

THE EXCHANGE

ISSUE 98 | MAY 2026

Clinical Innovations

New Milestones

Better Outcomes

Cover Feature

EGFR-Mutant Lung Adenocarcinoma in a Non-Smoker A Multimodality Approach at Medanta - Gurugram



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Medanta - Gurugram

EGFR-Mutant Lung Adenocarcinoma in a Lifelong Non-Smoker

Multimodality Management with Neoadjuvant Therapy and VATS Lobectomy

Lung adenocarcinoma is the most common subtype of non-small cell lung cancer and is increasingly recognised in lifelong non-smokers, particularly young women. The identification of actionable mutations, such as Epidermal Growth Factor Receptor (EGFR) alterations, has significantly influenced management by enabling targeted therapy alongside surgery.

This case highlights the management of a young non-smoker female with EGFR exon 19-mutant lung adenocarcinoma using neoadjuvant chemotherapy, targeted therapy, and minimally invasive surgical resection.

Case Study

A 31-year-old female, lifelong non-smoker, presented in June 2023 with an episode of haemoptysis, which subsided with medical management. She subsequently developed left-sided chest pain in October 2023.

Chest X-ray revealed a spiculated opacity in the left upper lung zone, prompting further evaluation.

Diagnostic Evaluation

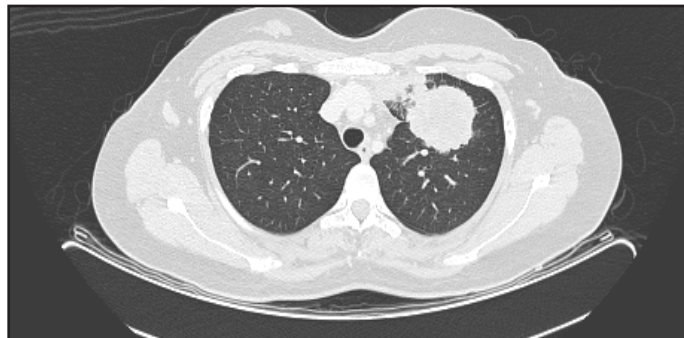
Contrast-enhanced CT and PET-CT demonstrated a lobulated, spiculated soft tissue mass in the apical segment of the left upper lobe measuring 68×43×39 mm, with FDG-avid prevascular and aortopulmonary window lymph nodes, suggestive of nodal involvement.

Image-guided biopsy confirmed moderately differentiated invasive adenocarcinoma with EGFR exon 19 deletion.

The patient was initiated on neoadjuvant chemotherapy (cisplatin and pemetrexed, four cycles) along with daily oral gefitinib starting November 2023.

Restaging PET-CT in February 2024 demonstrated a thin-walled cavitary lesion measuring 2.5×1.6×2.0 cm with mild surrounding fibrosis, no definite solid component, consistent with partial response.

The patient was clinically stable with ECOG performance status 1. In view of residual disease without evidence of distant metastasis, surgical resection was planned.



CE-CT showing soft tissue mass in the apical segment of the left upper lobe

Surgical Management

The patient underwent video-assisted thoracoscopic surgery (VATS) left upper lobectomy with systematic mediastinal lymph node dissection under general anaesthesia with double-lumen intubation.

Intraoperatively, a cavitary lesion measuring approximately 3×4 cm was identified in the left upper lobe, with dense adhesions to mediastinal structures and the chest wall. Multiple anthracotic lymph nodes were noted adherent to the bronchus, pulmonary artery branches, and aortic arch.

Fissures were complete, with no pleural or pericardial effusion and no diaphragmatic nodules. The procedure included dissection and division of the pulmonary vein, fissure, arterial branches, and upper lobe bronchus using endoscopic stapling devices, followed by specimen retrieval. Systematic lymph node dissection was performed from stations 5, 6, 7, 8, 9, 10, and 11.

Complete lung expansion was achieved with no intraoperative air leak. The patient was extubated on table and observed in the ICU overnight. Recovery was uneventful.

Chest drains were removed sequentially on POD 3 and POD 4 following confirmation of adequate lung expansion. The patient was mobilised early with physiotherapy and maintained good oral intake.

She was discharged in stable condition on POD 5.

Outcome and Follow-up

Final histopathology revealed moderately differentiated invasive adenocarcinoma (acinar pattern, Grade 2), ypT1bN0, with ≤10% residual viable tumour.

