

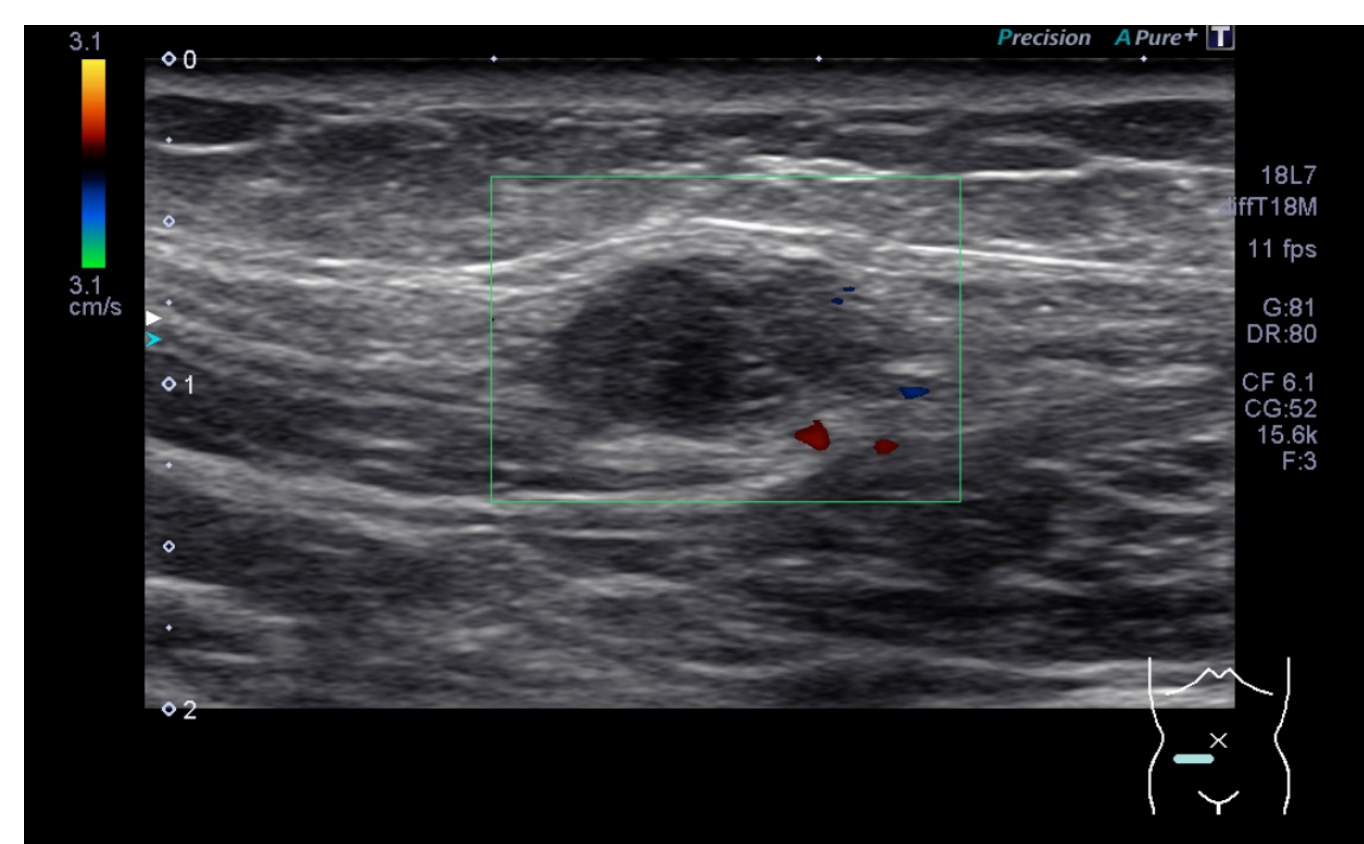
Background

Endometriosis is defined by the presence and growth of ectopic functional endometrial tissue outside the uterus¹. Scar endometriosis has been described following obstetrical and gynaecological surgery with an incidence of 0.03 to 0.45 % after a caesarean section.²

We present a case series of 3 patients who attended within a period of one year to our District General Hospital. None of these patients had a prior history of any pelvic endometriosis. The presenting symptoms, clinical assessment, operative findings and histology were evaluated. All patients consented to the study.



