

# THE EXCHANGE

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Clinical Innovations

New Milestones

Better Outcomes

## Cover Feature

### ECMO-Supported Airway Rescue in Critical Central Airway Obstruction

A multidisciplinary life-saving intervention  
enabling definitive bronchoscopic tumour clearance  
in a ventilator-dependent patient



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## Feature Story

Medanta - Gurugram

## VV-ECMO–Supported Flexible Bronchoscopic Tumour Debulking and Y-Stent Placement in Critical Central Airway Obstruction

Malignant central airway obstruction is a life-threatening emergency that can rapidly result in respiratory failure and inability to maintain adequate oxygenation with conventional ventilation.

In selected patients with severe airway compromise, veno-venous extracorporeal membrane oxygenation (VV-ECMO) may be used as a bridge to enable safe bronchoscopic intervention.

We report a case of metastatic lung adenocarcinoma presenting with critical bilateral central airway obstruction, successfully managed with VV-ECMO-supported flexible bronchoscopic tumour debulking and self-expandable metallic Y-stent placement.

### Case Study

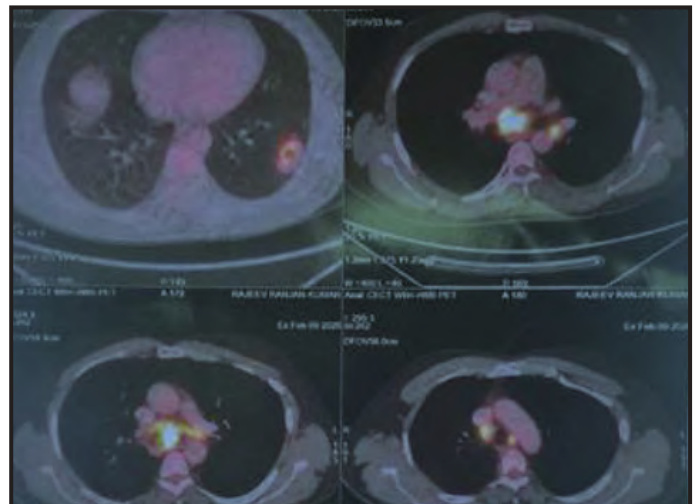
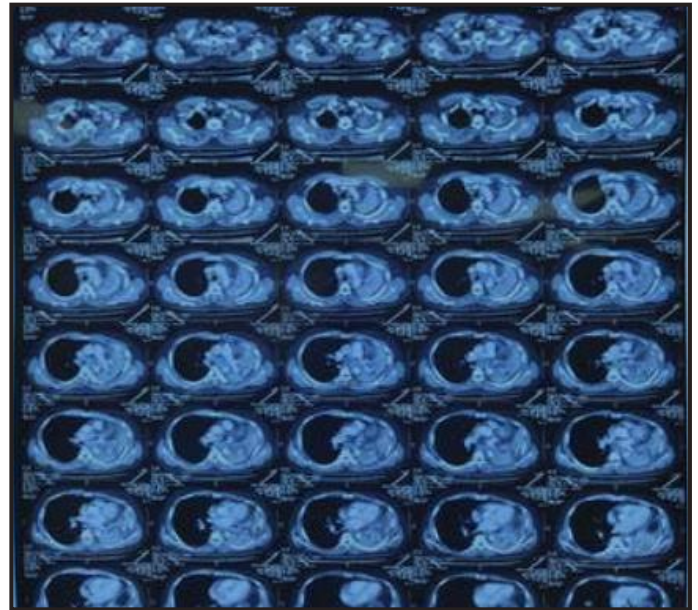
A 45-year-old man from Patna presented with a one-month history of cough, expectoration, and haemoptysis. Initial imaging revealed a left lower lobe cavitory lesion, and bronchoscopy showed near-complete obstruction of the left main bronchus.

PET-CT demonstrated FDG-avid mediastinal nodal disease with a pleural-based lesion in the left lower lobe, suspicious for malignancy. Bronchoalveolar lavage (BAL) was initially positive for Mycobacterium tuberculosis on GeneXpert, and anti-tubercular therapy was started.

Despite treatment, the patient deteriorated with worsening respiratory distress. Repeat bronchoscopy revealed complete obstruction of the left main bronchus and significant narrowing of the right main bronchus. Endobronchial biopsy confirmed lung adenocarcinoma.

The patient developed progressive respiratory failure with near-complete collapse of the left lung and required mechanical ventilation. However, he remained ventilator-

dependent and could not be weaned. In view of the critical condition, referral to a higher centre was planned. The patient was initiated on VV-ECMO support and airlifted from Patna to Medanta - Gurugram for further management.

