

Pre-operative mapping of deep infiltrating endometriosis (D.I.E) on MRI- are we using it efficiently? How do we compare to the national Standards in accuracy?

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Background

D.I.E found in 1% of women with endometriosis, is defined as the occurrence of sub-peritoneal implants of endometriosis, and is commonly found in rectosigmoid, rectovaginal, Uterosacral, ureteral and bladder areas. It impacts QOL by causing dysmenorrhea, dyspareunia, Dyschezia, Chronic pelvic pain, and infertility.

Intense scarring, fixed retroversion of the uterus and obliteration of cul-de-sac from endometriosis may render Laparoscopy, inadequate to assess extent of the disease and in turn inadequate treatment. (Marcal, Nothaft, Coelho and Choi, 2010). Accurate assessment of the extent of disease and resultant damage is important to plan type of surgery, the other specialist teams needed and the equipment. (Del Frate et al., 2006). The importance of counselling the patient to attain informed consent, postop recovery process and the implications there of cannot be overemphasized.

Clinical examination may not be sensitive enough to assess the extent of the disease. (Gauche Cazalis et al., 2012).

Various imaging techniques have been used to map the endometriosis. While TVS is easily accessible and cheap, its field of vision can be limited in assessing D.I.E. (Marcal, Nothaft, Coelho and Choi, 2010).

In our unit we use MRI to diagnose and map D.I.E prior to surgery. MRI is expensive and should be used judiciously. It is a highly specialised field and should be interpreted by personnel with specialist skills to report in the context of endometriosis. (So does TVS).

We conduct a retrospective audit of comparing the findings on MRI with surgical findings as confirmed by pathology.

Objectives:

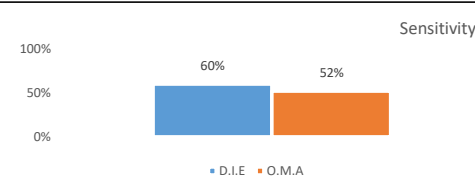
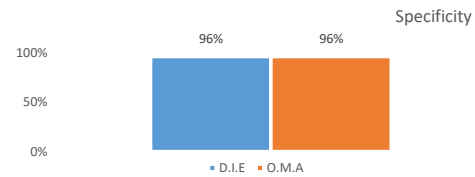
- To assess the judicious use of MRI in the context of endometriosis
- To analyse the accuracy rates of reporting in our unit and compare it to the best available standards in the literature.

Reference

- Del Frate, C., Girometti, R., Pittino, M., Del Frate, G., Bazzocchi, M. and Zuiani, C., 2006. Deep Retroperitoneal Pelvic Endometriosis: MR Imaging Appearance with Laparoscopic Correlation. *RadioGraphics*, 26(6), pp.1705-1718.
- Gauche Cazalis, C., Koskas, M., Martin, B., Palazzo, L., Madelenat, P. and Yazbeck, C., 2012. Imagerie préopératoire dans l'endométriose profonde : échographie pelvienne, écho-endoscopie rectale et IRM. *Gynécologie Obstétrique & Fertilité*, 40(11), pp.634-641.
- Marcal, L., Nothaft, M., Coelho, F. and Choi, H., 2010. Deep pelvic endometriosis: MR imaging. *Abdominal Imaging*, 35(6), pp.708-715.

Results

MRI - positive findings consistent with D.I.E on surgery



D.I.E + histology



Methodology

Random selection of 25 patients who have had an MRI for suspected D.I.E over a period of 2 years.

- Positive MRI was identified when there was a thickening or irregular/regular nodules or cystic lesions in one or more of the following areas: (Marcal, Nothaft, Coelho and Choi, 2010)
 - Ovarian endometrioma (OMA)
 - Rectovaginal septum or rectosigmoid
 - Uterosacral ligaments
 - Torus uterinus
 - Obliteration of POD
 - Hyperdense/hypodense nodules on T1 and T2 weighted images in POD/rectovaginal areas/torus uterinus/uterosacral ligaments/ureters
- The operative notes and pictures were reviewed to identify above positive findings of DIE on laparoscopy
- Histology to confirm endometriosis
- Literature search to identify studies on specificity and sensitivity of MRI use in endometriosis and compare it to our own findings.

Results and conclusion:

100% of patients who had MRI had positive findings consistent with D.I.E on surgery

MRI had 96% specificity in identifying OMA and D.I.E -which is on par with national standards.

Sensitivity of MRI in identifying D.I.E was 60%, while literature quotes ranging from 65% to 90% depending on structure involved – such as Uterosacral ligaments, rectovaginal septum or rectosigmoid and for OMA was 52%. (literature up to 96%)

88% of cases operated for D.I.E. had positive histology for endometriosis.