MRI Pelvis of Patient 1 showing an endometrioma



USS of patient 3 showing no vascularity to mass

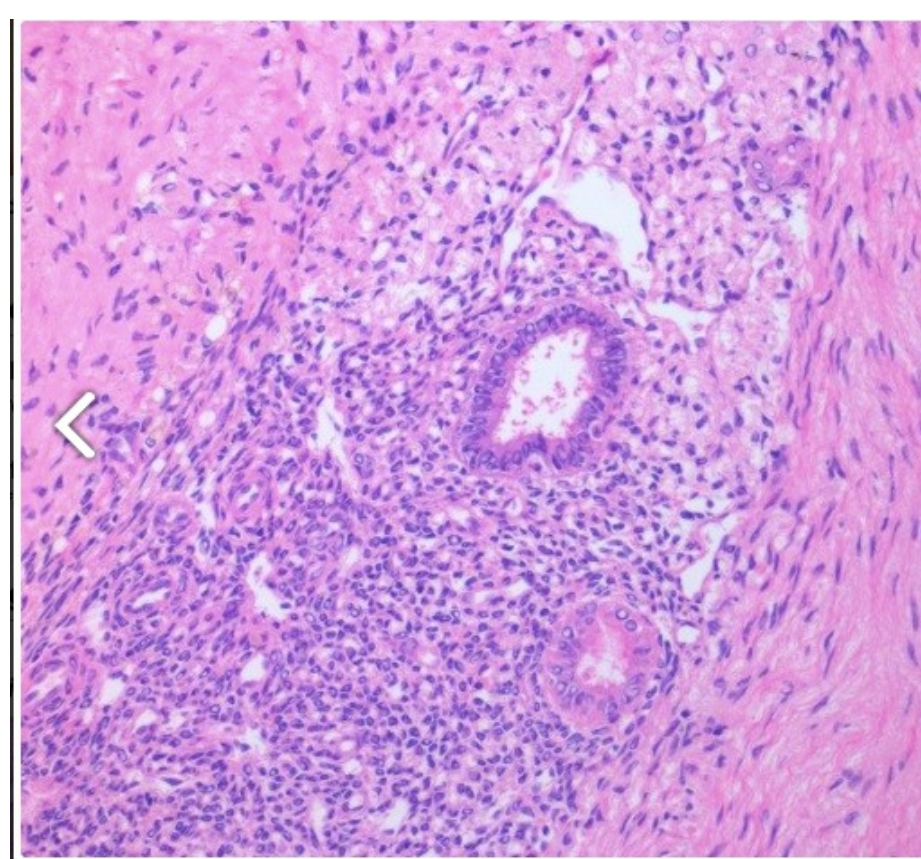
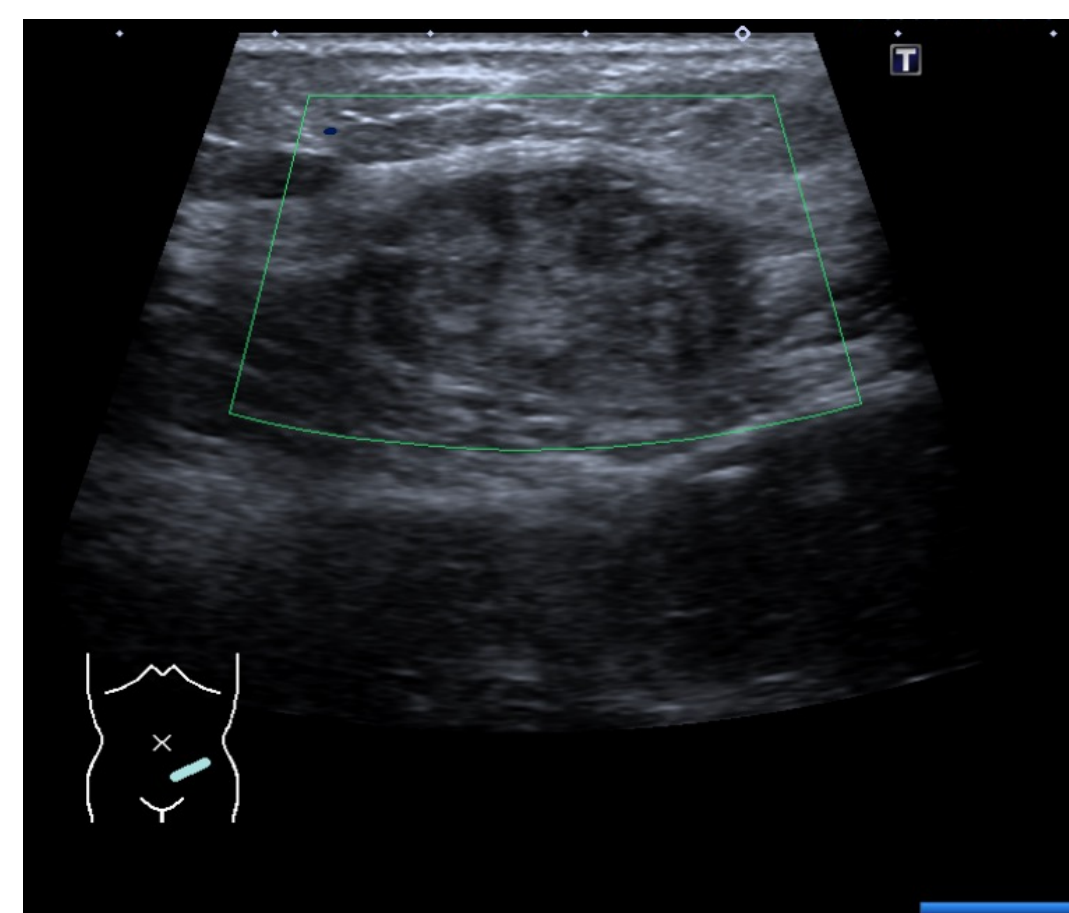
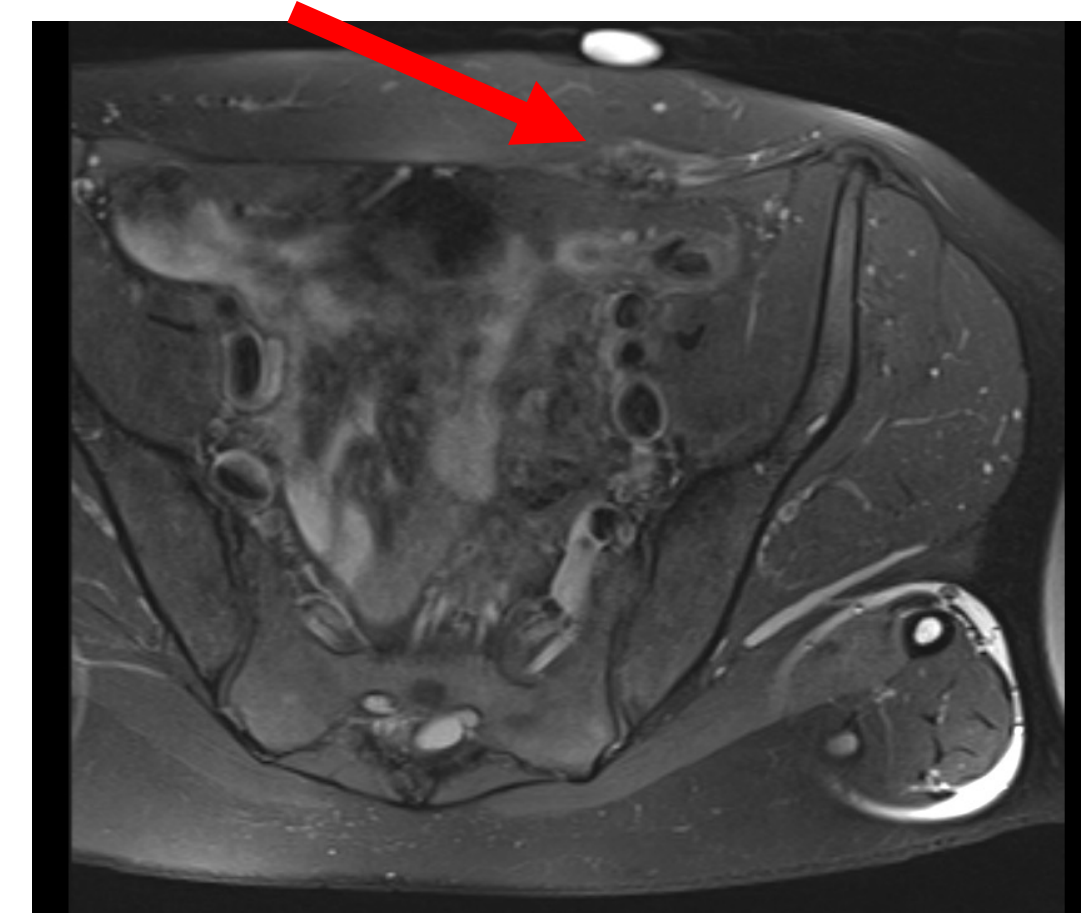