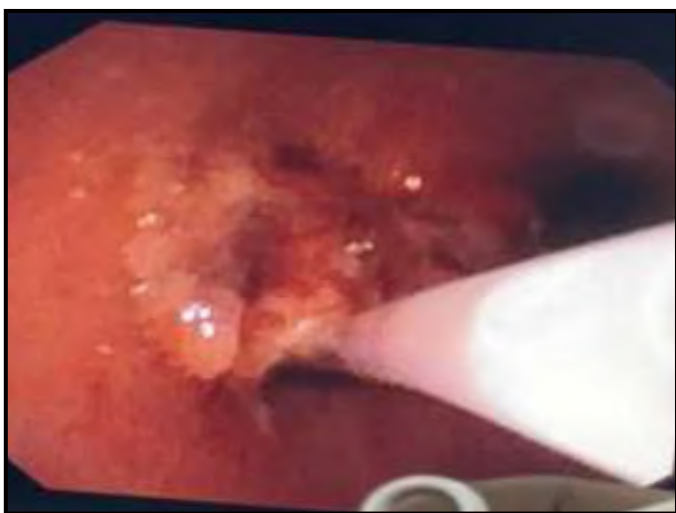
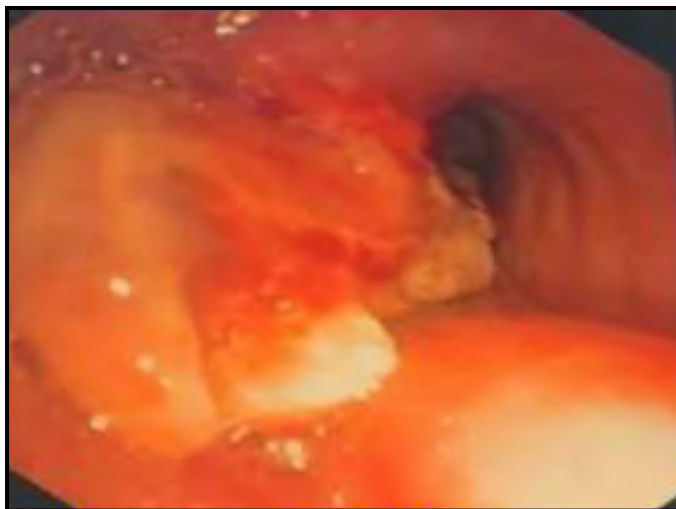


Pre-intervention computed tomography and PET CT image showing critical central airway obstruction involving the left main bronchus

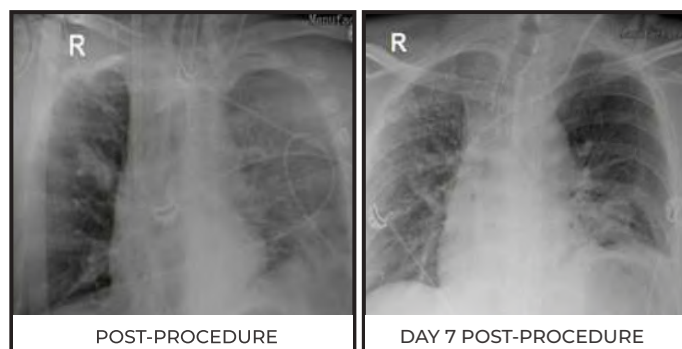
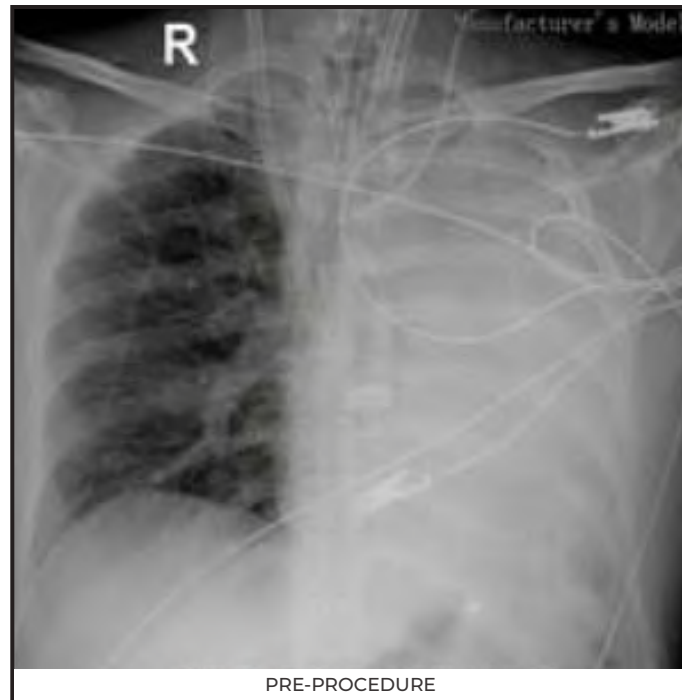
### Bronchoscopic Intervention

A multidisciplinary decision was taken to proceed with flexible bronchoscopy under ongoing VV-ECMO support.

