

Uniportal Robot Assisted Thoracic Surgery: Is it Feasible and Safe?

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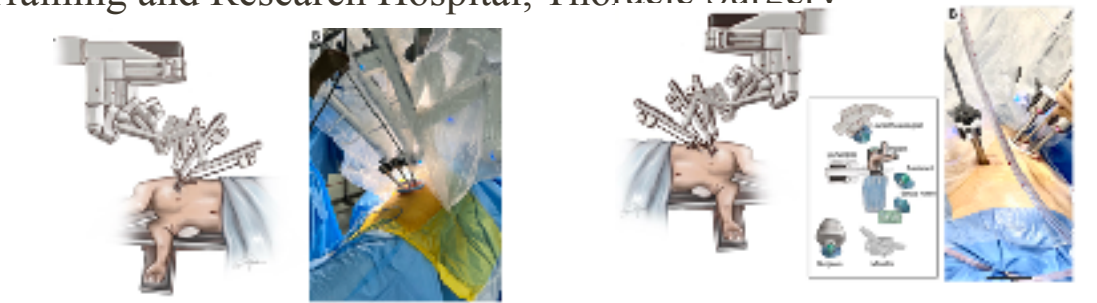
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Objective: Over the years, advancements in thoracic surgery technology have led to the gradual replacement of open surgery with video-assisted thoracic surgery (VATS) techniques. Comparable perioperative, early, and late postoperative outcomes were reported when comparing video-assisted thoracic surgery and robot-assisted thoracic surgery (RATS). Recently, RATS has begun incorporating uniportal robotic approaches, marking a significant step forward in minimally invasive thoracic surgery.

Patients and Methods: This study included 19 patients who underwent URATS between 2022 and 2024. Patients were evaluated based on demographic and clinical data, with a focus on surgical characteristics, mortality, and morbidity.

Table 1: Performed Operations via Uniportal Robot Assisted Thoracic Surgery

Procedure	n(%)
Pneumonectomy	1(5.3)
Carinal resection and reconstruction	1(5.3)
Lobectomy	8(42.1)
Segmentectomy	6(31.9)
Extended thymectomy	2(10.6)
Diaphragmatic plication	1(5.3)
Total	19(100)



Results: Nineteen patients underwent URATS between 2022 and 2024. Of these, 8 (42.1%) were female, and 11 (57.9%) were male, with a mean age of 64.0 ± 9.8 years (range: 41–76). Indications for surgery included primary lung cancer in 16 patients (84.2%), diaphragmatic eventration in 1 patient (5.3%), and thymoma in 2 patients (10.5%). The mean smoking history was 33 ± 29 pack-years. Four patients (21.1%) had received neoadjuvant chemotherapy and radiotherapy, and one patient (5.3%) had received neoadjuvant chemotherapy alone. Performed surgical procedures are shown in Table 1. Of the procedures, 10 were right-sided URATS, and 9 were left-sided URATS. One patient (5.3%) required conversion to thoracotomy due to intraoperative bleeding. The mean postoperative drainage volume was 500 ± 450 cc, with a mean drain duration of 2.4 ± 1.2 days. Postoperative complications included pneumonia, postoperative atelectasis and empyema and bronchopleural fistula 1 patient (5.3%) each. Only 1 patient (5.3%) required hospital readmission. The 30-day mortality rate was 5.3% (1 patient).

Discussion: Uniportal robot-assisted thoracic surgery (URATS) represents a significant advancement in minimally invasive approaches, offering benefits such as reduced postoperative pain and fewer incisions. In our study, we demonstrated that URATS is both a safe and feasible surgical approach. As robotic technology continues to evolve, we anticipate a growing adoption of URATS in thoracic surgery practices worldwide.