Figure 1. Endometriosis Histology



USS of patient 2 showing a solid swelling



MRI of patient 2 showing 'an indeterminate mass'

References

1. Parasar P, Ozcan P, Terry KL. Endometriosis: Epidemiology, Diagnosis and Clinical Management. *Curr Obstet Gynecol Rep.* 2017;6(1):34-41. doi:10.1007/s13669-017-0187-1
2. Zhang, P., Sun, Y., Zhang, C. *et al.* Caesarean scar endometriosis: presentation of 198 cases and literature review. *BMC Women's Health* **19**, 14 (2019).
3. Who.int. 2022. *Caesarean section rates continue to rise, amid growing inequalities in access*. [online] Available at: <<https://www.who.int/news/item/16-06-2021-caesarean-section-rates-continue-to-rise-amid-growing-inequalities-in-access>> [Accessed 14 May 2022].Bektas H, Bilsel Y, Sari YS, Ersoz F, Koc O, Deniz M, Boran B, Huq GE (2010) Abdominal wall endometrioma: a 10-year experience and brief review of the literature. *J Surg Res* 164:e77–e81
4. Cöl C, Yilmaz EE. Caesarean scar endometrioma: Case series. *World J Clin Cases.* 2014;2(5):133-136. doi:10.12998/wjcc.v2.i5.133
5. Kocher M, Hardie A, Schaefer A, McLaren T, Kovacs M. Caesarean-Section Scar Endometrioma: A Case Report and Review of the Literature. *J Radiol Case Rep.* 2017;11(12):16-26. Published 2017 Dec 31. doi:10.3941/jrcr.v11i12.3178
6. Wasfie T, Gomez E, Seon S, Zado B (2002) Abdominal wall endometrioma after cesarean section: a preventable complication. *Int Surg* 87:175–177
7. Koger KE, Shatney CH, Hodge K, McClenathan JH. Surgical scar endometrioma. *Surg Gynecol Obstet.* 1993;177:243–6.

Figure 1. Han L, Garcia R, Busca A, Parra-Herran C. Endometriosis. PathologyOutlines.com website. <https://www.pathologyoutlines.com/topic/ovarynontumorendometriosis.html>. Accessed May 31st, 2022.