Bronchoscopy was performed via an 8.0 mm endotracheal tube. The obstructing tumour in the left main bronchus was debulked using a hot snare under electrocautery. Residual tumour tissue, clot, and secretions were cleared using cryo-extraction, with heparin temporarily withheld during the procedure.



Intra-procedural flexible bronchoscopic view during electrocautery snare tumour debulking



Chest X-rays pre-procedure, post-procedure, and on Day 7 follow-up

Following adequate airway clearance, a self-expandable metallic Y-stent was deployed under bronchoscopic guidance to restore and stabilise the tracheobronchial airway.

Minor bleeding was controlled with local measures. Post-procedure imaging confirmed correct stent positioning with re-expansion of the previously collapsed left lung. A repeat bronchoscopy after two days confirmed a patent stent with clearance of secretions.

## Recovery and Outcome

Following restoration of airway patency, there was a marked improvement in ventilation and oxygenation, allowing gradual weaning from ECMO support. The patient was transitioned from invasive ventilation and was subsequently extubated.

Follow-up imaging demonstrated a well-expanded lung with a patent Y-stent in situ.

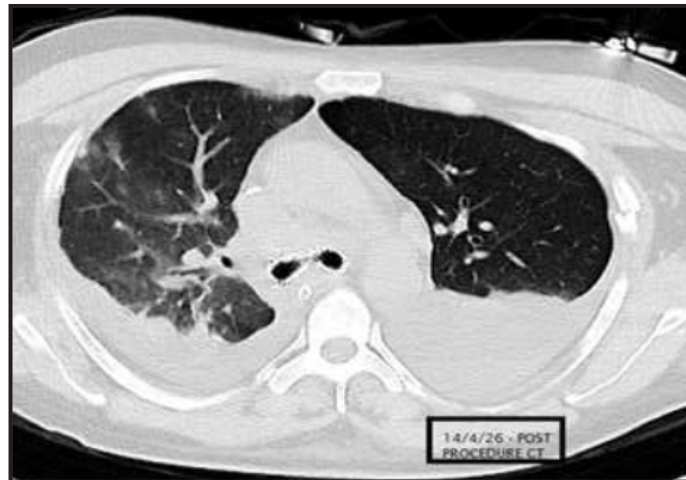
During the hospital stay, secondary infections were identified and managed with appropriate antimicrobial and antifungal therapy. The patient also developed acute kidney injury, which subsequently resolved.

Final histopathology confirmed non-small cell lung carcinoma, favouring adenocarcinoma, with immunohistochemistry showing TTF-1 positivity and p40 negativity. Pleural fluid cytology was also positive for malignant cells. The patient was taken over by the medical oncology team and initiated on chemotherapy.

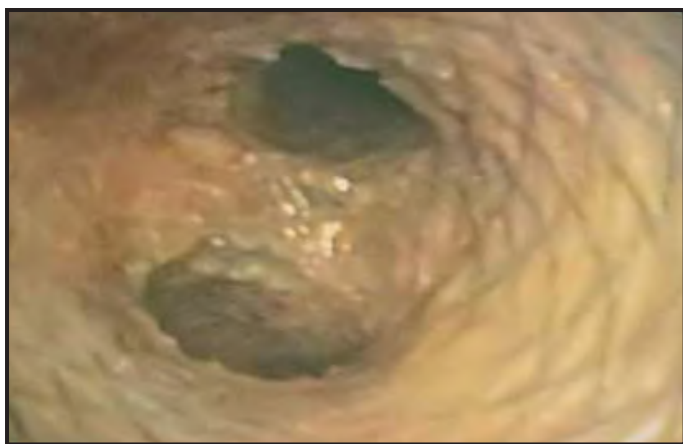
Over the next two weeks, renal function improved, and the patient's clinical condition stabilised. The tracheal stent was successfully removed, and the patient was discharged home in a stable condition.



Intra-procedural flexible bronchoscopic lumen of left main bronchus opened



Post-procedural computed tomography showed a patent Y-stent with aeration of both lungs



Bronchoscopic or radiographic image demonstrating final position of the self-expandable metallic Y-stent (SEMS) after deployment

## Clinical Learning

This case highlights the role of VV-ECMO as a bridge to definitive airway intervention in patients with critical malignant central airway obstruction who cannot be safely managed with conventional ventilation alone.

