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A Rare and Risky Implantation: Cervical Ectopic Pregnancy Following Recent Surgical Management of Miscarriage

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Abstract

Cervical ectopic pregnancy is a rare and life-threatening form of ectopic implantation requiring prompt diagnosis and careful management to prevent severe haemorrhage and preserve fertility. We report the case of a woman in her 30s who presented with lower abdominal cramping four weeks after surgical management of a miscarriage, complicated by a prior large loop excision of the transformation zone. Transvaginal ultrasound revealed a gestational sac within the cervical canal, and serial beta-human chorionic gonadotropin (β-hCG) levels rose significantly. Following multidisciplinary consultation, the patient successfully underwent ultrasound-guided suction evacuation with the prophylactic placement of a cervical cerclage for haemorrhage control. Intraoperative blood loss was minimal (150 mL), and the patient recovered uneventfully with complete resolution of β-hCG levels. This case demonstrates that early diagnosis, thorough preoperative planning, and prophylactic haemostatic techniques can make ultrasound-guided surgical evacuation a safe and effective management option for cervical ectopic pregnancies.

Categories: Obstetrics/Gynecology
Keywords: bleeding risk, cervical ectopic pregnancy, early pregnancy imaging, early pregnancy ultrasound, non-tubal ectopic pregnancy, prophylactic cervical cerclage, ultrasound-guided

Introduction

Cervical ectopic pregnancy is an uncommon and potentially life-threatening form of ectopic implantation, accounting for fewer than 1% of ectopic pregnancies [1]. Early diagnosis and careful procedural planning are essential to reduce haemorrhagic risk and preserve fertility. This case describes a cervical ectopic pregnancy occurring in a patient with a recent miscarriage managed surgically and a prior large loop excision of the transformation zone (LLETZ), which are both risk factors for cervical ectopic pregnancy.

This case was previously presented as a poster presentation at the Royal College of Obstetricians and Gynaecologists (RCOG) National Trainee Conference on June 18, 2026.

Case Presentation

A woman in her 30s, G2P0, presented with three days of intermittent lower abdominal cramping. She had experienced a miscarriage four weeks earlier and opted for surgical management of the miscarriage. Her history included an LLETZ to a depth of 3 mm two years prior. She had no other significant past medical history. She had three negative pregnancy detection tests (PDTs) following surgical management of the miscarriage and then a positive PDT on the day of presentation. She had not had a period since the surgical management of the miscarriage.

An initial transvaginal ultrasound (TVUSS) demonstrated a pregnancy of unknown location (PUL). Serum beta-human chorionic gonadotropin (β-hCG) was 430 IU/L. She was managed expectantly. On follow-up six days later, repeat TVUSS revealed a gestational sac-like structure containing a yolk sac within the cervical canal at the level of the internal os, consistent with a cervical ectopic pregnancy (Figures *1*, *2*). β-hCG had risen to 4,251 IU/L over five days.

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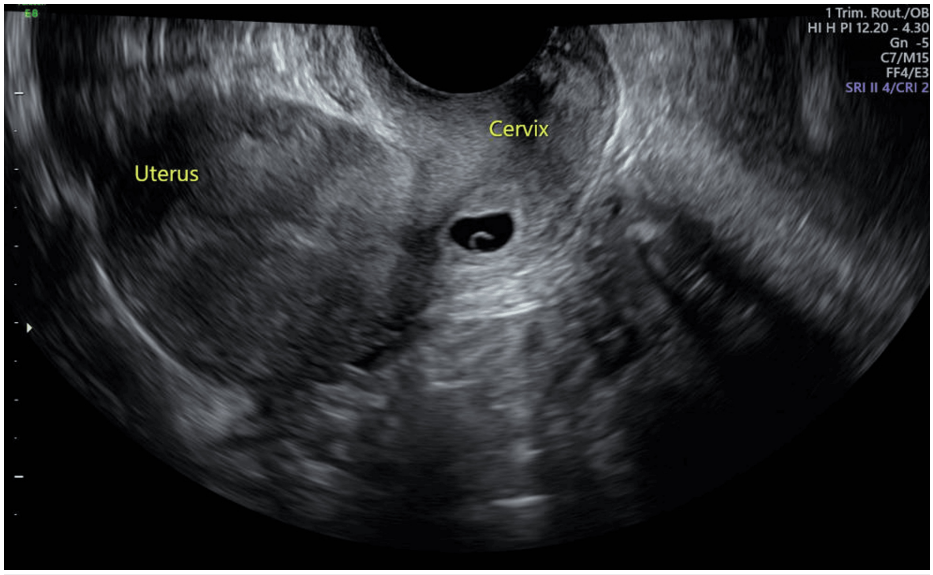


FIGURE 1: Transvaginal ultrasound sagittal view of the uterus and cervix. Empty uterus and gestational sac and yolk sac can be seen below the level of the internal os.

