Malignant Transformation of Endometriomas - Complexities of Monitoring, Diagnosis, and Surgical Prioritisation

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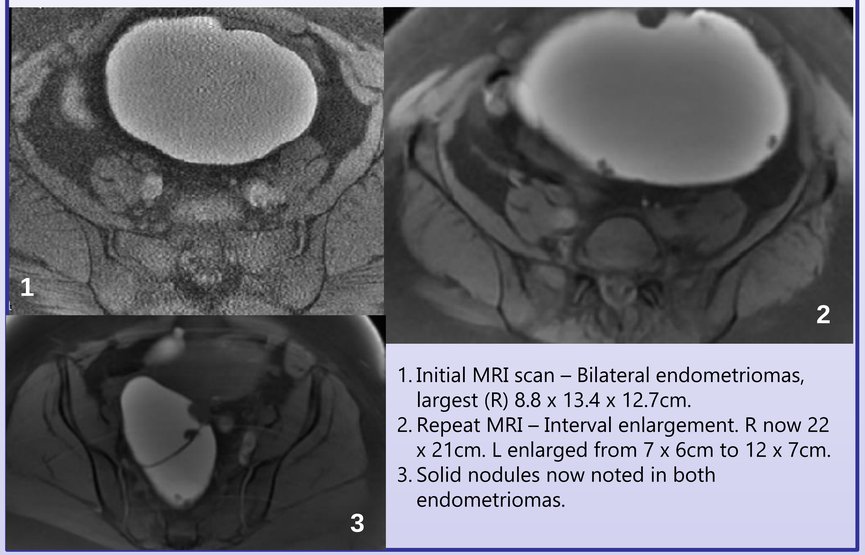
Background

Endometriosis is a benign condition for which conservative management is an acceptable choice[1].
Resources for surgical management have been significantly affected by COVID-19 and those who choose to have surgery are likely to face a considerable wait[2].
When patients are told that their raised Ca125 and complex ovarian cyst are related to endometriosis they are often relieved and reassured.
Options for treatment are explained and the risks are weighed against relief of symptoms, but often the risk of malignant transformation (which has been described as high as 1%[3]) is not discussed with the patient.
Diagnosis of malignant transformation is often complex as benign endometriomas are often bilateral, increase in size over time, and appear complex on scan. In addition, Ca125 is non-specific and is known to be elevated in endometriosis[4]. It is only upon histological examination that the diagnosis can be confirmed.

Case 1

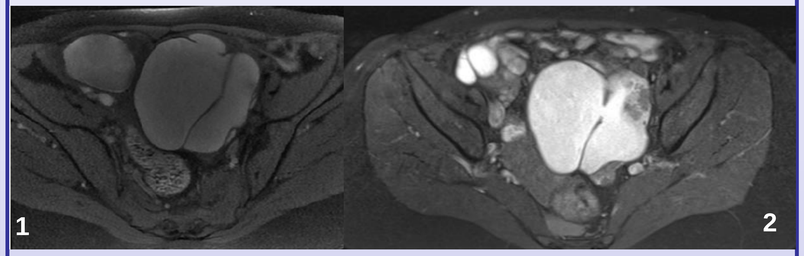
- 42 year old referred with symptoms of endometriosis and a 7cm left ovarian cyst.
- Listed for surgery and underwent surveillance scanning in the interim. Each scan demonstrated interval enlargement and a right sided cyst developed.
- After a significant increase in the size of her cysts, between two scans almost a year apart, she was referred to oncology. A hysterectomy and BSO was undertaken. Histology confirmed clear cell carcinoma.



1. Initial MRI scan – Bilateral endometriomas, largest (R) 8.8 x 13.4 x 12.7cm.
2. Repeat MRI – Interval enlargement. R now 22 x 21cm. L enlarged from 7 x 6cm to 12 x 7cm.
3. Solid nodules now noted in both endometriomas.

Case 2

- 48 year old referred to the oncology team with an elevated Ca125 (410) and bilateral complex ovarian cysts.
- Diagnosis made of deep infiltrating endometriosis with bilateral endometriomas.
- Patient lost to follow-up.
- Re-referred, wishing for surgery. Repeat scan undertaken.
- Surgery undertaken urgently due to ureteric compression.
- Laparoscopic hysterectomy, bilateral salpingo-oophorectomy (BSO) was undertaken.
- Histology revealed endometrioid borderline tumour as well as atypical endometrial epithelium within an endometriotic cyst.



1. Initial MRI scan – Bilateral endometriomas with large tubo-ovarian endometrioma 10 x 9cm (L) 8.6 x 5.4cm (R).
2. New solid areas within left haematosalpinx.

Case 3

- 38 year old, no previous history of endometriosis.
- Attended as an urgent admission with severe abdominal pain.
- CT and MRI scans undertaken.
- Appearances of endometrioma with malignant change.
- Large adnexal mass, growing into the POD and right adnexal mass, invading and tethering terminal ileum. Calcified nodules in upper abdomen.
- FIGO stage IIIC.
- Awaiting TAH, BSO, and omentectomy.

1&2. MRI scan– Deep pelvic endometriosis, Complex bilateral endometriomas with full thickness rectal wall involvement.
3. CT scan – peritoneal disease with calcified metastases in left flank.

Learning Points

- Include the risk of malignant transformation when counselling patients about the options for treatment of endometriosis (particularly endometriomas) and explain that the nature of an ovarian cyst cannot be determined with complete certainty without histology.
- If patients choose conservative management, or whilst awaiting surgery, continue to follow-up with ultrasound/MRI scans 6 monthly.
- Utilise Ca125, Risk of Malignancy Index (RMI) as an adjunct to imaging, and consider oncology input early if suspicion of malignancy.
- Consider expediting the surgery of patients with large or bilateral endometriomas.

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