



OBJECTIVES

Ovarian torsion accounts for 3–5% of acute gynecological emergencies, affecting 2–7 per 100,000 women annually. Delayed diagnosis risks oophorectomy and fertility loss. This study aimed to develop a point-based clinical score to stratify torsion probability and guide surgical decision-making.



METHODS

A retrospective cohort of 93 patients undergoing emergency surgery for suspected ovarian torsion at Whipps Cross Hospital (2020–2025) was analysed. Multivariable logistic regression identified independent risk factors; points were assigned proportional to adjusted odds ratios. Model performance was assessed by AUC.



RESULTS

- Torsion was confirmed in 58 patients (62.4%).
- Independent predictors were: dermoid histology (aOR 3.58, $p=0.034$), vomiting (aOR 3.17, $p=0.025$), and cyst size ≥ 7 cm (aOR 2.78, $p=0.040$). Symptom duration <12 h showed borderline significance (aOR 4.09, $p=0.089$).
- The GYRO score (range 0–14) achieved AUC 0.789 ($p<0.001$) (Figure 1).
- Low- and High-Risk groups (scores 0–4 and 6–14) had torsion rates of 35.6% and 87.5% (OR 12.69, $p<0.001$).
- Sensitivity 72.4%, specificity 82.9%, PPV 87.5%.



CONCLUSIONS

The GYRO score is a simple, four-variable tool for ovarian torsion risk stratification with strong discriminatory ability (AUC 0.789) and high PPV, supporting timely surgical decisions and fertility preservation. Prospective external validation is warranted.

GYRO Score Diagnostic Performance

At optimal Youden cut-off (score ≥ 5)

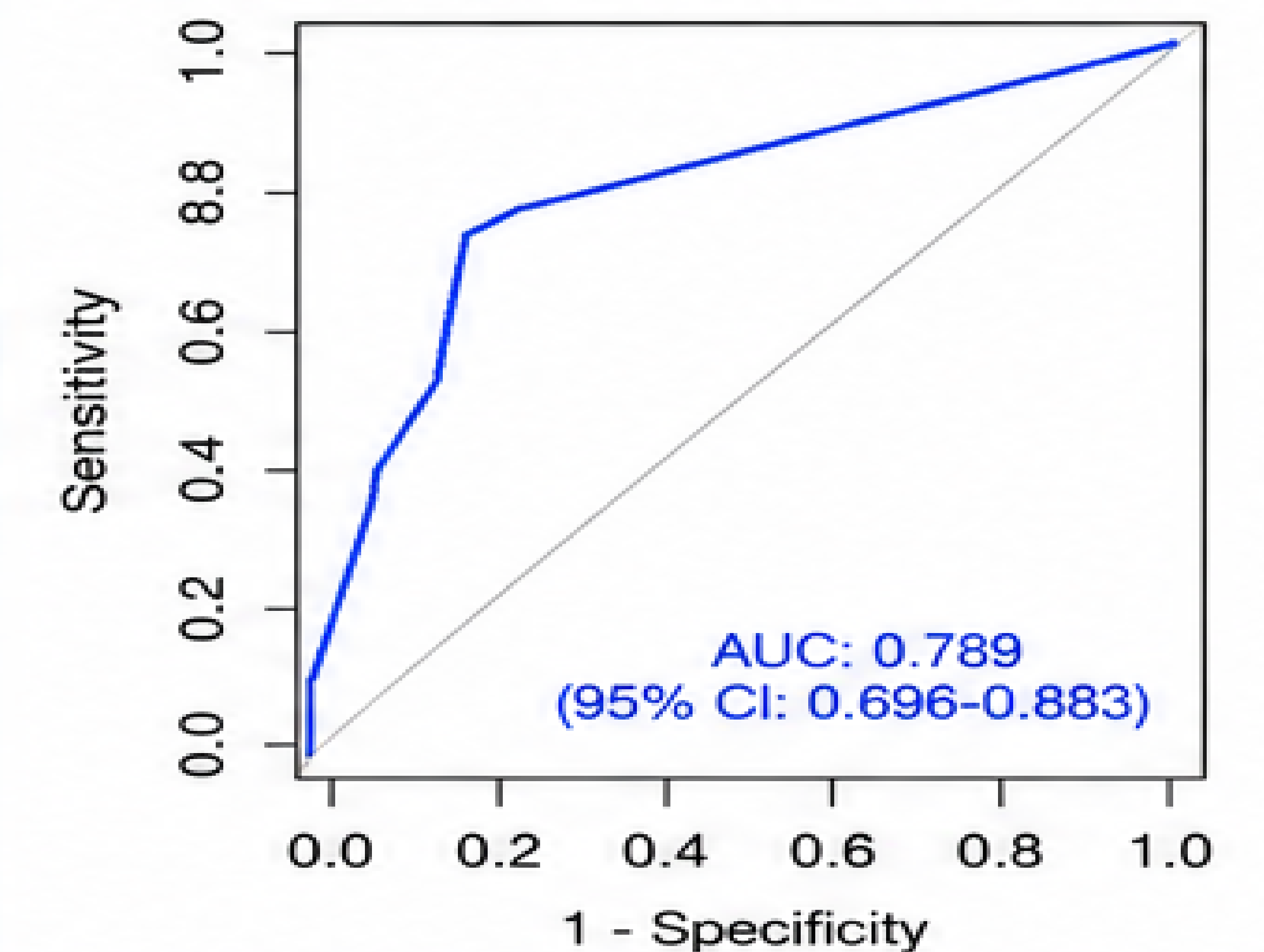
Metric	Value
Optimal cut-off	≥ 5 points
Sensitivity	72.4%
Specificity	82.9%
PPV	87.5%
NPV	64.4%
Accuracy	76.3%