All resection margins were negative, with no lymphovascular invasion or pleural involvement. All examined lymph nodes were tumour-free. The cavitory lesion showed features resembling aspergillus infection.

The patient demonstrated good functional recovery, with satisfactory exercise tolerance. Follow-up at one week, three months, and one year showed no evidence of recurrence.

Discussion

Lung adenocarcinoma in lifelong non-smokers is increasingly recognised and is often associated with driver mutations such as EGFR.

This case highlights the role of molecular profiling in guiding targeted therapy and the effectiveness of neoadjuvant treatment in achieving significant tumour regression.

Minimally invasive approaches such as VATS lobectomy enable safe resection even in technically challenging cases with dense adhesions, while reducing post-operative morbidity and facilitating early recovery.

The presence of a post-treatment cavitory lesion underscores the importance of histopathological evaluation in differentiating residual tumour from treatment-related or infective changes.

Conclusion

This case demonstrates the effectiveness of a multidisciplinary approach combining systemic therapy and minimally invasive surgery in achieving favourable oncological outcomes in EGFR-mutant lung adenocarcinoma.

It also reinforces the need for clinical vigilance for lung cancer in non-smokers and the growing role of molecular profiling in guiding personalised treatment strategies.

Dr. Arvind Kumar

Chairman – Institute of Chest Surgery, Chest Onco-Surgery and Lung Transplantation
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Case Study

Medanta - Patna

Traumatic Aortic Regurgitation Following Blunt Chest Trauma

TEE-Guided Diagnosis in Persistent Respiratory Failure and Surgical Correction

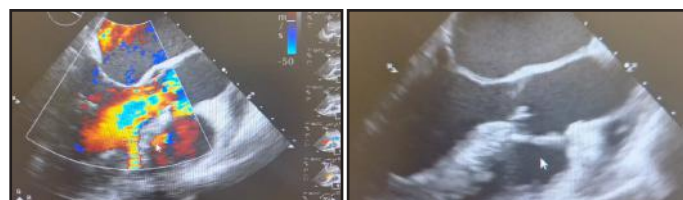
Blunt chest trauma can result in a spectrum of cardiac injuries; however, valvular involvement is uncommon and often under-recognised. In polytrauma patients, coexisting thoracic and pulmonary injuries may obscure underlying cardiac pathology. This case highlights the role of transoesophageal echocardiography (TEE) in identifying traumatic aortic valve injury in a patient with persistent respiratory failure, enabling timely surgical intervention.

Case Study

A 54-year-old male with a history of hypertension and treated pulmonary tuberculosis sustained polytrauma following a fall from a tree. Initial evaluation at an outside facility revealed left-sided rib fractures, multiple vertebral fractures (L1-L5), and bilateral pleural effusions, for which two pleural taps were performed followed by intercostal drain insertion. He was then referred to Medanta - Patna with persistent dyspnoea of 8-10 days' duration and inability to be weaned from non-invasive ventilation.

Diagnostic Evaluation

On admission, the patient was conscious but hypoxaemic, requiring high-flow nasal oxygen with escalation to non-invasive ventilation. HRCT chest demonstrated bilateral pulmonary infiltrates with pleural effusion, with differential diagnoses including pulmonary contusion, traumatic pleural effusion, acute respiratory distress syndrome, and ventilator-associated pneumonia.

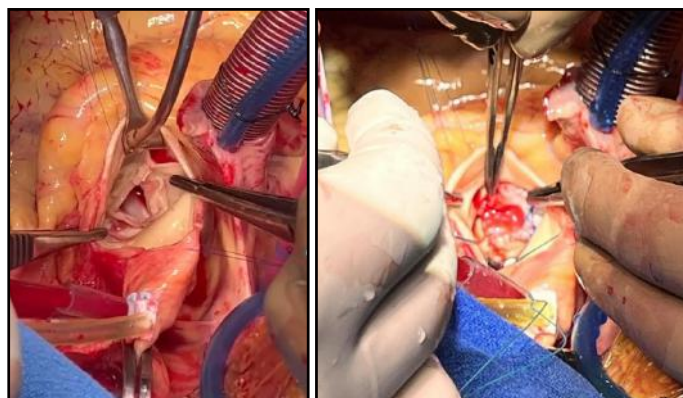


Flail aortic leaflet (RCC) causing severe aortic regurgitation

Despite supportive management, respiratory distress persisted and was disproportionate to radiological findings. Transthoracic echocardiography showed moderate aortic regurgitation with preserved left ventricular function, initially considered incidental. In view of persistent respiratory failure and inability to wean from ventilatory support, transoesophageal echocardiography was performed, which revealed a trileaflet aortic valve with a flail right coronary cusp causing severe aortic regurgitation, consistent with traumatic valvular injury.