Severe bilateral airway compromise significantly limits the safety of bronchoscopic procedures due to the risk of rapid desaturation. VV-ECMO provides stable gas exchange, allowing controlled tumour debulking and stent placement.

A combined approach of electrocautery snare debulking, cryo-extraction, and self-expandable metallic Y-stenting enabled rapid restoration of airway patency and lung re-expansion.

Although patients on ECMO require anticoagulation, it can be temporarily withheld to safely perform such airway interventions.

The case also highlights the importance of repeat tissue diagnosis when microbiological and radiological findings are discordant, particularly in tuberculosis-endemic settings.

## Conclusion

VV-ECMO can serve as a life-saving bridge to enable flexible bronchoscopic tumour debulking and Y-stent placement in carefully selected patients with critical malignant central airway obstruction where conventional ventilation is insufficient.

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## Case Study Medanta - Patna

# A Case of Synchronous Triple Primary Malignancies

## Multimodality Management with Complete Pathological Response

Synchronous multiple primary malignancies are rare and present significant diagnostic and therapeutic challenges. Accurate staging and coordinated multidisciplinary planning are essential. This case highlights the role of multidisciplinary care in the treatment and outcome of synchronous triple primary malignancy.

### Case Study

A 57-year-old female presented to Medanta – Patna with epigastric pain and progressive bloating with the difficulty in swallowing. In view of persistent upper gastrointestinal symptoms, further evaluation was undertaken.

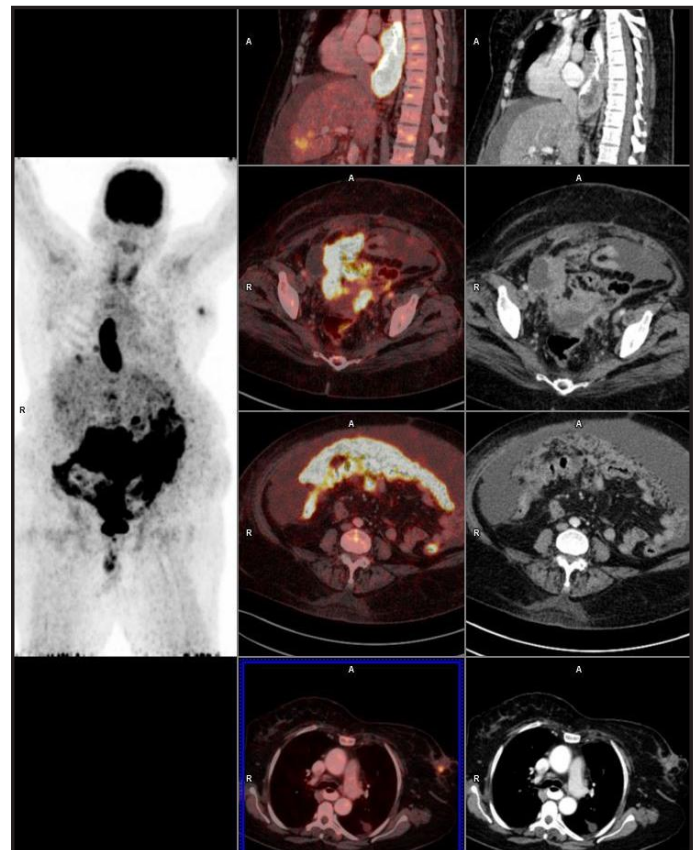
### Evaluation and Diagnosis

Initial clinical and biochemical evaluation suggested an ovarian malignancy. Ultrasonography revealed a right adnexal solid-cystic lesion with associated omental

thickening, and histopathology confirmed high-grade serous carcinoma of the ovary.

Further work-up with FDG PET-CECT demonstrated additional sites of disease, including a metabolically active mid to distal thoracic oesophageal lesion consistent with squamous cell carcinoma, and a small lesion in the left breast, which was later biopsied and found to be ER/PR-positive and suggestive of invasive lobular carcinoma.

These findings established the diagnosis of synchronous triple primary malignancies involving the ovary, oesophagus, and breast.

