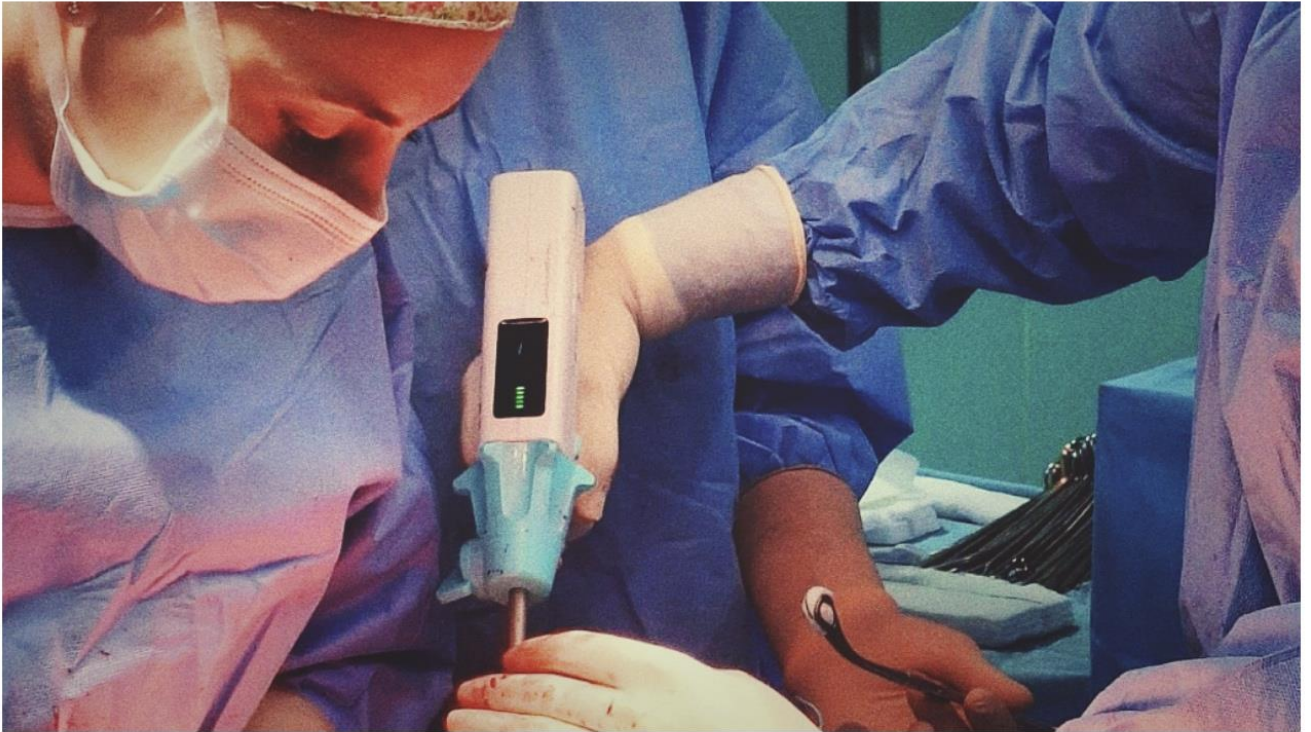




Left Thoracotomy Pneumonectomy for T4N1 Adenocarcinoma After Chemoimmunoadjuvant Therapy:

July 22, 2025



A Case Supporting the Safety of Two-Staple Line Technology

Performed by

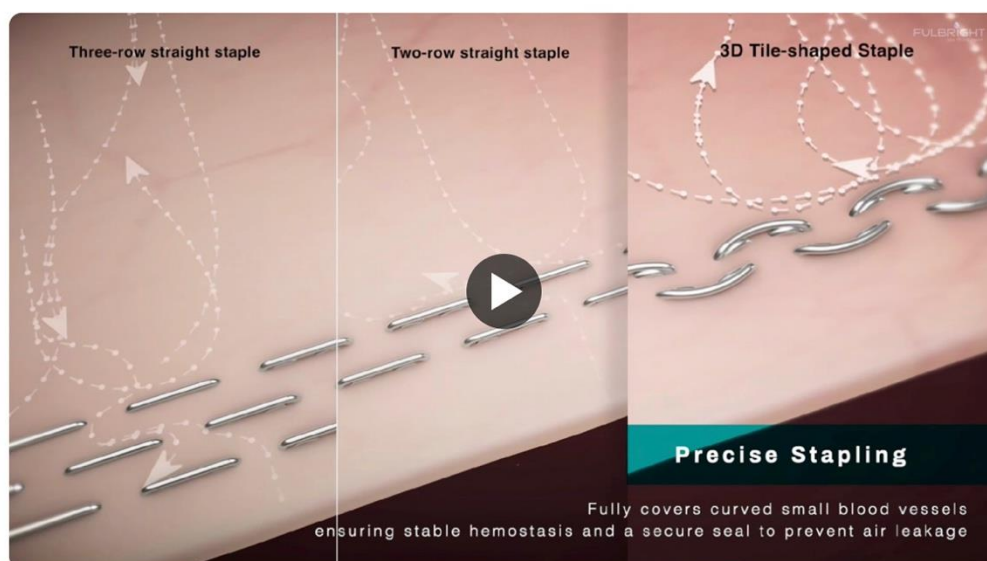
Dr. Dionisio Espinosa Jiménez , Head of department of Hospital Puerta del Mar de Cádiz. & **Dra. Mireia Rusca**, Recently awarded as the best thoracic resident in Spain.

We report a case of T4N1 lung adenocarcinoma treated with chemoimmunoadjuvant therapy, achieving stable disease and requiring a left thoracotomy pneumonectomy. The surgery was performed by a high-level surgical team including Dr. Dionisio Espinosa and Dra. Mireia Rusca. This case exemplifies the feasibility and safety of using a two staple line technique in highly demanding thoracic oncological resections, challenging conventional preferences for three staple line staplers.

Case Presentation

A patient diagnosed with T4N1 lung adenocarcinoma underwent chemoimmunoadjuvant treatment, resulting in disease stability. Despite the ideal approach for such cases being video-assisted thoracoscopic surgery (VATS) to maximize minimally invasive benefits, the extent and complexity of this case necessitated an open approach via left thoracotomy.

The pneumonectomy was successfully performed by Dr. Dionisio Espinosa and Dra. Mireia Rusca. Notably, the procedure was carried out using a latest **3D Tile-shaped Staple technology using a two staple line configuration**, in contrast to the standard **three staple line** preferred by most thoracic surgeons in similar high-risk settings. Prior to the development of **3D Tile-shaped Staple technology**, such cases would have invariably involved a three-line stapler due to concerns over tissue compression and staple security.



3D Tile-shaped Staple



Left Thoracotomy Pneumonectomy Using the THORAPLER Stapling System

Discussion

This case is an extremely example that proves the safety of 2 staple line vs 3 staple line. Ideally it should be by thoracoscopy in order to achieve the maximum benefits in terms of being minimally invasive, but the case is really challenging for the technology. Previously to Fulbright 3D Tile-shaped Staple development, 100% of surgeons would have chosen a 3 staple line stapler to perform this case.

Conclusion

This complex case of T4N1 adenocarcinoma treated with chemoimmunoadjuvant therapy and managed via open left pneumonectomy supports the clinical safety and technical reliability of two staple line stapling systems in high-demand thoracic surgery, even in technically challenging resections involving central tumors and major vascular structures.

The surgical outcome was uneventful, and staple line integrity was confirmed intraoperatively. It demonstrates that two-line stapling is a viable option even in high-risk thoracic procedures, challenging traditional reliance on three-line devices.

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