

Table SI. Comprehensive performance metrics for binary tasks (control vs. achalasia; positive = achalasia).

Metric	Point estimate	95% CI (lower-upper)	Notes
AUC	1.000	1.000-1.000	Bootstrap (2,000 resamples)
Sensitivity	1.000	0.722-1.000	Threshold = 0.5
Specificity	1.000	0.839-1.000	Threshold = 0.5
Accuracy	1.000	0.886-1.000	n=30

AUC, area under the curve.

Table SII. Comprehensive performance metrics for multiclass tasks (type 1, type 2 and type 3 achalasia, and hypercontractile esophagus).

Class	Sensitivity (95% CI)	Specificity (95% CI)	AUC (95% CI)
Type 1 achalasia	0.933 (0.702-0.988)	1.000 (0.646-1.000)	1.000 (1.000-1.000)
Type 2 achalasia	1.000 (0.342-1.000)	1.000 (0.839-1.000)	1.000 (1.000-1.000)
Type 3 achalasia	1.000 (0.342-1.000)	1.000 (0.839-1.000)	1.000 (1.000-1.000)
Hypercontractile esophagus	1.000 (0.439-1.000)	0.947 (0.754-0.991)	1.000 (1.000-1.000)
Overall accuracy	0.955 (0.782-0.992)	-	-
Micro-average AUC	-	-	0.999 (0.996-1.000)
Macro-average AUC	-	-	1.000 (1.000-1.000)

AUC, area under the curve; CI, confidence interval.