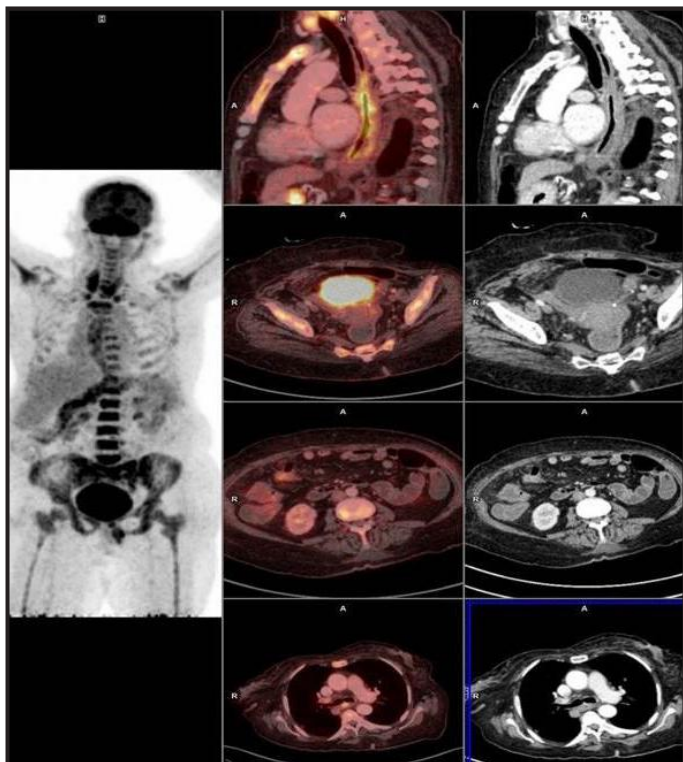


Baseline FDG PET-CT demonstrating metabolically active lesions in the right adnexa, thoracic oesophagus, and left breast

### Clinical Management

Following initial multidisciplinary tumour board discussion, a coordinated multimodality treatment approach was undertaken. The patient first received concurrent chemoradiotherapy targeting the oesophageal malignancy, using chemotherapy agents with efficacy in both breast and ovarian cancers, carboplatin and paclitaxel to be specific.

An interim FDG PET-CT performed prior to further treatment demonstrated complete metabolic response in the oesophageal lesion, with resolution of previously identified disease.



Interim FDG PET-CT demonstrating complete metabolic response with resolution of previously identified lesions

In view of this response, the case was re-evaluated in a second multidisciplinary tumour board meeting, and definitive surgical management was planned. The patient subsequently underwent a left modified radical mastectomy on 1 December 2025, followed by interval cytoreductive surgery on 29 December 2025.

Germ line testing for mutations via NGS revealed BRCA2 and GNAS mutation. Simultaneous presence of Breast and Ovarian Cancers can be explained by BRCA2 mutation. BRCA2 mutation can be seen in 5-7 percent of Esophageal Cancers also, which can explain simultaneous triple primary in this patient.

## Recovery and Outcome

The postoperative course was uneventful. The patient remained haemodynamically stable, was mobilised early, and recovered without complications.

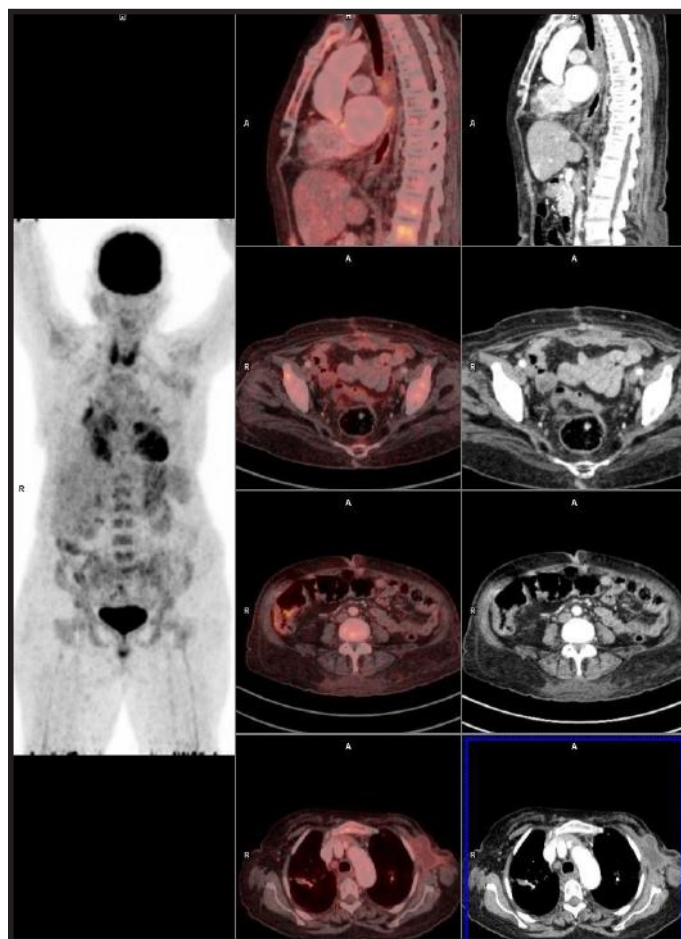
Histopathological examination of the resected specimens demonstrated complete pathological response at both breast and ovarian sites. The patient then received three additional cycle of carboplatin and paclitaxel followed by planned adjuvant hormone therapy.

