



Memorial Sloan Kettering
Cancer Center

Robotic Thymectomy

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Memorial Sloan Kettering
Cancer Center



Robotic Thymectomy

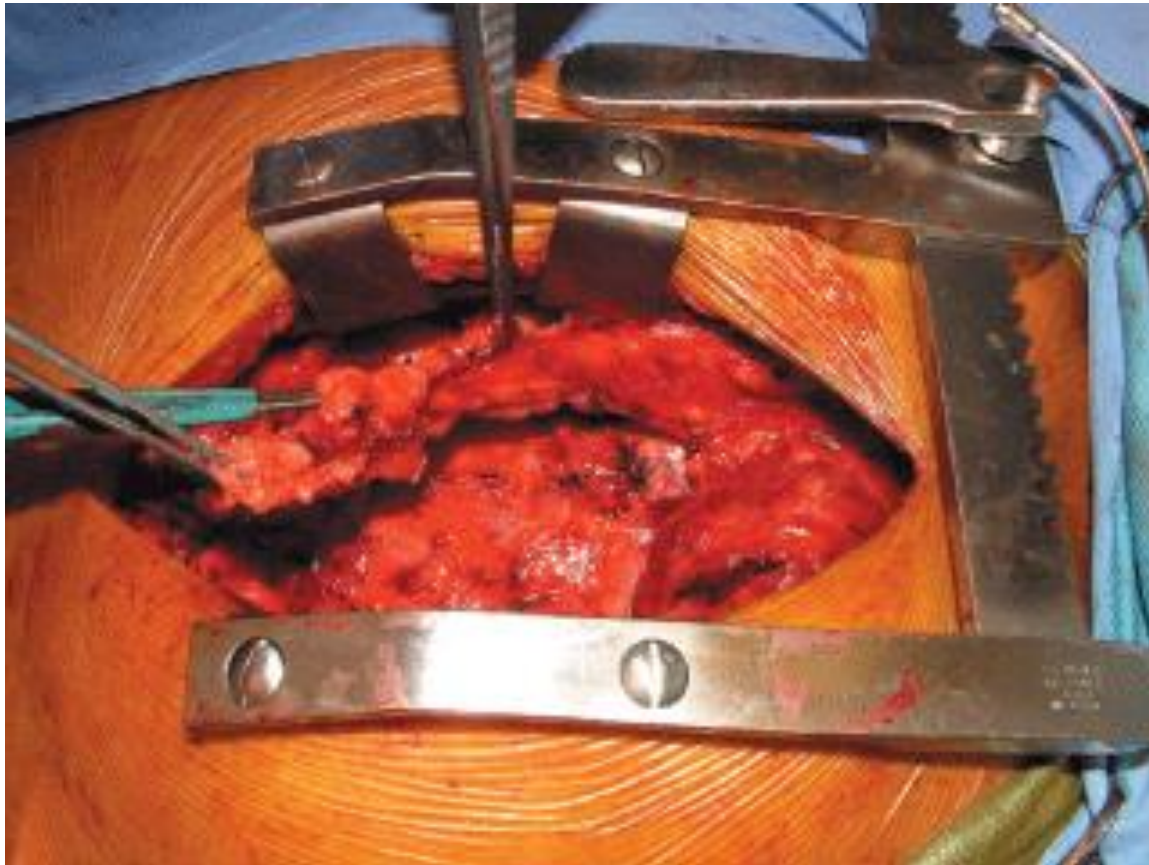
Disclosures

- **Bard: Speaker's bureau**
- **Baxter: Consulting**



Robotic Thymectomy

Standard Approach





Robotic Thymectomy

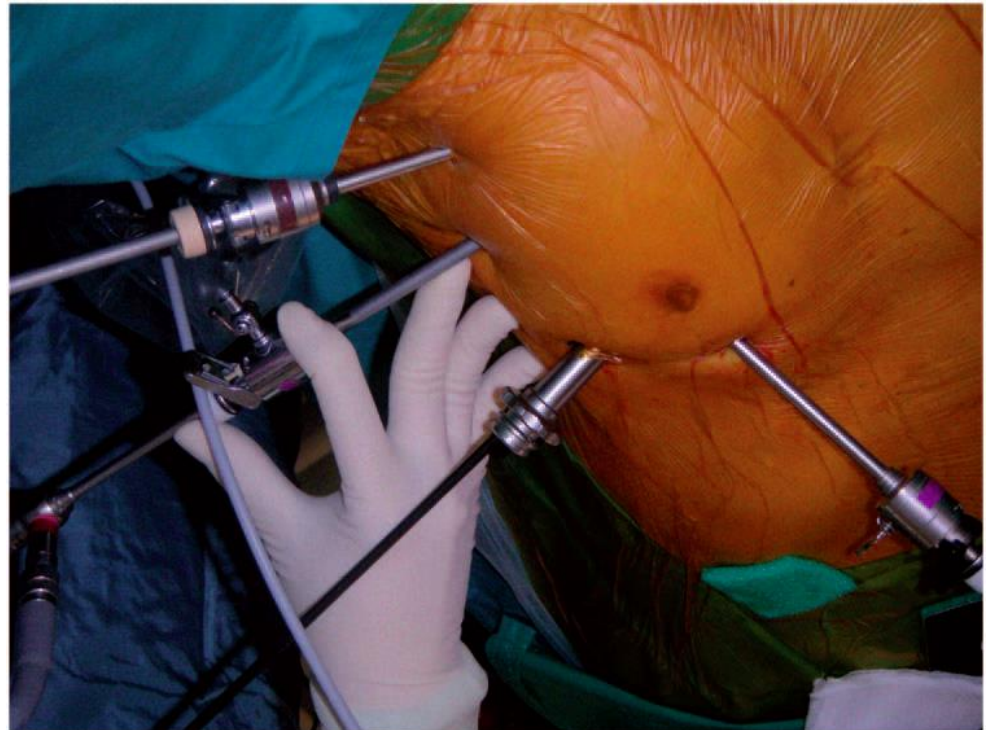
VATS Thymectomy

- **Several published series for myasthenia gravis**
- **Some series for deliberate treatment of thymoma (10)**
- **Variable approaches: left, right, bilateral**

