Objective
To examine the inter-observer and intra-observer reproducibility of ultrasound diagnosis of pelvic endometriosis and assess the repeatability of measurements.

Methods
A prospective observational cohort study conducted in our specialist endometriosis centre over a period of 12 months. Included all consecutive women who were scanned by two experienced operators during the same visit to the clinic. Outcomes of interest included the inter- and intra-observer reproducibility of diagnosis and locations of endometriotic lesions and repeatability of measurements of lesion size.

Results
We included 50 consecutive women who were referred to our specialist endometriosis service. There was a good level of agreement between operator A and operator B in detecting endometriotic lesions (k=0.72). There was a good level of agreement identifying endometriotic nodules (k=0.61) and a very good level of agreement in identifying endometriotic cysts (k=0.88). There was a very good level of agreement in identification of endometriotic bowel nodules (k=0.82). The inter- and intra-observer repeatability of measuring endometriotic cysts was excellent (ICC 0.98). There was good inter-observer measurement repeatability for bowel nodules (ICC 0.88), but this was poor for nodules in the posterior compartment (ICC 0.41). The intra-observer repeatability for nodule size measurements was good for both operators (ICC 0.86).

Conclusion
Transvaginal ultrasound is highly reproducible for the detection of pelvic endometriotic lesions, in particular for the detection of endometriotic cysts and endometriotic bowel nodules. Both inter- and intra-observer measurements of endometriotic cysts are highly reproducible. Intra-observer repeatability of nodule measurements is superior to inter-observer repeatability.