## Clinical Perspective

This case highlights the importance of comprehensive staging in suspected multifocal malignancy, with FDG PET-CT enabling identification of synchronous triple primary tumours in a single evaluation.

A stepwise multidisciplinary approach allowed optimal sequencing of therapy, with systemic and locoregional treatment tailored to address all disease sites. Careful response assessment and re-evaluation at tumour board were critical in guiding definitive surgical intervention.

Such coordinated management was central to achieving complete pathological response in this complex clinical scenario.



Follow-up FDG PET-CT demonstrating complete metabolic response with no residual tumour

## Dr. Amarendra Amar

Associate Director - Medical Oncology  
Medanta - Patna



## Dr. Shweta Rai

Associate Director - Gynaecology and  
Gynae-oncology  
Medanta - Patna



## Dr. Niharika Roy

Senior Consultant - Breast Services  
Medanta - Patna



## Dr. Arunav Kumar

Consultant - Nuclear Medicine  
Medanta - Patna



## Dr. Mala Sinha

Consultant - Gynaecology and Gynae-oncology  
Medanta - Patna



## Case Study

Medanta - Noida

## Jejunal Adenocarcinoma with Limited Liver Metastasis

### Complex Multivisceral Resection with Duodenojejunostomy

Jejunal adenocarcinoma is a rare malignancy of the small intestine and is often diagnosed late due to non-specific symptoms and its deep anatomical location. Surgical management becomes particularly challenging when the tumour involves adjacent organs and lies close to major vascular structures.

#### Clinical Presentation

A 76-year-old woman presented with weakness, abdominal discomfort, recurrent vomiting, and one episode of fainting. She was found to have severe anaemia and required multiple blood transfusions.

#### Evaluation and Diagnosis

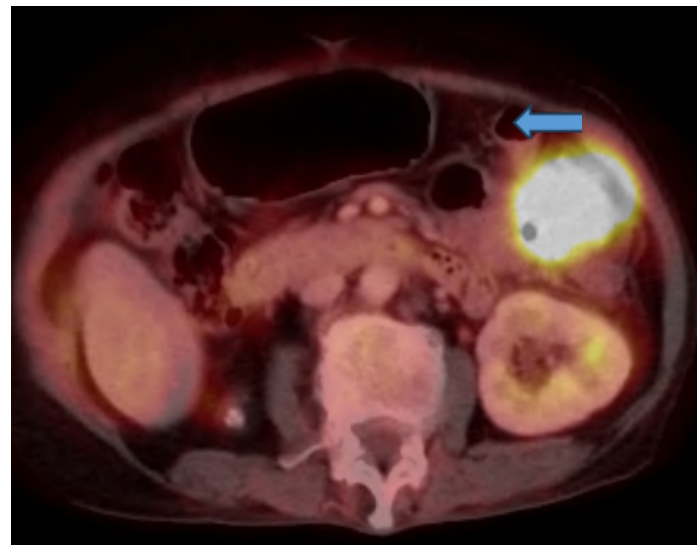
PET-CT revealed an FDG-avid mass at the duodenojejunal flexure extending into the proximal jejunum, causing

partial luminal narrowing with features of proximal obstruction. The lesion showed infiltration into the splenic flexure of the colon, along with small liver nodules suggestive of metastatic disease.

In view of locally advanced disease with limited liver involvement and severe blood loss due to the jejunal tumour, a multidisciplinary decision was made to proceed with surgical resection.



PET-CT showing an FDG-avid duodenojejunal mass with local infiltration and a suspicious liver lesion suggestive of oligometastatic disease



PET-CT demonstrating a concentric ulceroproliferative growth at the duodenojejunal flexure causing significant narrowing of the lumen with SUV Max of 12.0

#### Surgical Management

At surgery, the tumour was found arising from the duodenojejunal region with extension into the jejunum and involvement of the adjacent colon. It was densely adherent to the retroperitoneum and left lateral abdominal wall, and closely related to the stomach,

pancreas, spleen, and major blood vessels, making dissection technically demanding.

Careful dissection was performed to separate the tumour from surrounding structures without injury. The involved segment of the small intestine along with the affected portion of the colon was resected. Two small liver nodules identified intraoperatively were also excised.

Reconstruction was challenging due to the proximity of the tumour to the duodenum. A duodenojejunostomy was performed to restore gastrointestinal continuity. A feeding jejunostomy was also placed to support postoperative nutrition.

The procedure was completed without major intraoperative complications.

## Recovery

The patient was managed in the ICU postoperatively and gradually started on enteral feeding, which was well tolerated. Haemoglobin remained stable postoperatively, and recovery was steady and uneventful.