Table of Cases

	Case 1	Case 2	Case 3
LSCS details	At Term, Underwent pre labour Lower Segment Caesarean Section for an Abnormal CTG.	Term +8, Category 3 Lower Segment Caesarean Section for Breech. Uterus exteriorised. Manual removal of placenta.	33+4 gestation Category 1 Lower Segment Caesarean Section for Placenta Previa
Onset	8.5 years after LSCS, 1.5 years of symptoms before diagnosis	Immediate onset	16 months
Symptoms	Right sided new lump above LSCS. Cyclical Pain and new lump above the right of the scar. Pain and lump both increase with period and intensifies lasts for 1 week after. No prior history of pelvic endometriosis	Cyclical left sided scar pain during period and for 1 week after Lump 3cm diameter, swells to golf ball size during period. No prior history of pelvic endometriosis	Cyclical pain with increase during period. Right sided lump on scar, size of a small grape size. No increase in swelling with cycle No prior history of pelvic endometriosis
USS finding	Done out of area	Solid swelling 2.5x1.5x2.8cm solid swelling No vascularity	10mm slightly irregular, heterogenous area. No vascularity, sinister cause cannot be ruled out
MRI finding	Anterior to rectus abdominus muscle. 13x12mm endometrioma.	26x14mm mass in soft tissue fat. likely involving anterior rectus sheath indeterminate of cause	Not performed
Management	1. Wide local excision, removed as one segment	1. Zoladex 2. Wide local excision Removed in two segments. Pro mesh inserted by General Surgeons.	1.Wide local excision. Removed in two segments.
Histology	Endometriosis confirmed in the excised mass. Margins clear	Endometriosis confirmed in the excised mass. Margins clear	Endometriosis confirmed. Margins NOT clear in either segment
Outcome	Pain free post op. No symptom recurrence	Ongoing abdominal wall pain. Also suffering from menorrhagia and dysmenorrhea. Awaiting further follow up.	Pain free post op. No symptom recurrence Will need F/U in light on histology

Discussion

Given the relatively low incidence of caesarean section scar endometriosis (CSE) 0.03-0.45%², it would not need to be noted as a complication on the consent form for caesarean section. However given the increase in the number of caesarean sections performed globally (29% of all births,) there needs to be an increased awareness.³

In women who presents with a painful or cyclical swelling at the scar site and has undergone caesarean section in the past, scar endometriosis should be considered. Brown discolouration of the skin or discharge from the scar can also be presenting complaints.. CSE usually develops from 1 to 20 years postoperatively⁴ The diagnosis can be made from history and examination alone, although ultrasound/MRI can be useful to aid diagnosis and to rule out other pathologies. Theses include granuloma, hematoma, incisional hernia, keloid scars, or malignancy⁵

There is evidence of response to hormonal treatment. Some women have responded with symptom relief to the combined oral contraceptive pill /progesterone only pill . However the symptoms relapse once the treatment is stopped. GnRH can be used for patients who may not be fit for surgery or who decline surgical intervention. It is important to confirm diagnosis with a fine needle biopsy prior to medical treatment.⁵⁺⁶

Definitive management is surgical wide local excision with a 1cm clear margin to prevent reoccurrence .This has been achieved in two of our cases. Due to the rare progression to clear cell/endometroid cancers it is also important to ensure complete removal.⁶

The prevention of CSE is vital as it is most likely caused by iatrogenic dissemination of decidual tissue. Removing decidual tissue from the wound before closing and cleansing with NaCl (normal saline solution) has been described as a preventive measure.⁷ Sweeping the uterus with a gauze during a caesarean delivery should be limited since it could be an important factor in the pathogenesis of scar endometriosis.⁸ There have also been thoughts on delaying menstruation via breastfeeding as a preventor however there is not enough evidence into this yet.²

Conclusion

In conclusion using the current surgical techniques used in UK hospitals, there are measures in place to prevent CSE.

The first line management of CSE - wide local excision-can be performed routinely, however it is important to ensure clear borders to prevent reoccurrences. However it is recognised that in cases of CSE it is challenging to define clear borders during surgery. Early recognition as well as increased awareness of CSE will lead to quicker imaging as well as diagnosis/surgery. This is something that could also be recognised in primary care.