Robotic Thymectomy

VATS Thymectomy

- Recent series of 119 patients over 10-year period with 58 thymomas (32 associated with MG)
- Right-sided approach, 4 incisions



Thirugnanam A and Lin S. Asian Cardiovas Thorac Ann 2010;18





Robotic Thymectomy

VATS Thymectomy

- **Mean thymoma size 50 mm (10-90 mm)**
- **25 Stage I, 25 Stage II, 7 Stage III, 1 Stage IVA**
- **2 local recurrences (1 Stage I, 1 Stage 3)**
- **No deaths with mean f/u 4.9 years**

Robotic Thymectomy

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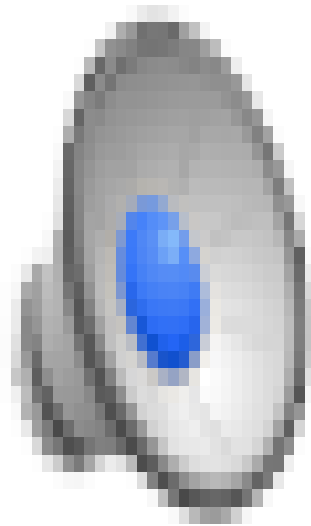
- 3- arm approach
- Camera: 4-5th ICS
anterior axillary line
- Left arm: inframammary
fold, mid-clavicular line
- Right arm: 2-3rd ICS
anterior axillary line
- Left or right





Robotic Thymectomy

Robotic Thymectomy





Robotic Thymectomy

Robotic Thymectomy

- **Total of 43 published articles**
- **Early experience focused on thymectomy for myasthenia gravis**
- **Increasing studies focusing on role of robotics in primary treatment of thymoma (5)**

Robotic Thymectomy

Thymoma

Table 1 Review of the published studies on thoracoscopic and robotic thymectomy for thymoma

Author	Patients (N)	SA	Masaoka stage I/II	TS (cm)	5-year survival (%)	FU (months)	RR (%)	OC (%)	OT (min)	POS (days)
Roviaro <i>et al.</i> (2)	22	uVATS	22	–	–	–	4.5	4.5	75*	6*
Cheng <i>et al.</i> (7)	44	uVATS	27/17	7.7*	100	34.6*	0	0	194*	7.6*
Odaka <i>et al.</i> (8)	22	uVATS	–	–	–	21.6*	0	0	194*	4.6*
Agasthian <i>et al.</i> (9)	50	uVATS	25/25	5*	100	58*	2	0	150*	5*
Pennathur <i>et al.</i> (20)	18	bVATS	5/13	3.5*	100	27**	0	0	–	2.9*
Takeo <i>et al.</i> (21)	34	bVATS	15/19	5.2*	100	65*	2.8	0	219*	10.5*
Kimura <i>et al.</i> (22)	45	uVATS	41/4	4.8*	100	–	6.7	0	197*	14*
Liu <i>et al.</i> (23)	76	uVATS	57/19	9.2*	100	61.9*	2.6	1.3	141.7*	7.1*
Ye <i>et al.</i> (24)	125	uVATS	80/45	3.2*	–	41**	0.8	3.2	170**	8**
Sakamaki <i>et al.</i> (25)	71	uVATS	40/31	3.5**	97	48**	1.4	5.6	–	–
Mussi <i>et al.</i> (26)	13	robotic	7/6	3.3*	100	14.5**	0	7.7	139*	4*
Marulli <i>et al.</i> (27)	79	robotic	30/49	3.7*	90	51.7*	1.3	1.3	165*	4.4*
Ye <i>et al.</i> (28)	23	robotic	21/2	2.9*	100	16.9*	0	0	97*	3.7*
Keijzers <i>et al.</i> (29)	37	robotic	20/13	5.1*	100	36**	2.7	13.5	149*	3**
Present series	134	robotic	46/71	4.4*	97	48*	0.7	8.9	146*	4**

SA, surgical access; bVATS, bilateral video-assisted thoracic surgery; uVATS, unilateral video-assisted thoracic surgery; TS, tumor size; FU, median follow-up; RR, recurrence rate; OC, open conversion; OT, operative time; POS, post-operative length of stay. *, mean value; **, median value.



Robotic Thymectomy

Thymoma

- **Largest series from Marulli et al on multi-institutional European experience**
- **134 patients undergoing robotic thymectomy for thymoma**
- **38% left; 59.8% right; 2.2% bilateral**
- **52% with associated MG**
- **97% 5-year survival**



Robotic Thymectomy

Locally Advanced Thymoma





Robotic Thymectomy

Summary

- Existing robotic technology an ideal approach to mediastinal disease
- Major advantage to robotic approach for management of the mediastinum in lung cancer
- Robotics should be the standard for total thymectomy for MG and isolated thymoma

Thank You!



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