## Outcome

The patient was discharged in stable condition, tolerating oral diet well.

Histopathology confirmed moderately differentiated intestinal adenocarcinoma with limited nodal involvement and metastasis to one liver nodule, which had been addressed surgically.

## Conclusion

Jejunal adenocarcinoma remains a rare and often late-presenting malignancy.

Tumours at the duodenojejunal flexure pose significant surgical challenges due to their location and proximity to vital structures. Careful planning and a multidisciplinary approach are essential for safe resection and reconstruction.

This case demonstrates that complete resection with appropriate reconstruction is feasible even in locally advanced disease with limited metastasis.

## Dr. Vivek Tandon

Director - GI Surgery, GI Onco Surgery  
Medanta - Noida

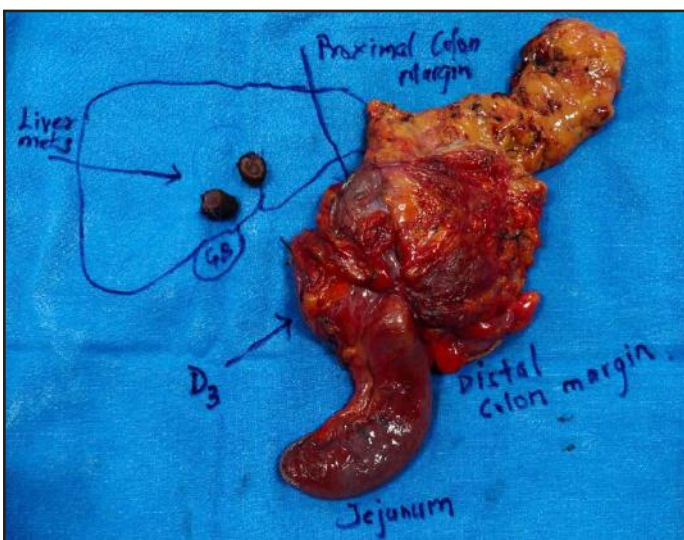


## Dr. Deepak Govil

Director - GI Surgery, GI Onco Surgery  
Medanta - Noida



Intraoperative image showing a duodenojejunal tumour with dense adhesions and adjacent organ involvement



Post-resection specimen

## Case Study

Medanta - Lucknow

### Severe Post-Infective Cervical Contracture in an Infant

#### Contracture Release with Skin Grafting and Local Flap Reconstruction

Severe post-infective contractures of the nape of the neck in infants are rare and can significantly impact feeding, growth, and overall development. Surgical management is challenging due to the patient's age, distorted anatomy, and risk of airway compromise.

#### Case Study

A one-and-a-half-year-old male child presented to Medanta - Lucknow with severe extension deformity of the neck, with inability to look straight or down. This was associated with difficulty in eating and swallowing.



Initial management during infancy

The child was also malnourished. He was evaluated further to determine the underlying cause of the deformity.

#### Evaluation and Diagnosis

The child had a history of necrotising infection over the nape of the neck during infancy, which had been managed conservatively elsewhere.

On examination, there was an extensive contracture of the nape of the neck with an unstable scar.

#### Surgical Management

Given the severity of the deformity and its functional impact, the child was taken up for surgical release with the aim of achieving complete contracture release and restoration of functional neck position.

Intraoperatively, extensive contracture bands over the nape of the neck were released to restore mobility. Reconstruction was performed using a combination of skin grafting and local skin flap advancement to achieve adequate coverage and minimise the risk of recurrence.

The case was technically demanding due to the patient's age, severity of contracture, and anticipated challenges in airway management.



Necrotising infection during infancy



Extensive post-infective cervical contracture following necrotising infection in infancy

## Recovery and Outcome

The child was managed in the ICU in the immediate postoperative period and was subsequently shifted to the ward. He received intravenous antibiotics and analgesics, along with regular graft assessment and dressings.

Gradual physiotherapy and rehabilitation were initiated to improve neck movements.

The postoperative course was uneventful. The child achieved complete release of the contracture with full range of neck movements and was able to eat and swallow normally.

He was discharged in stable condition with a satisfactory functional outcome.

## Conclusion

Severe cervical contractures following necrotising infection in infants are rare and pose significant surgical challenges.

Management is complex due to the risk of difficult airway control, potential need for airway intervention, and intraoperative technical demands. Careful perioperative planning and structured postoperative rehabilitation are essential for optimal outcomes.

This case demonstrates that effective contracture release and reconstruction can be achieved safely, with good functional recovery, even in high-risk paediatric patients.