GYRO Score Risk Stratification

OR 12.27 (95% CI 4.05–43.26), $p < 0.001$

Risk Category	Total (n)	Torsion (n)	Torsion Rate
Low (0–4)	45	16	35.6%
High (6–14)	48	42	87.5%

ROC Curve — GYRO Score



GYRO Score: Four Clinical Predictors (Total Score Range: 0–14)

Dermoid histology



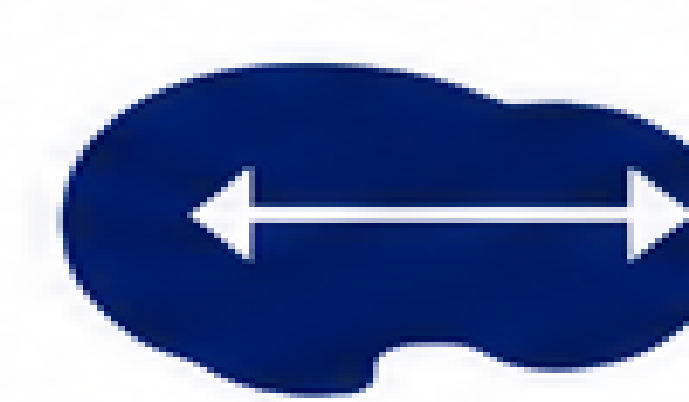
No = 0 points
Yes = 4 points

Vomiting



No = 0 points
Yes = 3 points

Cyst size ≥ 7 cm



No = 0 points
Yes = 2 points

Symptom duration < 12 h



No = 0 points
Yes = 1 point

Study Cohort



Total patients
93
(2020–2025)



Torsion confirmed
58 (62.4%)



Underwent emergency surgery for suspected ovarian torsion



KEY TAKE-HOME MESSAGE

The GYRO score is a simple, four-variable clinical tool for ovarian torsion risk stratification with strong discriminatory performance (AUC 0.789) and high positive predictive value. It may aid timely surgical decision-making and fertility preservation. Prospective external validation is warranted.