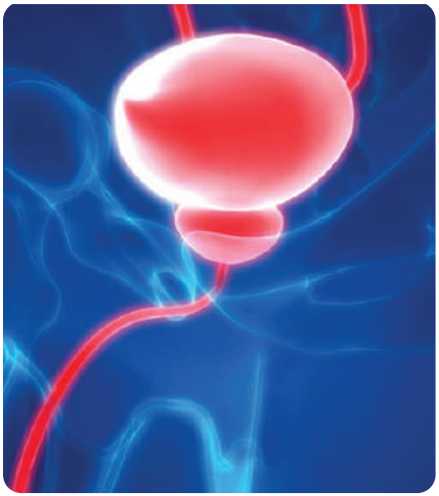
Smooth Recovery: Less heat spread means less irritation to surrounding tissues, translating to faster healing and reduced discomfort.

Safe for High-Risk Patients: Because of its low bleeding profile, it's especially suitable for men on blood thinners or those with cardiac conditions.

HOW IS MINILEP DIFFERENT FROM TRADITIONAL SURGERY?

Feature	Traditional TURP	MiniLEP with Thulium Laser
Instrument size	Larger	Miniaturised, smaller instruments
Bleeding	Moderate	Very low
Hospital stay	2-3 days	Often within 24 hours
Catheter duration	2-3 days	Usually 1 day or less
Energy used	Electric current	Laser (Thulium)
Heat damage to tissue	Moderate	Minimal
Suitable for anticoagulated patients	Limited	Yes

WHO CAN BENEFIT FROM MINILEP?



MiniLEP is ideally suited for:

- Men with moderate-sized prostates (30-80 cc).
- Those who have failed medical therapy for BPH.
- Patients who are on blood thinners and cannot stop them safely.
- Elderly patients needing a gentler procedure with faster recovery.

WHAT HAPPENS DURING THE PROCEDURE?

Preoperative Checkup: Blood and urine tests, ultrasound, and uroflowmetry are done to assess the prostate and bladder.

Anaesthesia: Usually spinal anaesthesia (numbing from the waist down) is given.

Laser Enucleation: Through the urethra, the surgeon uses a thulium laser to precisely remove the obstructive prostate tissue.

Tissue Removal: The removed tissue is sent for biopsy. This is a routine step to rule out hidden prostate cancer.

Catheterization: A urinary catheter is placed and usually removed the next day.

Discharge: Most patients are discharged within 24 hours.

Recovery from MiniLEP is usually rapid & smooth. Here's what most patients experience:

Mild burning during urination for a few days

Improved urinary flow within a week. Return to normal activity within 4-7 days

Avoid heavy lifting or sexual activity for 2-3 weeks

Long-term benefits include better bladder emptying and fewer nighttime trips to the bathroom

Most importantly, unlike TURP, MiniLEP has a lower risk of reoperation in the future.

SIDE EFFECTS

All surgical procedures carry some risk, but MiniLEP has a low complication profile. Possible side effects include:

- Temporary burning or urgency while urinating
- Mild blood in the urine for a few days
- Rarely, urinary incontinence or retrograde ejaculation (dry orgasm), which may persist in some men

CONCLUSION

MiniLEP using a Thulium laser is a significant boost to the treatment option for patients on antiplatelets, a patient-friendly procedure for men suffering from prostate enlargement. It blends the power of modern laser technology with a minimally invasive approach to deliver fast, safe, and effective relief from urinary symptoms.

05

Giant Benign Ovarian Cyst With Small Bowel Adhesions - A Multidisciplinary Surgical Challenge

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ABSTRACT

We present a rare instance of a giant benign ovarian cyst adherent to the small bowel, managed successfully through a multidisciplinary surgical approach. The patient underwent exploratory laparotomy, intraoperative frozen section, total abdominal hysterectomy, & bilateral salpingo-oophorectomy. This clinical profile highlights the importance of surgical expertise, intraoperative pathology, & collaborative teamwork in managing complex ovarian masses.

INTRODUCTION

Large ovarian masses can pose significant diagnostic and operative challenges, especially when they adhere to surrounding abdominal structures such as the small intestine. While many of these lesions are benign, the sheer size and anatomical disruption they cause can result in severe symptoms and increased surgical risks. Timely diagnosis, preoperative imaging, and multidisciplinary involvement are key to successful outcomes.

PRESENTATION

A middle-aged female presented with progressive abdominal distension, early satiety, and discomfort for several months. She had no significant past medical or surgical history. On physical examination, a large, non-tender, mobile mass was palpable, occupying the entire abdomen.

INVESTIGATIONS

- Ultrasound Abdomen and Pelvis: Revealed a large, well-defined cystic lesion, likely arising from the ovary.
- Contrast-Enhanced CT Scan (CECT) Abdomen and Pelvis: Confirmed a giant multiloculated cystic ovarian mass with thin septations, extending from the pelvis to the epigastrium. No definitive features of malignancy were noted, though mass effect on bowel loops was evident.

SURGICAL MANAGEMENT

An exploratory laparotomy was performed under general anesthesia. Intraoperative findings included a giant, tense ovarian cyst occupying the entire abdominal cavity. The cyst was densely adherent to multiple loops of the small bowel and the mesentery, making dissection technically demanding. Careful adhesiolysis was carried out to prevent bowel injury.

An intraoperative frozen section of the mass was performed and reported as a benign mucinous cystadenoma.

Given the size of the mass and the patient's age, a total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed in collaboration with the attending gynecologist. The mass was excised in toto without rupture or spillage.

POSTOPERATIVE COURSE

The patient had an uneventful recovery and was discharged on postoperative day 5. She was reviewed in the outpatient clinic two weeks later and was asymptomatic.

FINAL HISTOPATHOLOGY REPORT

- Diagnosis: Benign mucinous cystadenoma of the ovary.
- No evidence of malignancy.

DISCUSSION

Giant ovarian cysts, although often benign, can cause significant anatomical distortion and are associated with intraoperative challenges, especially when adherent to nearby organs like the small intestine. Adhesions increase the risk of bowel injury and require meticulous surgical dissection. Intraoperative frozen section plays a crucial role in guiding the surgical plan, especially when malignancy cannot be ruled out preoperatively.

In this instance, the confirmation of a benign lesion allowed for completion of the procedure without radical oncologic resection.

The involvement of a gynaecologist was vital in ensuring safe removal of the reproductive organs, adhering to proper surgical protocols, and reducing recurrence risk.

CONCLUSION

This insight illustrates the importance of multidisciplinary collaboration in managing large abdominal masses. Early imaging, the use of intraoperative pathology, and coordinated surgical care ensure optimal outcomes in complex benign ovarian tumours with surrounding adhesions.

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