

BEYOND THE MARGIN: CIRCUMFERENTIAL RESECTION MARGIN, TUMOR BIOLOGY, AND RECURRENCE AFTER NEOADJUVANT-TREATED HYBRID IVOR LEWIS ESOPHAGECTOMY

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BACKGROUND / OBJECTIVE

After neoadjuvant treatment and R0 resection, the prognostic value of circumferential resection margin (CRM) remains debated.

This study assessed recurrence after neoadjuvant-treated hybrid Ivor Lewis esophagectomy and evaluated whether CRM width or standard CRM thresholds were associated with documented recurrence.

METHODS

Study design
Retrospective single-centre cohort study.

Patients
Hybrid Ivor Lewis esophagectomy with laparoscopic abdominal phase and VATS thoracic phase through a utility thoracotomy.

Cohort
91 patients in the surgical cohort after exclusions. 90 patients in the recurrence-analysis cohort (one occult synchronous metastatic case excluded from recurrence analysis only).

Follow-up
Patients without documented recurrence were censored at last known disease-free/clinical contact.

Definitions

- Pathological complete response (pCR) defined as ypT0N0.
- RCPATH close/positive CRM defined as ≤ 1 mm.

Outcome

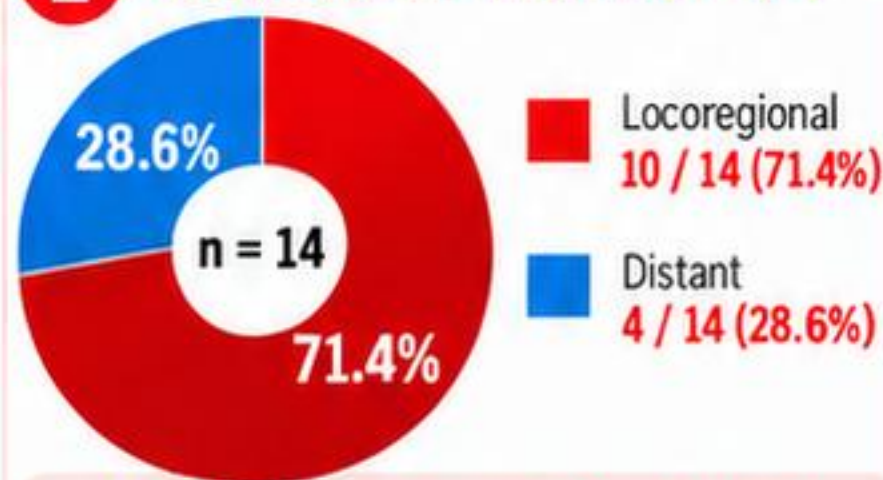
- Association of CRM width and standard thresholds with documented recurrence.

MAIN RESULTS

1 COHORT FLOW AND KEY OUTCOMES



2 RECURRENCE PATTERNS (n = 14)



Most recurrences were locoregional.

3 PATIENT AND RECURRENCE CHARACTERISTICS

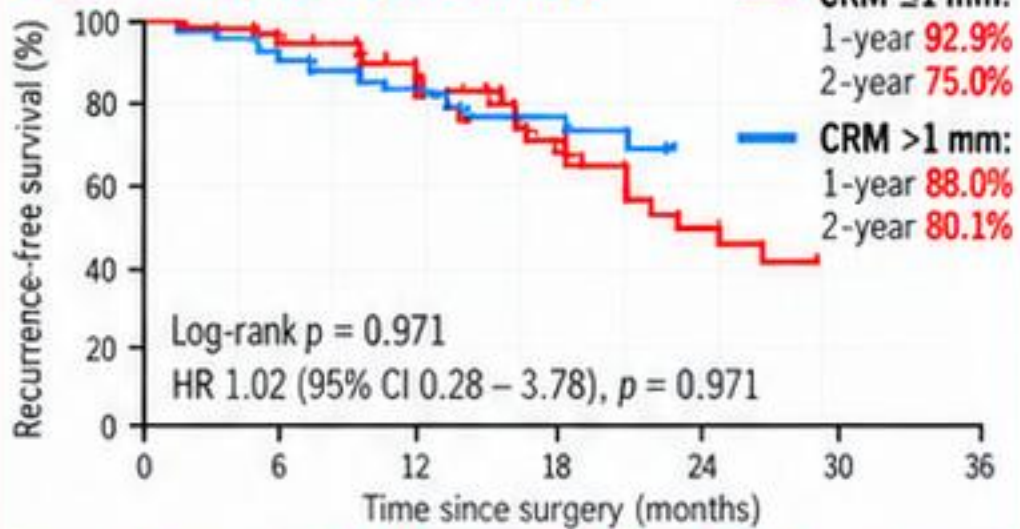
Variable	Value
Surgical cohort (resected)	91
Recurrence-evaluable cohort	90
Documented recurrences	14 (15.6%)
Locoregional recurrences	10 / 14 (71.4%)
Distant recurrences	4 / 14 (28.6%)
Median follow-up, months (IQR)	17.2 (11.3 – 26.4)
Median time to recurrence, months (IQR)	9.9 (5.6 – 13.2)
CRM measured, n (%)	71 / 90 (78.9%)
CAP-positive (0 mm) margin	1 / 71 (1.4%)

