

EP13.40. Prospective analysis of proposed novel ultrasound and surgical endometriosis staging systems predicting surgical complexity

Phil McClenahan, Jason N. Mak, Mercedes Espada, Cansu Uzuner, Mayumi Raheem, Mohammed K. Alotaibi, Allie Eathorne, Shannon Reid, George Condous

Introduction

Preliminary analysis of an ongoing prospective cohort study validating novel threshold-based and decision-tree (DT) based ultrasound (US) and surgical endometriosis staging systems developed on a retrospective cohort proposed by Mak et al. 2023 to predict AAGL surgical complexity level.

Methods

Prospective cohort study conducted across three sites in Sydney, Australia commenced 30th November 2023 and is ongoing. Participants undergo transvaginal ultrasound (TVS) for deep endometriosis (DE) reported per IDEA consensus statement. Operative findings were recorded.

Corresponding ultrasound and surgical stages are calculated within the database with AAGL surgical complexity level A-D. Three and four-stage models for both ultrasound and surgery. Surgical complexity levels of B and C were combined for the three stage model analysis.

Results

165 participants, 29 were excluded due to incomplete data, leaving 134 participants for analysis. Mean age was 33.3 years, BMI 27.3.

Staging system	Weighted kappa
4 Stage Surgical Threshold	0.76
3 Stage Surgical Threshold	0.71
DT 3 Stage Surgical	0.71
DT 4 Stage Surgical	0.69
DT 3 Stage Ultrasound	0.63
DT 4 Stage Ultrasound	0.6
3 Stage Ultrasound Threshold	0.59
4 Stage Ultrasound Threshold	0.58
AAGL Surgical Staging	0.63

Table 1: Staging system correlation with AAGL Surgical complexity level.

Conclusion

The 4-stage threshold based surgical staging had highest agreement with AAGL surgical complexity. The reference standard was outperformed by all proposed surgical staging systems and comparable with the ultrasound based 3-stage decision tree system.

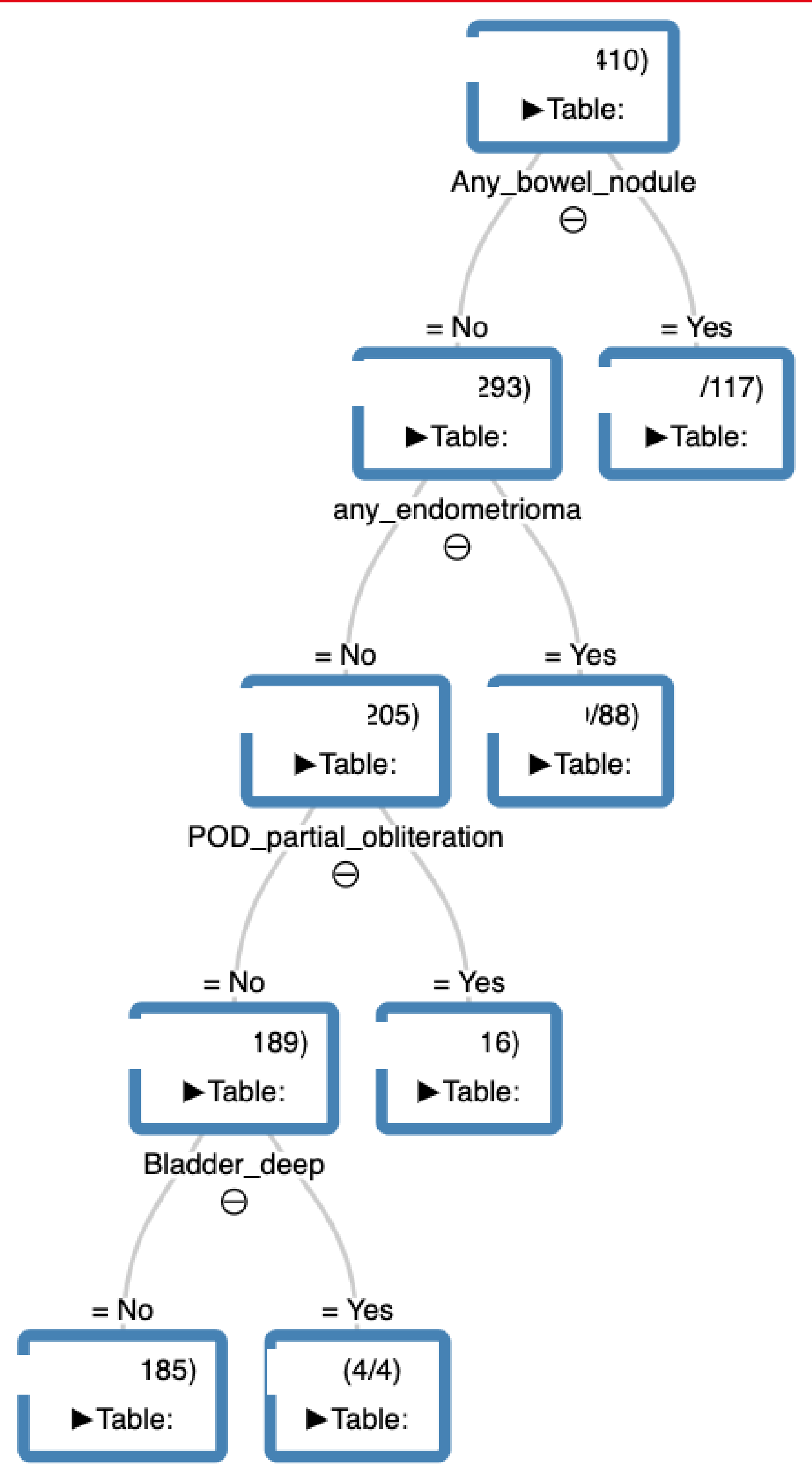


Figure 1: Example of Ultrasound based 4 stage decision tree/classification tree analysis. Complexity level is the reference and analysis identifies division point for best correlating ultrasound feature.