## Dr. Nikhil Puri

Director - Plastic, Aesthetic & Reconstructive Surgery

Medanta - Lucknow



## Dr. Ashish Ukey

Senior Consultant - Plastic, Aesthetic & Reconstructive Surgery

Medanta - Lucknow



Postoperative image demonstrating complete contracture release and restoration of functional neck position

## Kudos

### CONGRATULATIONS



#### Dr. Randeep Guleria

Chairman  
Institute of Internal Medicine and  
Respiratory & Sleep Medicine, Medanta - Gurugram

on being recognised among the  
**World's Top 5% Scientists** in the  
**2025 SciRank Global Registry**,  
a testament to his outstanding contributions to  
medical research and academic scholarship.

## Spotlight

### CELEBRATING A MILESTONE OF CARE



### KIDNEY TRANSPLANTS

A defining moment in our journey of care

#### At Medanta Lucknow

we mark another significant step in our journey of  
saving and improving lives through advanced  
kidney transplant care.

## Welcome Onboard



#### Dr. Arbind Lal Das

HOD and Senior Consultant - Internal Medicine  
Medanta - Ranchi

Dr. Das specialises in internal medicine with a focus on comprehensive patient care, including management of diabetes, cardiovascular conditions, infectious diseases, and acute medical emergencies.



#### Dr. Anubhav Bansal

Consultant - Cardiovascular and  
Thoracic Surgery  
Medanta - Lucknow

Dr. Bansal specialises in cardiac surgery with expertise in coronary bypass and valve surgeries, along with advanced cardiac procedures such as ECMO, TEVAR, and TAVI.



#### Dr. Chandralekha

Associate Consultant - Dental Sciences  
Medanta - Patna

Dr. Chandralekha specialises in oral and maxillofacial surgery, with a focus on facial trauma, impacted tooth extraction, and management of jaw pathologies and temporomandibular disorders.



#### Dr. Anish Kumar

Associate Consultant - Surgical Oncology  
Medanta - Ranchi

Dr. Kumar specialises in surgical oncology, including head and neck, breast, and gastrointestinal cancers, with experience in oncologic and reconstructive procedures.





## Dr. Kshitij Lochab

Associate Consultant - Gastroenterology and Hepatology

Medanta - Gurugram

Dr. Lochab specialises in gastroenterology and hepatology, including advanced endoscopy, pancreaticobiliary disorders, and management of complex gastrointestinal and liver diseases.



## Dr. Sushrut Gupta

Associate Consultant - Nephrology

Medanta - Gurugram

Dr. Gupta specialises in nephrology, with expertise in chronic kidney disease, dialysis care, and renal transplantation, including interventional nephrology procedures.



## Dr. Guruaribam Malavika Sharma

Associate Consultant - General Anaesthesia

Medanta - Gurugram

Dr. Sharma specialises in anaesthesiology, including perioperative care, transplant anaesthesia, and management of critically ill patients.



## Dr. Atlanta Talukdar

Associate Consultant - General Anaesthesia

Medanta - Gurugram

Dr. Talukdar specialises in anaesthesiology and critical care, including perioperative management, complex anaesthesia, and care of critically ill patients.



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

## Medanta Network

### Hospitals

#### Medanta - Gurugram

Sector - 38, Gurugram, Haryana | Tel: 0124 4141 414 | info@medanta.org

#### Medanta - Lucknow

Sector - A, Pocket - 1, Sushant Golf City, Amar Shaheed Path, Lucknow | Tel: 0522 4505 050

#### Medanta - Patna

Jay Prabha Medanta Super-Speciality Hospital, Kankarbagh Main Road, Kankarbagh Colony, Patna  
Tel: 0612 350 5050

#### Medanta - Ranchi

Medanta Abdur Razzaque Ansari Memorial Weavers', P.O. Irba, P.S. Ormanjhi, Ranchi | Tel: 1800 891 3100

Medanta - Hospital, Ranchi  
NH 33, P.O. Irba, P.S. Ormanjhi, Ranchi | Tel: 1800 891 3100

#### Medanta - Indore

Plot No. 8, PU4, Scheme No. 54, Vijaynagar Square, AB Road, Indore | Tel: 0731 4747 000

#### Medanta - Noida

Plot No. F-16, Block-F, Sector 50, Noida, Gautam Buddha Nagar, U.P. | Tel: 0120 3141 414

### Mediclinics

#### Defence Colony

E - 18, Defence Colony, New Delhi | Tel: 011 4411 4411

#### 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

562 SP, Sector 27, Golf Course Road, Gurugram | Tel: 0124 6930 099

#### Ranchi

Shah Corporate, Kutchary Road, Opp. Atal Smriti Vendor Market, Ranchi | Tel: 1800 891 3100

**Medanta Helpline: 88-0000-1068**

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