

Machine learning to diagnose rectouterine pouch obliteration with the sliding sign on transvaginal ultrasound: a prospective study

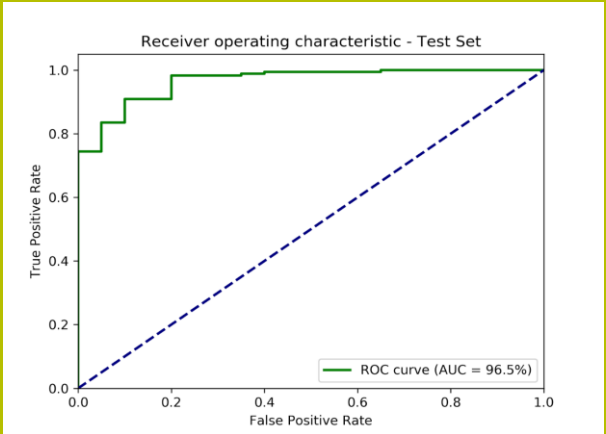
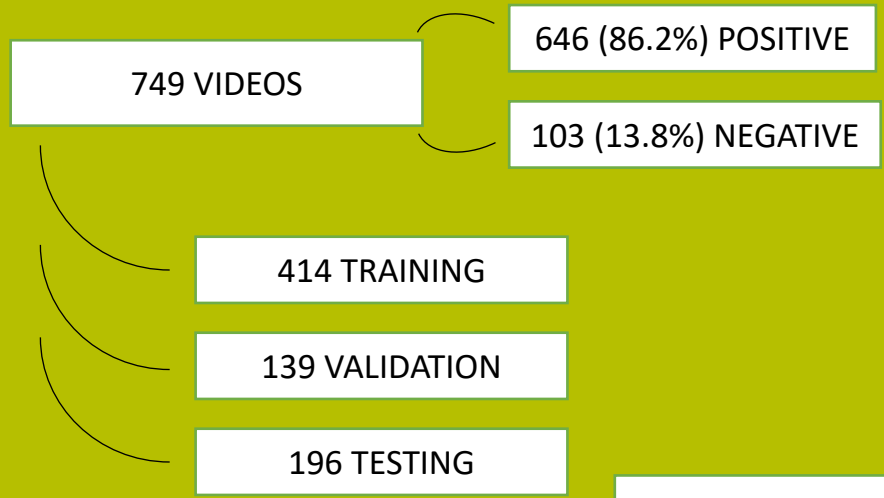
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INTRO

- Rectouterine pouch obliteration is a severe consequence of inflammation in the pelvis, often seen in patients with endometriosis.
- The sliding sign is a dynamic transvaginal ultrasound test that can diagnose obliteration.
- We aimed to develop a deep learning (DL) model to automatically classify the state of the rectouterine pouch using recorded videos depicting the sliding sign test.

METHODS

- A DL model based on a temporal residual network was prospectively trained with a dataset of ultrasound videos.
- The model was tested on an independent test set and its diagnostic accuracy including area under the receiver operating characteristic curve (AUC), accuracy, sensitivity, specificity, positive and negative predictive value (PPV/NPV) was compared to the reference standard sonologist classification (positive or negative sliding sign).



AUC 96.5%
(95%CI, 90.8-100%)

Acc 88.8%
(83.5-92.8%)

Sens 88.6%
(83.0-92.9%)

Spec 90.0%
(68.3-98.8%)

PPV 98.7%
(95.4-99.7%)

NPV 47.7%
(36.8-58.2%)

An **accurate** DL model has been developed.

DL could help disseminate the sliding sign test beyond centers of endometriosis ultrasound expertise without compromising accuracy of experts

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