Surgical Management

Given severe aortic regurgitation with ongoing respiratory compromise, urgent surgical intervention was undertaken. Intraoperatively, a localised aortic dissection with avulsion of the right coronary–non-coronary commissure was identified, resulting in severe valvular incompetence. The patient underwent aortic valve replacement with a 23 mm bioprosthetic valve along with repair of the localised dissection using a Dacron patch. He was weaned off cardiopulmonary bypass with stable haemodynamics and extubated 12 hours post-operatively.



Detached right non-coronary commissure causing localised dissection

Dacron patch repair of the localised dissection

The patient showed marked symptomatic improvement with resolution of respiratory distress and remained haemodynamically stable at discharge.

Clinical Discussion

Traumatic aortic valve injury is a rare but serious complication of blunt chest trauma, typically resulting from a sudden rise in intrathoracic pressure during early diastole leading to cusp disruption or commissural avulsion. Diagnosis is often delayed due to overlapping respiratory symptoms and associated thoracic injuries, with clinical signs frequently subtle in critically ill patients. Transthoracic echocardiography may have limited

diagnostic utility in trauma settings due to poor acoustic windows from rib fractures, mechanical ventilation, and chest drains. Transoesophageal echocardiography provides superior visualisation of valvular structures and should be considered when clinical suspicion persists despite inconclusive TTE findings. Delayed diagnosis may result in persistent pulmonary oedema, often mimicking acute respiratory distress syndrome. Early recognition and timely surgical intervention are essential, with valve replacement associated with favourable outcomes.

Conclusion

This case underscores the importance of considering valvular injury in polytrauma patients with persistent or unexplained respiratory failure. Early use of transoesophageal echocardiography enables accurate diagnosis and facilitates timely surgical management, resulting in favourable outcomes.

Dr. Anuj Kumar

Associate Director - Cardiac Surgery
Medanta - Patna



Dr. Shraddha Ranjan

Senior Consultant and Incharge - Non-Invasive Cardiology
Medanta - Patna



Case Study

Medanta - Noida

Unusual Post-operative Diagnosis of Pre-existing Disease after CABG

Post-operative respiratory and bulbar symptoms following cardiac surgery are commonly attributed to cardiopulmonary or infective causes. In the presence of atypical or persistent features, an underlying neuromuscular disorder should be considered.

This case highlights the delayed recognition of Myasthenia Gravis in the early post-operative period after CABG.

Case Study

A 64-year-old male presented to the emergency

department of Medanta - Noida with recurrent bouts of cough associated with vomiting, breathlessness, and chest pain. He had undergone double-vessel PTCA three months earlier. He reported intermittent episodes of cough and breathlessness followed by chest discomfort over the preceding one month.

On admission, he was conscious, tachypnoeic, and tachycardic (HR: 110/min; BP: 170/100 mmHg; SpO₂: 85% on room air). ECG showed dynamic ST depression in leads II, III, aVF, and V1-V4. Chest examination revealed bilateral crackles. Initial Trop I was negative. Screening echocardiography showed no RWMA, with LVEF ~55% and mild mitral regurgitation (MR).

Acute Management and Surgical Intervention

The patient was managed in the emergency setting with oxygen supplementation, non-invasive ventilation, diuretics, nitrates, antiplatelets, and unfractionated heparin, with symptomatic improvement over 4-6 hours. A repeat evaluation showed stable LV function; however, a markedly elevated Trop I (7942) prompted coronary angiography. CAG revealed triple vessel disease with occlusion of previously placed stents. During the procedure, he developed acute heart failure with bilateral coarse crackles, requiring NIV support, diuretics, and intra-aortic balloon pump (IABP) insertion.

He subsequently underwent urgent off-pump coronary artery bypass surgery (OPCAB)*3 (LIMA to LAD, RSVG to Ramus and OM). The immediate post-operative course was uneventful, and he was shifted to the ward on POD 3.

