ROBOTIC-ASSISTED TRANSCERVICAL MEDIASTINOSCOPIC THORACIC ESOPHAGECTOMY (RACE): A COMPARATIVE STUDY WITH ROBOTIC-ASSISTED THORACOSCOPIC MINIMALLY INVASIVE ESOPHAGECTOMY (RAMIE)

Program # P577

Takeo Fujita[1)], Kazuma Sato[1)], Daisuke Kajiyama[1)], Yuto Kubo[1)], Hiroyuki Daiko[2)]

1): Division of Esophageal Surgery, National Cancer Center Hospital East, Japan. 2): Division of Esophageal Surgery, National Cancer Center Hospital, Japan

— All Activities for Cancer Patients —

National Cancer Center Hospital East, Japan

Introduction

Transcervical mediastinoscopic esophagectomy is a less invasive, non-thoracic option for thoracic esophageal cancer, benefiting high-risk patients. However, its limited workspace and risk of nerve injury pose challenges. Using a robotic system may improve precision and reduce complications. This study evaluates Robot-Assisted Cervical Esophagectomy (RACE) outcomes compared to RAMIE.

Methods

At our institution, RACE is performed for patients unsuitable for a thoracic approach. Using a bilateral cervical incision, the da Vinci system was applied similarly to standard mediastinoscopic esophagectomy. We analyzed 40 RACE cases from 2023 to June 2024 and compared them with RAMIE cases from the same period.

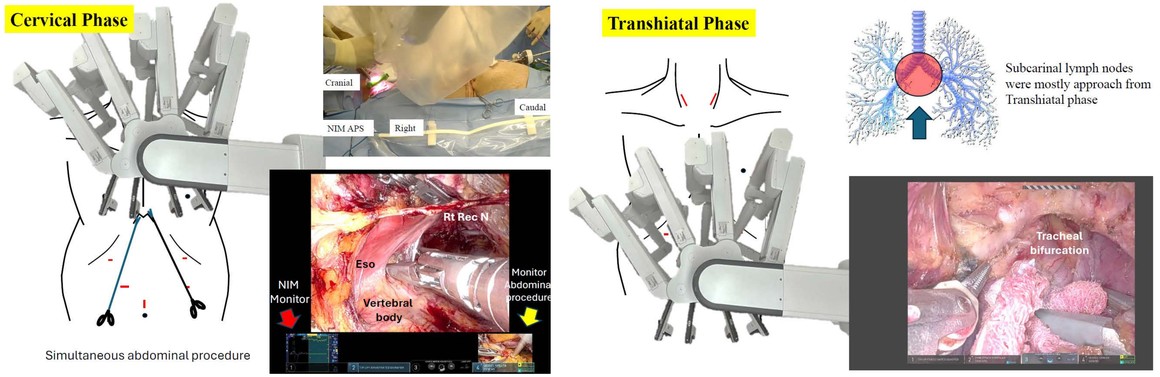
Results

The patient cohort had an average age of 75.0 years, with 35 males and 5 females. Clinical stages were distributed as follows: Stage I (17), Stage II (5), Stage III (14), and Stage IV (4). Prior treatments were noted in 52.7% of patients, and 87.5% had a history of systemic or pulmonary diseases. All RACE procedures were completed successfully with no intraoperative complications. Postoperative complications (Clavien-Dindo Grade ≥1) included recurrent laryngeal nerve palsy in 12.5% of patients and pneumonia in 5.0%. These complication rates were favorable when compared with the RAMIE cases performed during the same period.

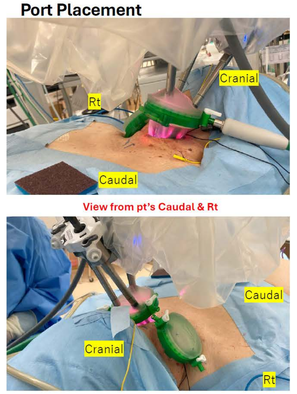
Conclusions

RACE is a feasible and relatively safe technique for esophagectomy. The rates of nerve palsy and respiratory complications were acceptable, making it a potential option for patients unsuitable for a thoracic approach. Further studies are needed to validate these findings and expand its application.

