

THE ROLE OF ADVANCED IMAGINE AND 3D RECONSTRUCTION IN ROBOTIC THORACIC SURGERY FOR CHALLENGING CASES

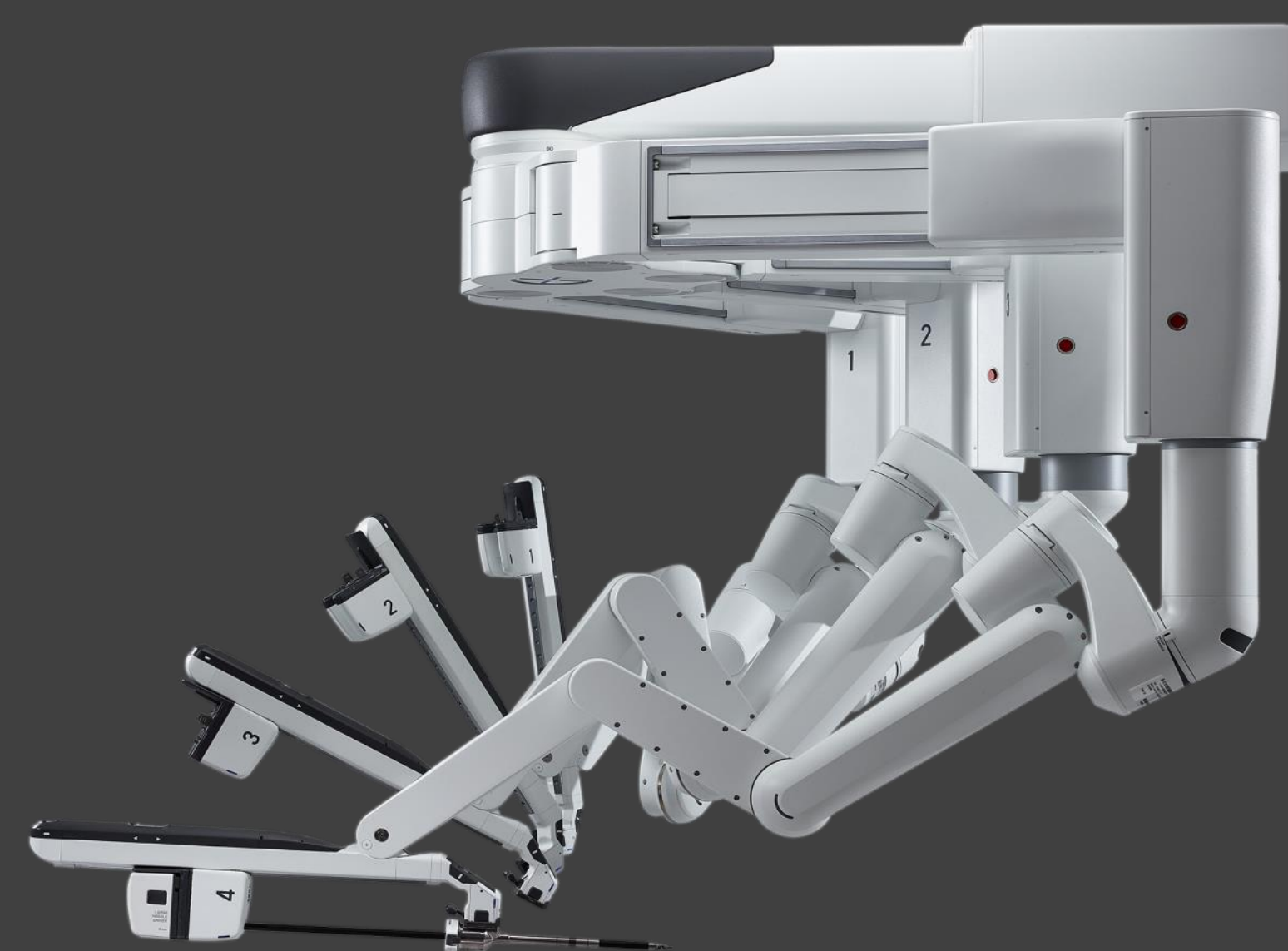
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Objective:

To illustrate the role of 3D anatomical model, based on the CT images, in pre-operative planning for robotic challenging cases.