Post-operative Course and Diagnostic Evaluation

On POD 5, the patient developed severe cough, bronchospasm, atrial fibrillation, fever, and chills. He was managed with antibiotics, bronchodilators, and supportive care, and stabilised. He was discharged after 48 hours of observation.

Five days later, he re-presented with persistent cough, difficulty in swallowing, and change in voice. Neurology opinion was sought.

Final Diagnosis and Management

Investigations showed elevated acetylcholine receptor (AChR) binding antibodies (1.17 nmol/L; >0.5 nmol/L considered positive), consistent with a diagnosis of Myasthenia Gravis.

Ryle's tube feeding was initiated along with pyridostigmine

and corticosteroids. Direct swallowing score was 10/15. Over the next five days, semisolid oral feeds were introduced alongside enteral feeding, followed by gradual progression to full oral intake. The feeding tube was subsequently removed. Steroids were tapered, and pyridostigmine was continued at 30 mg three times daily.

The patient showed sustained clinical improvement, with resolution of cough and chest discomfort. At follow-up, steroids were tapered and discontinued, and he remains stable on pyridostigmine with no recurrence of symptoms over three months post-CABG.

Clinical Insight

This case underscores the need to consider underlying neuromuscular disorders such as Myasthenia Gravis in patients with persistent or atypical respiratory and bulbar symptoms in the post-operative period. Early recognition and multidisciplinary management are essential to optimise outcomes in complex cardiac surgical patients.

Dr. Sanjay Kumar

Director - CTVS
Medanta - Noida



Dr. Rajeev Ranjan

Director - Cardiac Anaesthesia and Critical Care
Medanta - Noida



Case Study

Medanta - Ranchi

Adenomatoid Odontogenic Tumour with Dentigerous Cyst

Successful Conservative Management of an Extensive Maxillary Lesion

Adenomatoid odontogenic tumour (AOT) is a rare benign epithelial odontogenic tumour, most commonly arising in the anterior maxilla and frequently associated with impacted teeth. It often mimics a dentigerous cyst on imaging, making pre-operative differentiation challenging.

This case highlights an AOT associated with a dentigerous cyst, presenting with significant maxillary expansion and

sinonasal involvement, and managed successfully with conservative surgical intervention.

Case Study

A 35-year-old male presented to Medanta – Ranchi with a five-month history of progressive right-sided facial swelling and difficulty in breathing. The swelling was associated with mild pain, persistent headache, and continuous watering from the right eye.



Pre-operative facial swelling with periorbital involvement due to maxillary lesion

Extraoral examination revealed a diffuse swelling over the right midface with obliteration of the nasolabial fold.

Extraoral examination revealed a diffuse swelling over the right midface with obliteration of the nasolabial fold.

Diagnostic Evaluation

Computed tomography demonstrated a large, well-defined expansile lesion involving the right maxilla, associated with an impacted incisor tooth. There was marked expansion into the maxillary antrum with narrowing of the sinus lumen and extension towards the nasal cavity.

The findings were suggestive of an odontogenic cystic lesion, with differential diagnosis including dentigerous cyst and AOT.

Surgical Management

In view of the lesion's extent and proximity to the maxillary sinus and nasal cavity, complete excision with preservation of adjacent structures was planned.

The patient underwent enucleation of the lesion along with removal of the impacted tooth, followed by curettage.

Histopathological examination confirmed an adenomatoid odontogenic tumour associated with a dentigerous cyst. The cystic lining was consistent with a dentigerous cyst, while the tumour component demonstrated characteristic duct-like and rosette patterns.

The post-operative course was uneventful. The patient was followed up at regular intervals over six months.

There was no clinical or radiological evidence of recurrence.



Intraoperative view showing enucleation of maxillary AOT associated with impacted tooth

Discussion

AOT is a benign, encapsulated odontogenic tumour characterised by slow growth and non-aggressive behaviour. It is commonly associated with impacted teeth and typically presents as a well-defined unilocular radiolucency.

Coexistence with a dentigerous cyst, as seen in this case, is a recognised but uncommon presentation. It is proposed that the cyst may precede tumour development, with subsequent proliferation of odontogenic epithelium within the cyst lining.