Docking summary of robot in RACE



Port Placement



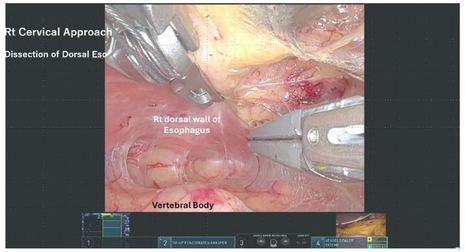
RACE vs. RAMIE

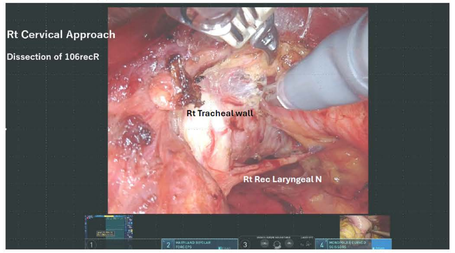
(All Robot 2020/1~24/6, n=319) Post-operative events (%) (Clavien-Dindo ≥ 1)

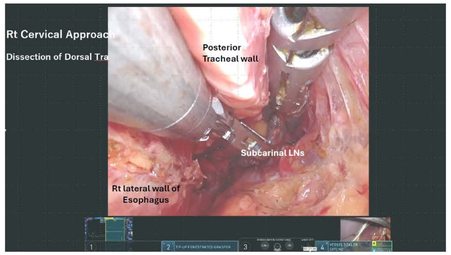
Variables	RACE group (n = 40)	RAMIE group (n = 283)	p-value
Complications			
Pneumonia	2 (5.0)	27 (13.3)	0.11
Arrhythmia	6 (15.0)	16 (7.8)	0.30
Recurrent nerve palsy	5 (12.5)	20 (9.9)	0.73
30-days SSI	6 (15.0)	21 (10.3)	0.30
Postoperative hospital stay (Median)	19.0	16.0	0.15
In hospital death (%)	0 (0.0)	1 (0.4)	0.10

Representative surgical view in bilateral RACE

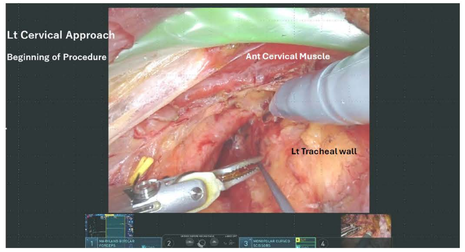
Right Cervical Approach

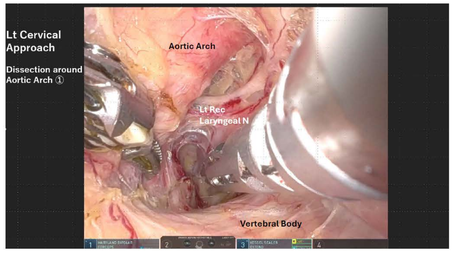


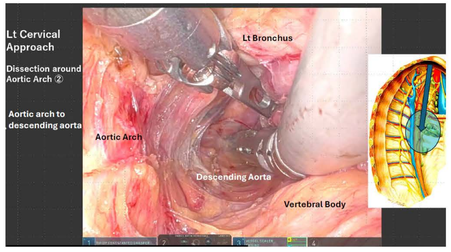




Left Cervical Approach







——SUMMARY——

✓ RACE is a feasible and relatively safe technique for esophagectomy.

✓ RACE is viable for patients with thoracic contraindications due to its acceptable complication.

Takeo Fujita MD, PhD, FACS
Division of Esophageal Surgery
National Cancer Center Hospital East, Japan
takfujit@east.ncc.go.jp

You Can Watch Video of This Procedure

The authors would like to thank all the patients and their families for participating this study and thank all investigators for their contribution.
The authors are also grateful to the members of the Division of Gastrointestinal Oncology, Division of Anesthesiology and Division of Clinical Pathology Office for their support in this study.

Takeo FUJITA
WhatsAppの連絡先

— All Activities for Cancer Patients — **National Cancer Center Hospital East, Japan**