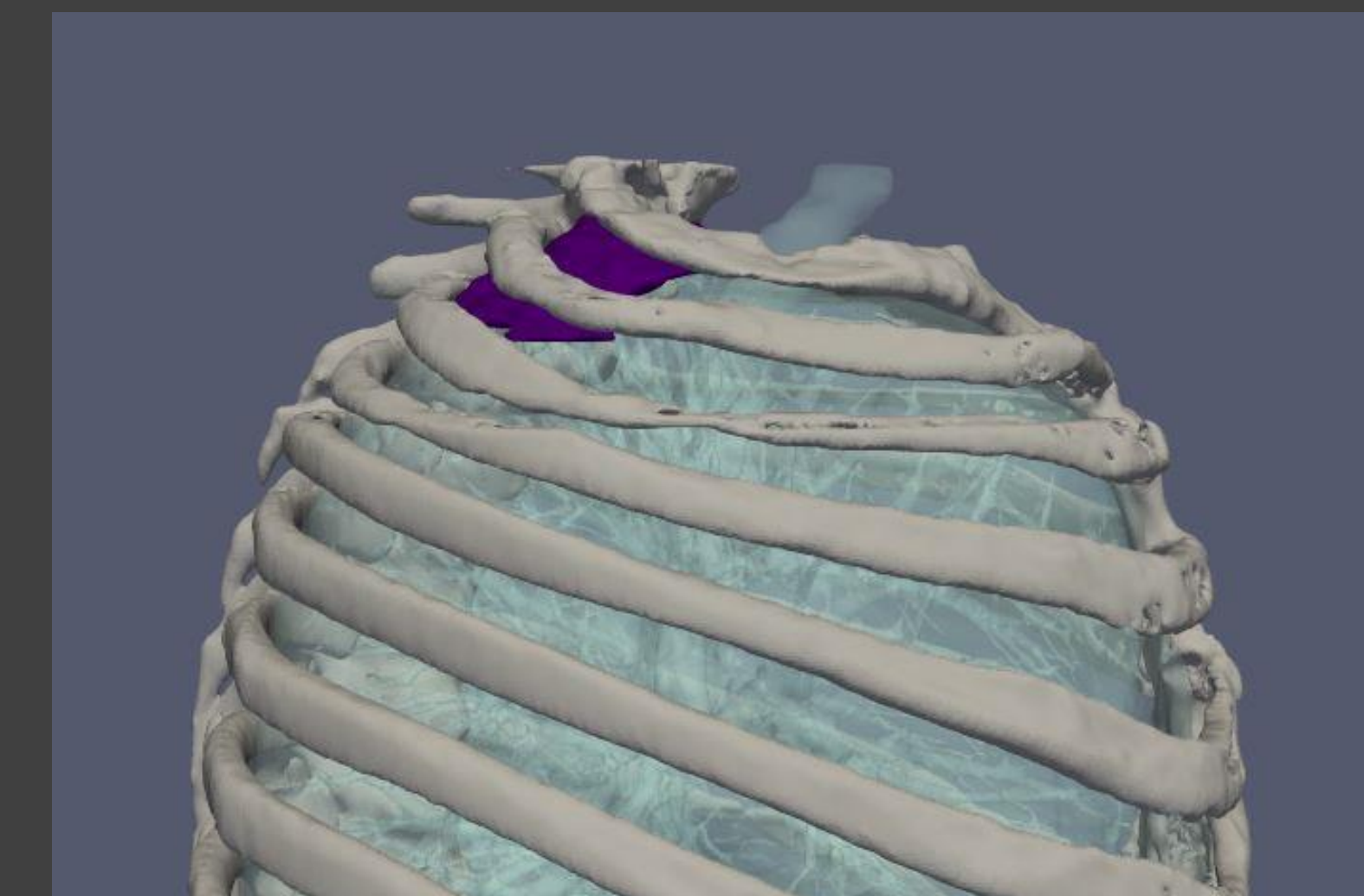
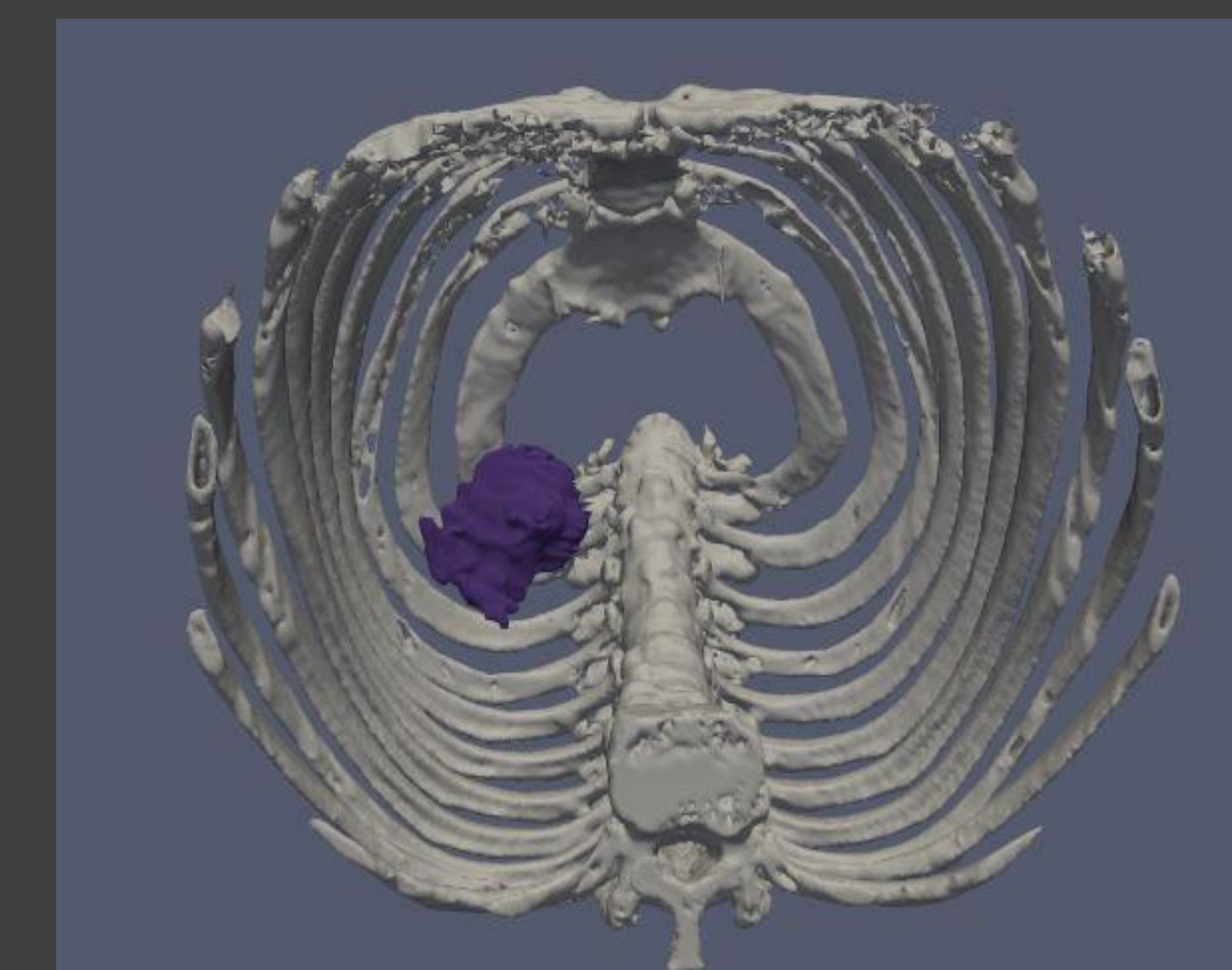
Methods:

A sample of three challenging cases in robotic thoracic surgery were selected. All patients have been evaluated with a preoperative CT scan and a 