Although often asymptomatic, larger lesions may present with facial swelling and sinus involvement. Radiological findings alone may not be definitive, and histopathological evaluation remains essential for diagnosis.

Given the benign nature and low recurrence rates, conservative surgical management with enucleation and curettage is the treatment of choice. More extensive procedures are rarely indicated.

Conclusion

Adenomatoid odontogenic tumour should be considered in the differential diagnosis of cystic maxillary lesions associated with impacted teeth. Histopathological confirmation is critical, and timely conservative management results in excellent outcomes with minimal risk of recurrence.

Dr. Ravi Raushan

Attending Consultant - Oral and Maxillofacial Surgery

Medanta - Ranchi



Spotlight

MEDANTA NOIDA IS NOW NABH ACCREDITED



A proud milestone that reflects our promise to deliver safe, high-quality, and patient-centred care.



Kudos



Dr. Tejinder Kataria, Chairperson – Radiation Oncology, Medanta Gurugram, was honoured with the Precision Oncologist of the Year award at the Precision Medicine Conclave in Mumbai, organised by Voice of Healthcare.

The recognition acknowledges her contribution to advancing precision radiation therapy and personalised cancer care.

The award was presented by Dr. Daksha Shah, Former Executive Health Officer, Municipal Corporation of Greater Mumbai, in the presence of Dr. Naveen Nishchal, Infectious Disease Specialist, AIIMS New Delhi.

Welcome Onboard



Dr. Ashok Kumar Gupta

Senior Consultant - Urology
Medanta - Ranchi

Dr. Gupta specialises in urology, with expertise in minimally invasive, laparoscopic and endo-urological procedures for stone disease, prostate disorders and urological cancers.



Dr. Bhuvana Vijayakanthi

Senior Consultant - Cardiac Anaesthesia
Medanta - Noida

Dr. Vijayakanthi specialises in cardiac anaesthesia, with expertise in adult and paediatric cardiac surgery, ECMO and heart transplant anaesthesia, and perioperative cardiac critical care.



Dr. Vipin Jaishree Sharma

Consultant - Cardiac Anaesthesia
Medanta - Patna

Dr. Sharma specialises in anaesthesiology, with expertise in perioperative care, trauma anaesthesia and interventional pain management.



Dr. Prateek Arora

Consultant - GI Surgery
Medanta - Lucknow

Dr. Arora specialises in surgical gastroenterology, with expertise in hepatopancreatobiliary, colorectal and gastrointestinal cancer surgery.





Dr. Srikant Panda

Associate Consultant - Nephrology and
Kidney Transplant Medicine
Medanta - Gurugram

Dr. Panda specialises in nephrology, with expertise in kidney transplantation, dialysis, and the management of chronic kidney disease and complex renal disorders.



Dr. Swapnil Sharma

Visiting Consultant - Dental Sciences
Medanta - Noida

Dr. Sharma specialises in implantology and periodontology, with expertise in full-mouth rehabilitation, advanced implant procedures and laser-assisted dental treatments.



Dr. Abhishek Kumar Roy

Associate Consultant - Critical Care
Medanta - Gurugram

Dr. Roy specialises in critical care and intensive care medicine, with expertise in advanced organ support.



Dr. Sonali Karnwal

Associate Consultant - Radiation Oncology
Medanta - Noida

Dr. Karnwal specialises in radiation oncology, with expertise in advanced radiotherapy techniques.



Dr. Ankit Khetan

Associate Consultant - Neurology
Medanta - Lucknow

Dr. Khetan specialises in neurology, with expertise in headache and pain disorders, stroke, epilepsy and movement disorders



Dr. Ahemadullah Shaikh

Associate Consultant - Neurosurgery
Medanta - Lucknow

Dr. Shaikh specialises in neurosurgery, with expertise in the management of brain and spine disorders.



IN CASE OF **EMERGENCY** DIAL **1068**

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Medanta - Ranchi

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Cybercity

UG 15/16, DLF Building 10 C, DLF Cyber City, Phase II, Gurugram
Tel: 0124 4141 472

Subhash Chowk

Plot No. 743P, Sector - 38, Subhash Chowk, Gurugram
Tel: 0124 4834 547

Cyber Park

Shop No. 16 and 17, Tower B, Ground Floor, DLF Cyber Park, Plot No.
405B, Sector-20, Udyog Vihar, Gurugram Tel: 93541 41472

Golf Course Road

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