KEY INTERPRETATION

Once R0 resection was achieved, millimetric CRM variation did not explain recurrence; biological response and nodal burden appeared more informative.

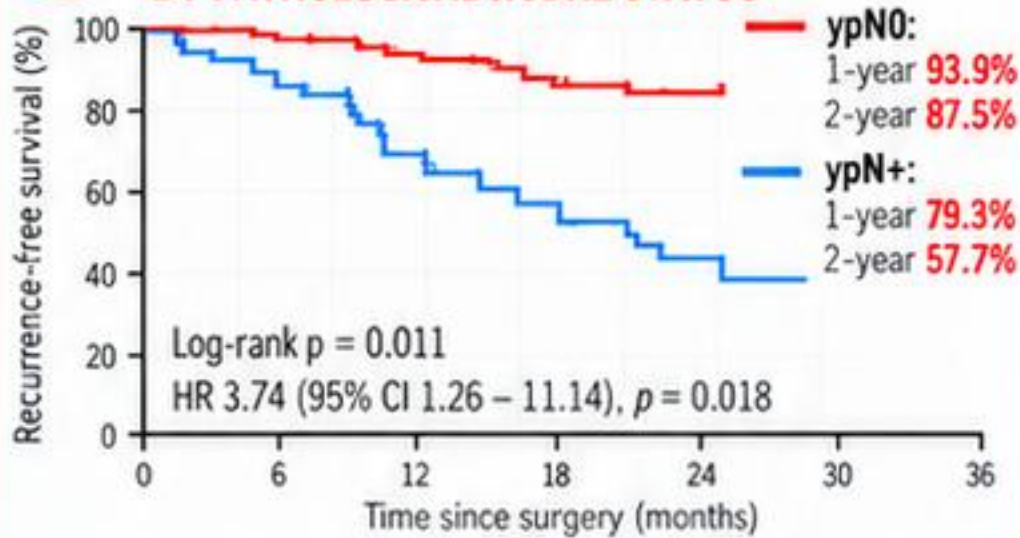
RECURRENCE AND SURVIVAL

4 FREEDOM FROM RECURRENCE BY RCPATH CRM STATUS



No meaningful separation by CRM status.

5 FREEDOM FROM RECURRENCE BY PATHOLOGICAL NODAL STATUS



Recurrence was more strongly associated with nodal burden.

6 EXPLORATORY ASSOCIATIONS WITH DOCUMENTED RECURRENCE

Variable	HR (95% CI)	p value
ypN+ vs ypN0	3.74 (1.26 – 11.14)	0.018
pCR (ypT0N0) vs non-pCR	0.27 (0.08 – 1.00)	0.049
ypT3 vs ypT0–2	2.96 (0.99 – 8.80)	0.051
RCPATH CRM ≤ 1 mm vs > 1 mm	1.02 (0.28 – 3.78)	0.971
CRM distance, per mm	0.91 (0.62 – 1.33)	0.626

CONCLUSION

- CRM width and standard RCPATH thresholding did not meaningfully discriminate recurrence in this cohort.
- ypN positivity and lack of pCR showed stronger exploratory associations with recurrence.
- These findings support prioritizing tumour biology, systemic risk, and nodal burden over margin millimetres alone when interpreting postoperative recurrence risk.