3D reconstruction was performed ("3D Slicer image computing platform"). Subsequently, a specific surgical strategy for each case was planned. All the surgical procedures were performed using a fully four-arm Robotic approach.

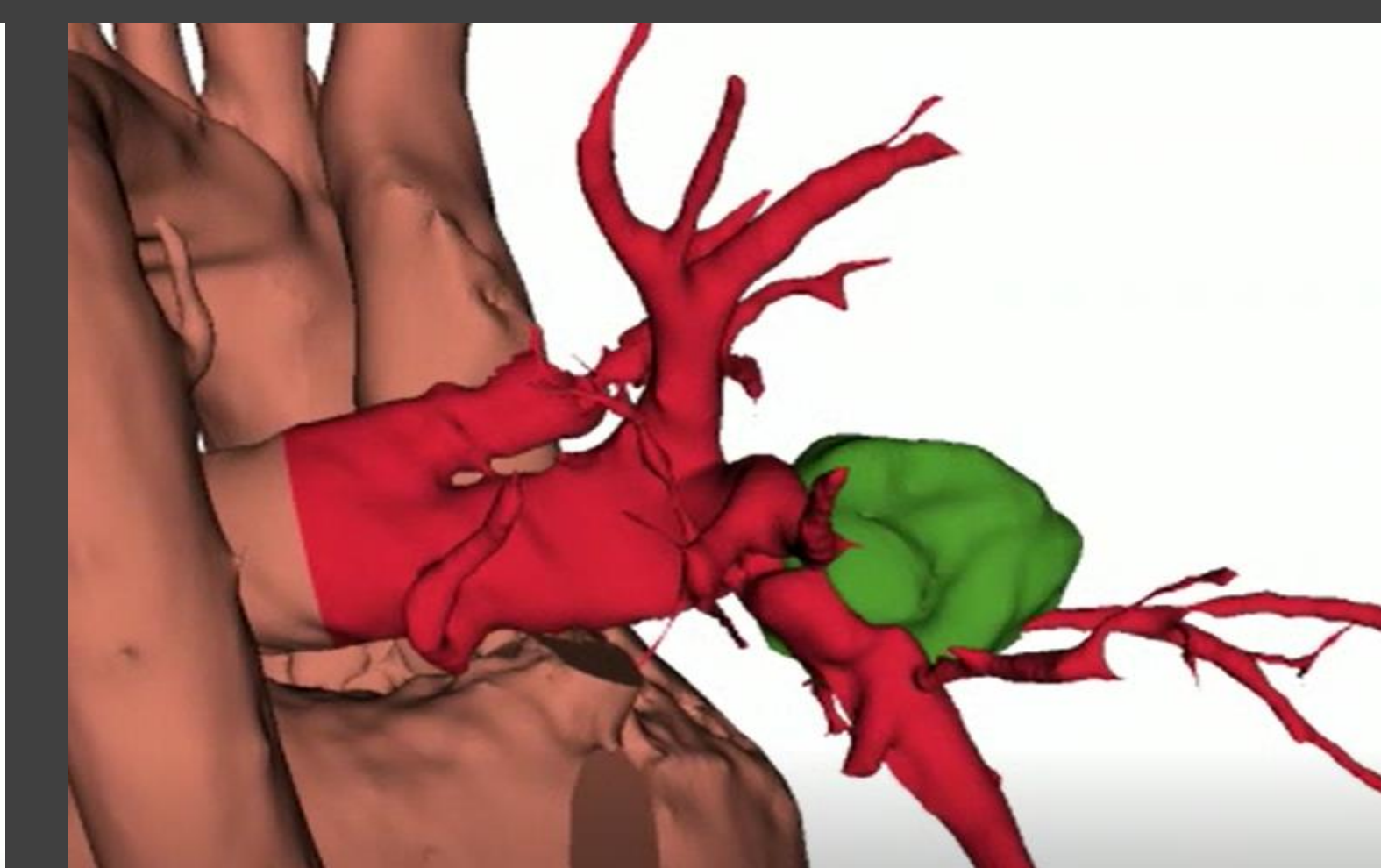
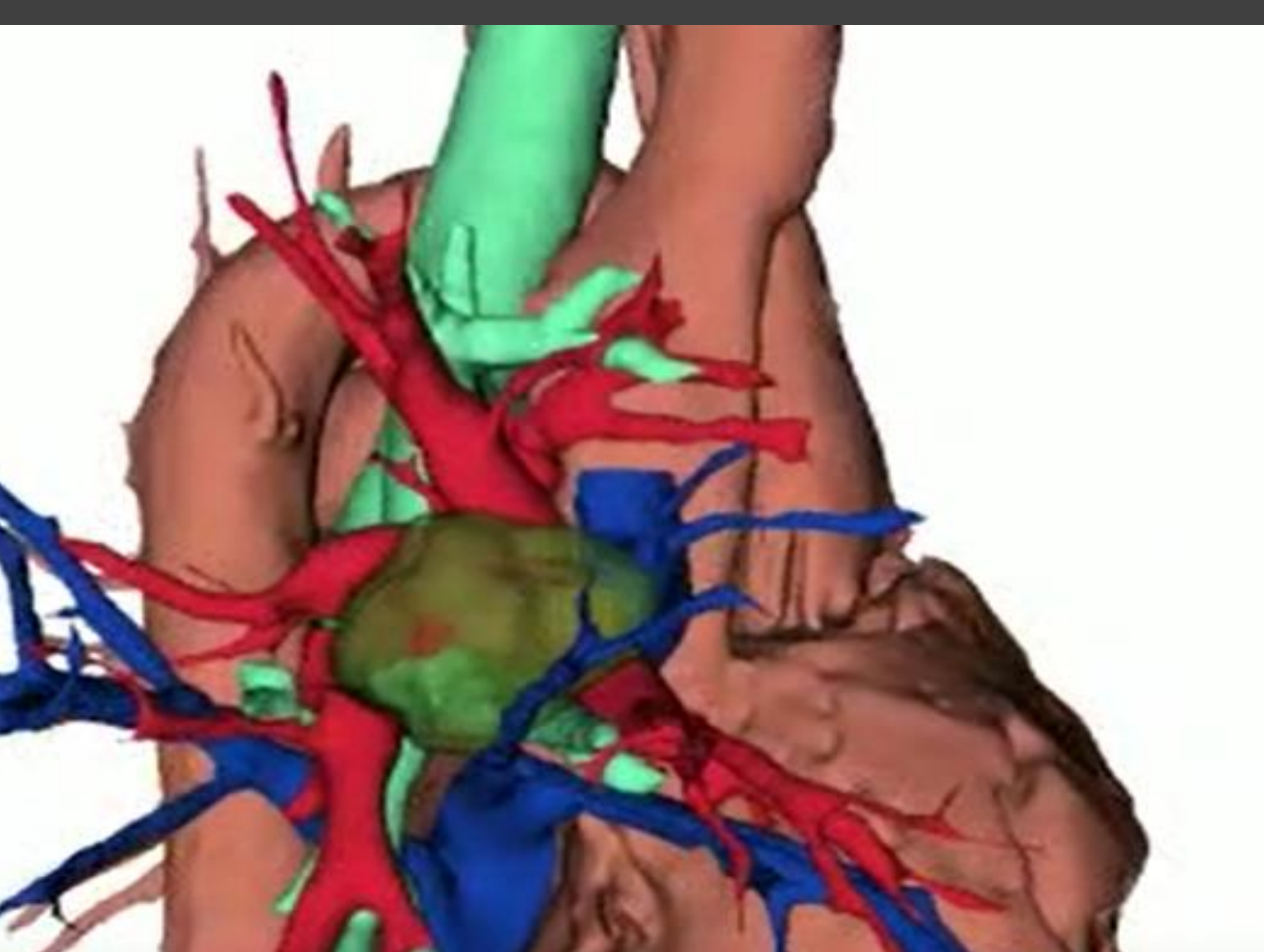
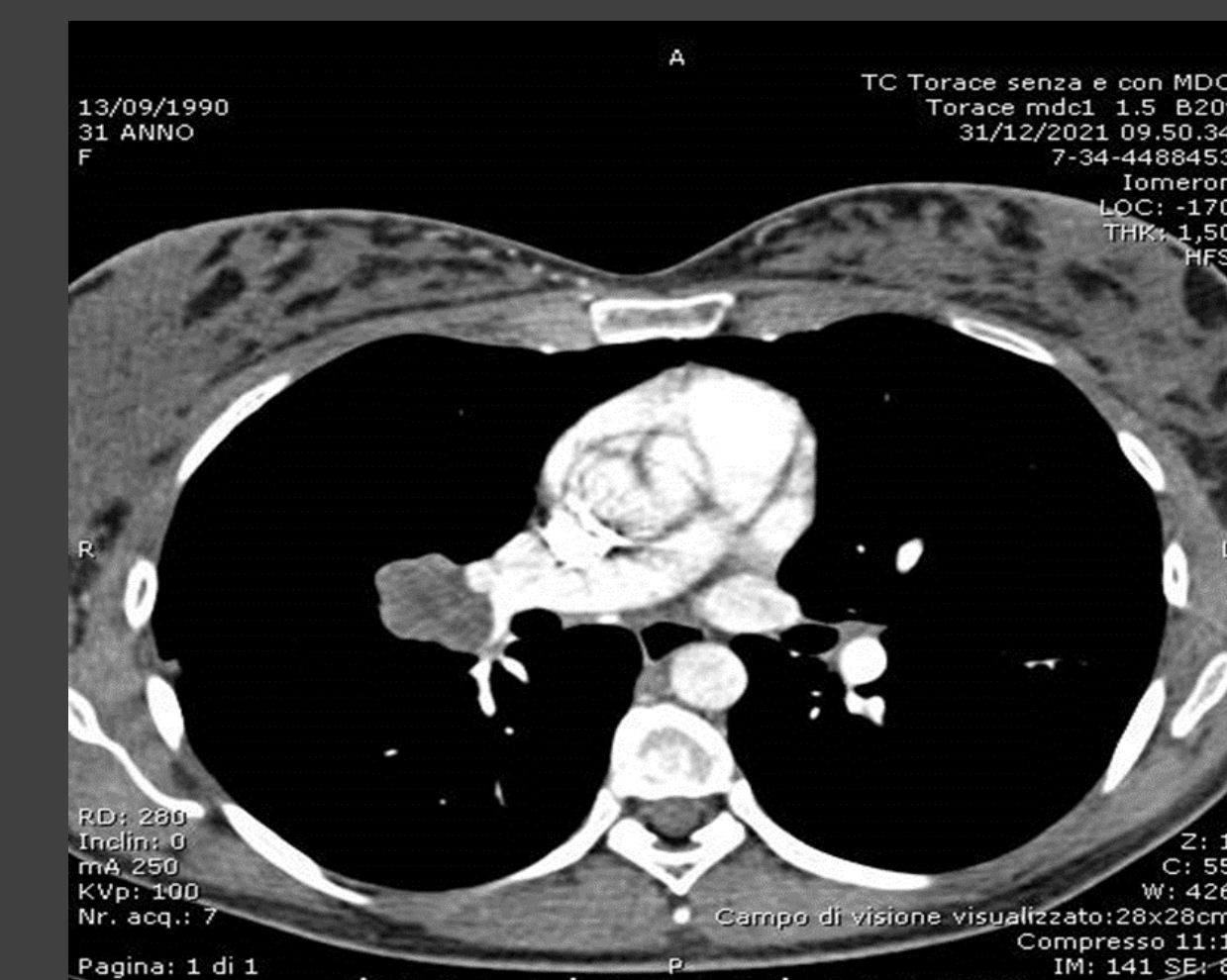


Results:

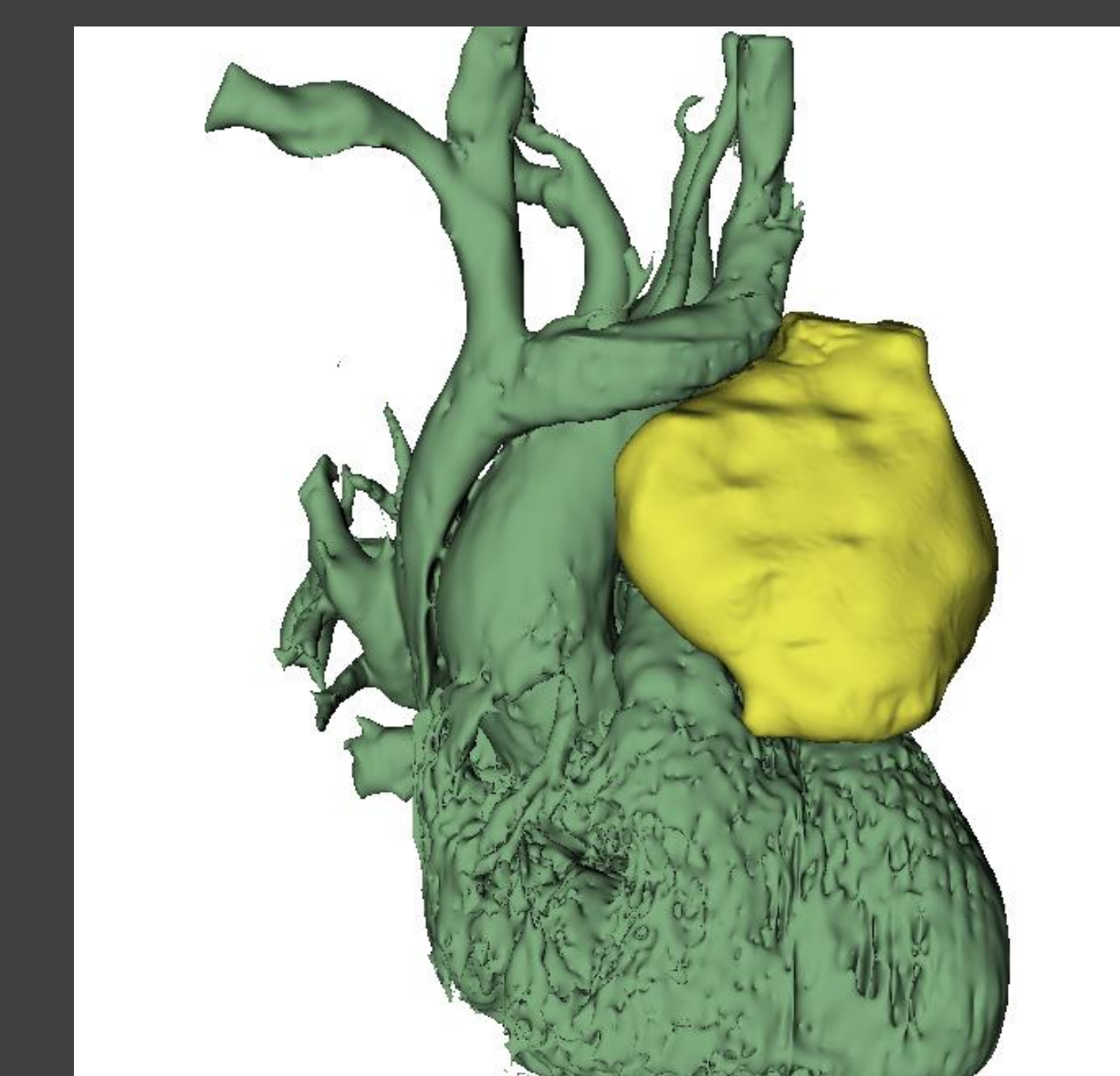
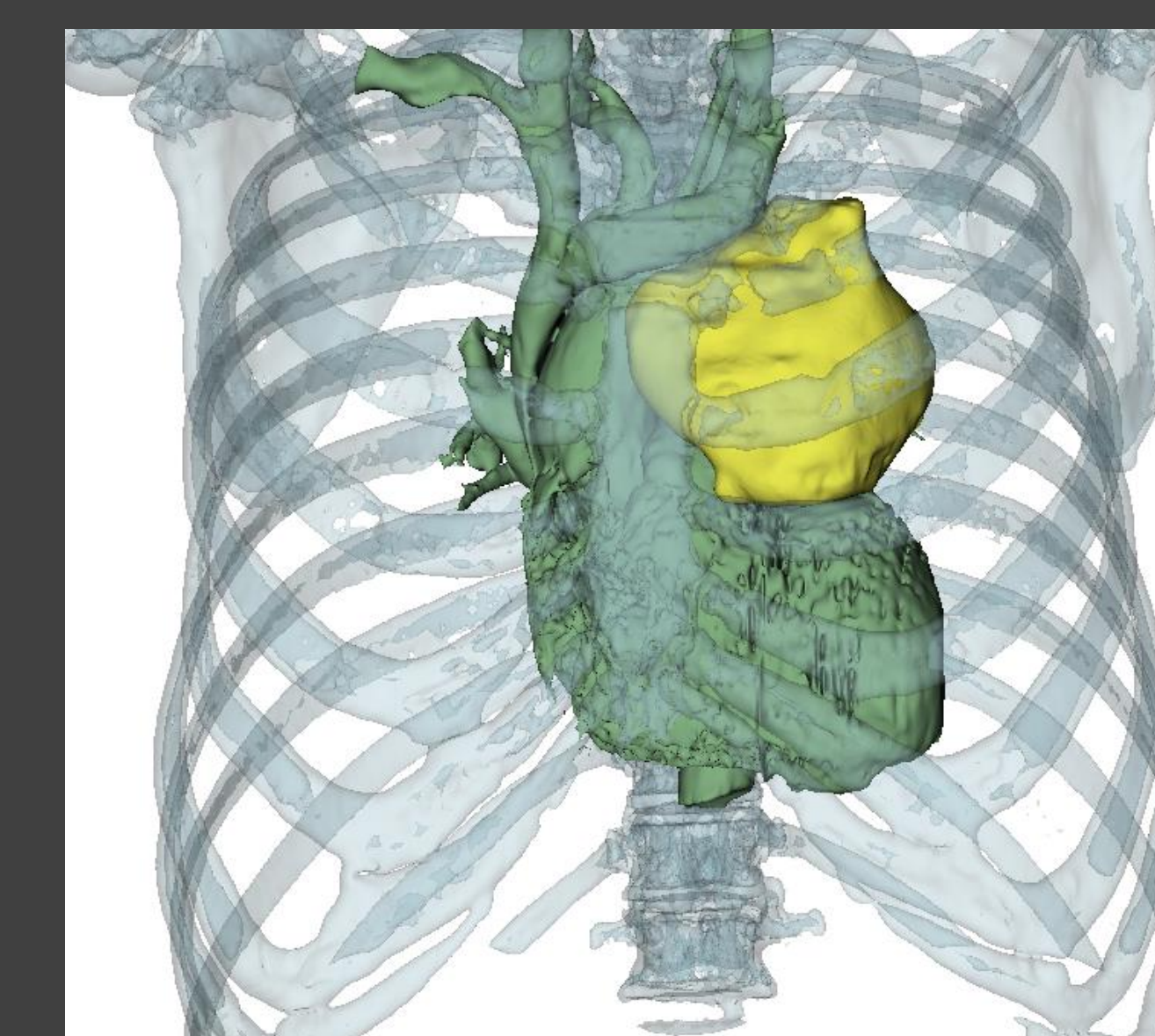
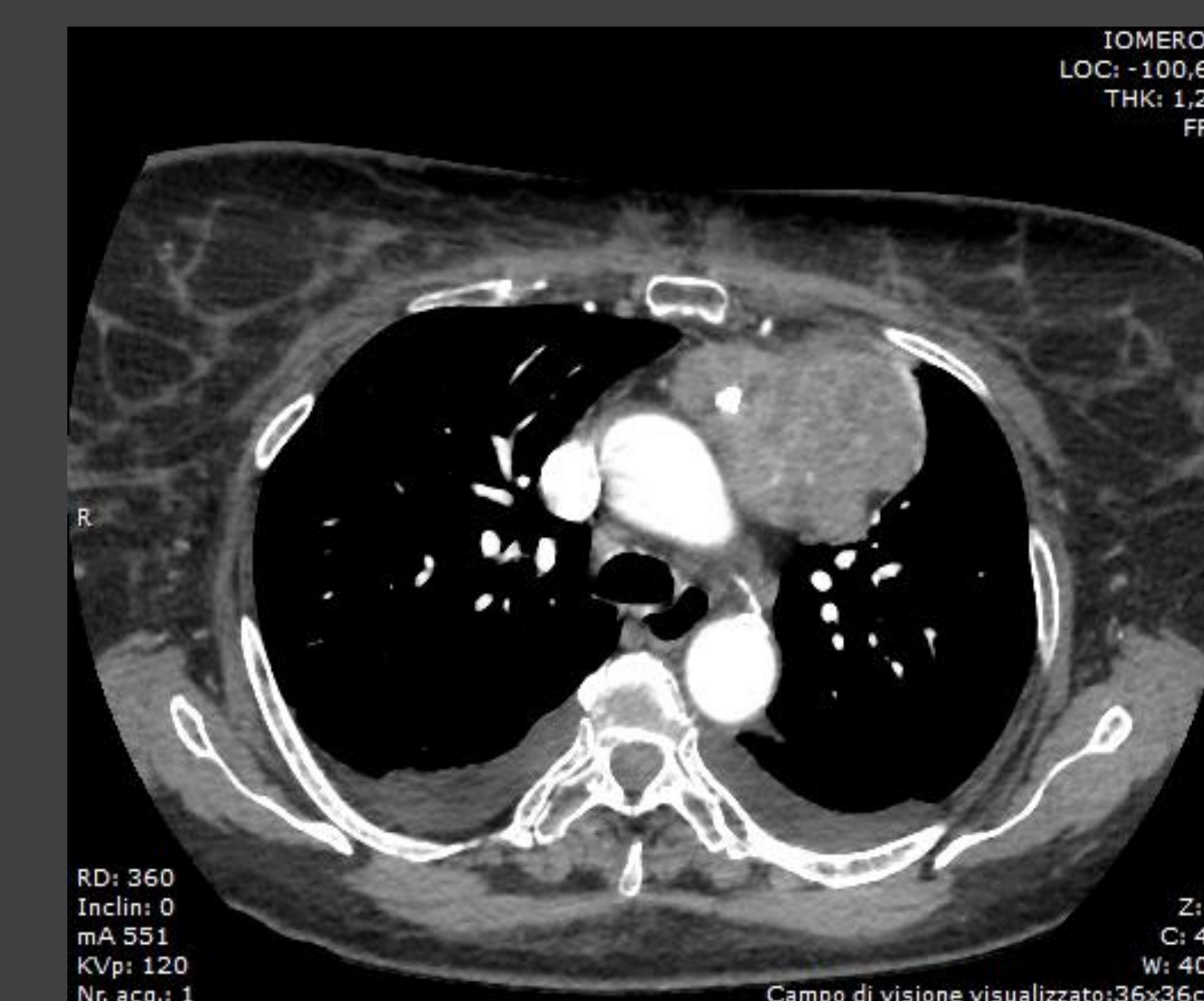
Case 1 Patient diagnosed with NSCLC of the right upper lobe, suspected to infiltrate the chest wall, who underwent neoadjuvant chemo-radiotherapy. The 3D reconstruction has allowed to define the anatomical relationship between the tumor and the chest wall and to perform a lobectomy with Robotic technique.



Case 2 NSCLC of Right Lung strictly adherent to hilar structures with a suspected infiltration of lower right artery; the reconstruction showed the anatomical relationship between the cancer and the hilar structures and a totally Robotic lower bilobectomy was performed



Case 3 Thymic carcinoma of 8.5 cm of diameter close to the aortic arch with a compression of the main trunk of the left pulmonary artery. The 3D reconstruction allowed to plan the procedure so as to perform a thymectomy with Robotic approach.



Conclusion: The application of 3D reconstruction before surgery allowed to adequately plan the procedure with robotic technique