BIPORTAL ROBOTIC RIGHT S2-S3 BISEGMENTECTOMY IN A COPD PATIENT WITH B1 ANATOMICAL VARIATION: A COMPLEX AND UNCOMMON COMBINED SEGMENTECTOMY

Valdivia, Daniel; Alturki, Ahmad; Carrero-Gomez Francisco Javier; Kusber; Sohal; Koziej Paul-Henri

Department of Thoracic Surgery, Klinikum Bielefeld, University of Bielefeld, Germany

a) Introduction Right S2-S3 bisegmentectomy is an uncommon procedure, particularly in patients with anatomical variations. To date, no similar procedures using the da Vinci robotic system have been reported; published evidence is limited to a case performed via video-assisted thoracoscopic surgery (VATS). Three-dimensional (3D) reconstruction (Materialise®) is essential for planning complex pulmonary segmentectomies, enhancing precision and safety. b) Indication of the technique We present the case of a 62-year-old male with Chronic Obstructive Pulmonary Disease (COPD) GOLD II and a 35 pack-year smoking history. A progressive lesion suspected of malignancy was identified in the right upper lobe, between segments S2 and S3, not easily accessible by needle biopsy. Primary surgery with the Da Vinci robotic system was chosen after 3D reconstruction confirmed an anatomical variation with an independent B1 bronchus. A comprehensive pulmonary function assessment indicated the patient could tolerate surgery. c) Description of the technique A right S2-S3 bisegmentectomy using a biportal approach with the da Vinci robotic system was performed. Intraoperative frozen section confirmed a pulmonary adenocarcinoma (stage IA2). Fluorescence with ICG was employed to better delineate resection margins. The patient was discharged on the fifth postoperative day and remains disease-free six months after surgery. d) Conclusion Robotic surgery combined with preoperative 3D reconstruction is a safe approach that facilitates complex and uncommon pulmonary segmentectomies, even in the presence of significant anatomical variations.