

New-Onset Myasthenia Gravis After Thymoma Resection and Subsequent Recurrence/Metastasis: A Multicenter Cohort



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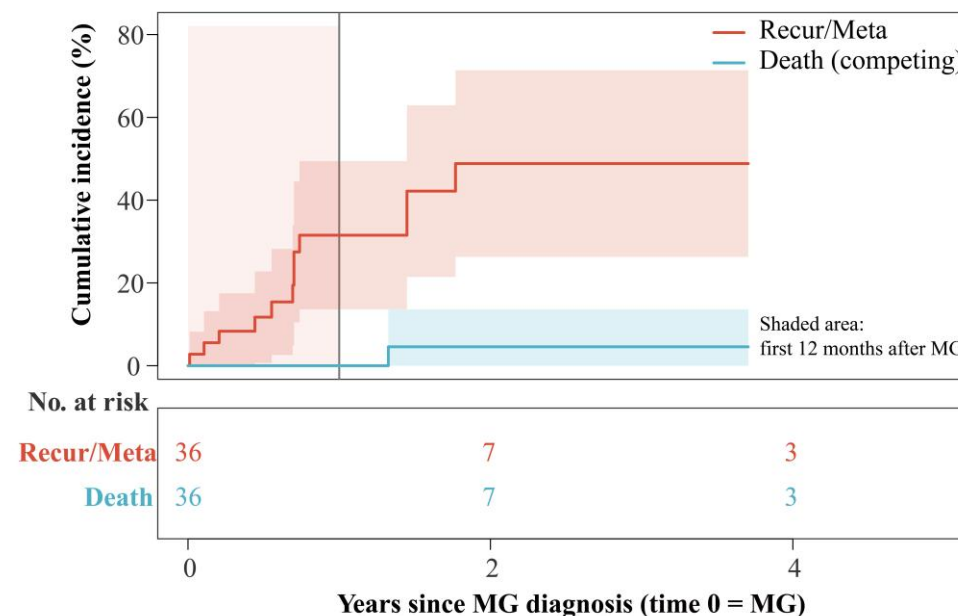
Introduction

New-onset myasthenia gravis (MG) can occur after thymoma resection in patients without preoperative MG, but its long-term risk and temporal relationship with recurrence/metastasis remain unclear.

Methods

This multicenter retrospective cohort included patients without preoperative MG who underwent curative-intent thymoma resection at three thoracic centers from January 1, 2009, through November 30, 2025, with follow-up through December 31, 2025. New-onset MG was evaluated using cumulative incidence functions with death as a competing event and multivariable Fine-Gray regression. Recurrence/metastasis was analyzed using Cox models with MG as a time-dependent exposure. Post-MG absolute risk was estimated after excluding time-0 tumor events.

Post-MG risk: recurrence/metastasis (death competing, time-0 events excluded)



43 / 1,111

Patients developing new-onset MG

7.79%

Ten-year cumulative incidence

48.83%

24-month recurrence/metastasis risk after MG



Primary Findings

Among 1,111 patients, 43 developed postoperative new-onset MG (3.87%). The cumulative incidence of MG was 0.45% at 1 year, 1.83% at 3 years, 4.26% at 5 years, and 7.79% at 10 years. WHO B1-B3 histology versus A/AB (sHR, 5.06; 95% CI, 2.27-11.28; $P<0.001$) and non-R0 resection (sHR, 4.39; 95% CI, 1.77-10.87; $P=0.001$) were independently associated with new-onset MG. Time-varying Cox analysis showed a strong temporal association with subsequent recurrence/metastasis (HR, 57.12; 95% CI, 21.58-151.18; $P<0.001$).

Additional Findings

- After excluding time-0 events, the 24-month cumulative incidence of recurrence/metastasis after MG diagnosis was 48.83%.
- Among patients with both events ($n=19$), MG preceded recurrence/metastasis in 63.2%.
- Median lead time was 8.36 months among MG-first cases.

Table 1. Cohort and outcome summary

Item	Result
Cohort	1,111 patients after curative-intent thymoma resection without preoperative MG
New-onset MG	43 patients (3.87%)
Cumulative incidence of MG	1 year 0.45%; 3 years 1.83%; 5 years 4.26%; 10 years 7.79%
Independent predictors	WHO B1-B3 vs A/AB: sHR 5.06 (95% CI 2.27-11.28); non-R0 vs R0: sHR 4.39 (1.77-10.87)
Recurrence/metastasis after MG	Time-varying Cox HR 57.12 (95% CI 21.58-151.18)
Post-MG absolute risk	24-month cumulative incidence 48.83% after excluding time-0 events
Temporal ordering	MG preceded recurrence/metastasis in 63.2%; median lead time 8.36 months among MG-first cases



Conclusion

Postoperative new-onset MG is uncommon but accumulates over long-term follow-up after thymoma resection. When MG develops, it is temporally associated with high near-term recurrence/metastasis risk, supporting oncologic reassessment and closer surveillance after MG diagnosis.

Funding

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Ethics

Institutional review boards of the participating centers (April 16, 2025; No. 2025KY123); informed consent was waived.

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