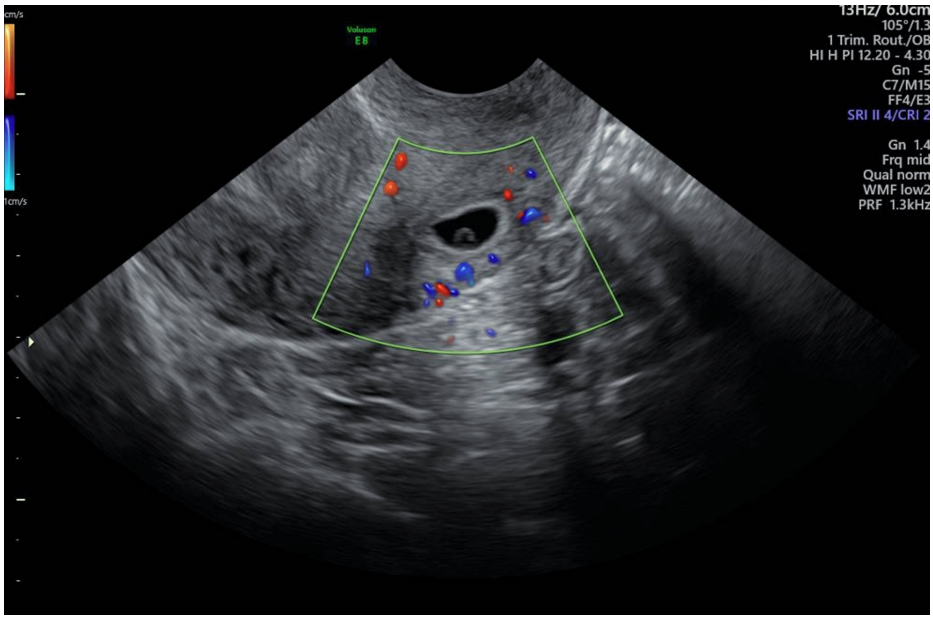


FIGURE 2: Transvaginal ultrasound sagittal view of the uterus and cervix showing gestation sac and yolk sac below the level of the internal os with Doppler flow present.

Ultrasound features of cervical ectopic pregnancy include [2] an empty uterus, a barrel-shaped cervix, a gestational sac present below the level of the internal os, which is at the level of the uterine arteries, absence of the sliding sign (when pressure is applied to the cervix using the probe, the gestational sac slides against the endocervical canal in a miscarriage, but does not in an implanted cervical pregnancy), and blood flow around the gestational sac on colour Doppler. A diagnosis of cervical ectopic pregnancy following recent surgical management of miscarriage was made.

Management

The patient was recanned three days later, which again showed a gestational sac and yolk sac at the level of the internal os with increased colour Doppler flow. We discussed the case with the tertiary unit, who

reviewed the images and agreed with the diagnosis. They advised we speak to University College London (UCL) to discuss management options. The team at UCL advised that we manage the case surgically under ultrasound guidance, and either prophylactically place a cervical suture or be prepared to place a cervical suture if bleeding occurs during the procedure. Following discussion with the patient, she decided to proceed with surgical management. Surgery was planned for a date 12 days after her initial presentation. The patient underwent surgical management under general anaesthesia with real-time ultrasound guidance.

Preoperative planning

While the patient was anaesthetised, before instrumentation, both transabdominal (TA) and transrectal (TR) ultrasound scans were performed to determine which approach provided optimal visualisation of the cervical gestational sac. TA ultrasound offered superior views, and this modality was chosen for intraoperative guidance. A cervical cerclage stitch was placed before the procedure as a precautionary haemostatic measure. The stitch was left untied, positioned to be rapidly tightened if significant bleeding occurred.

Surgical evacuation

A straightforward suction evacuation was performed under continuous TA ultrasound guidance. Instrument placement and suction positioning were closely monitored to ensure complete evacuation while minimising cervical trauma. Only minimal tissue was observed in the suction tubing, consistent with early gestation. Estimated blood loss at the end of the procedure was 150 mL. As haemostasis was satisfactory, the cerclage stitch was removed without the need for tightening. The patient recovered uneventfully and was discharged the same day with appropriate follow-up.

A TVUSS was performed before discharge (Figure *3*), which showed distention and disruption to the endocervical canal. The previously seen gestation sac and yolk sac could not be visualised.

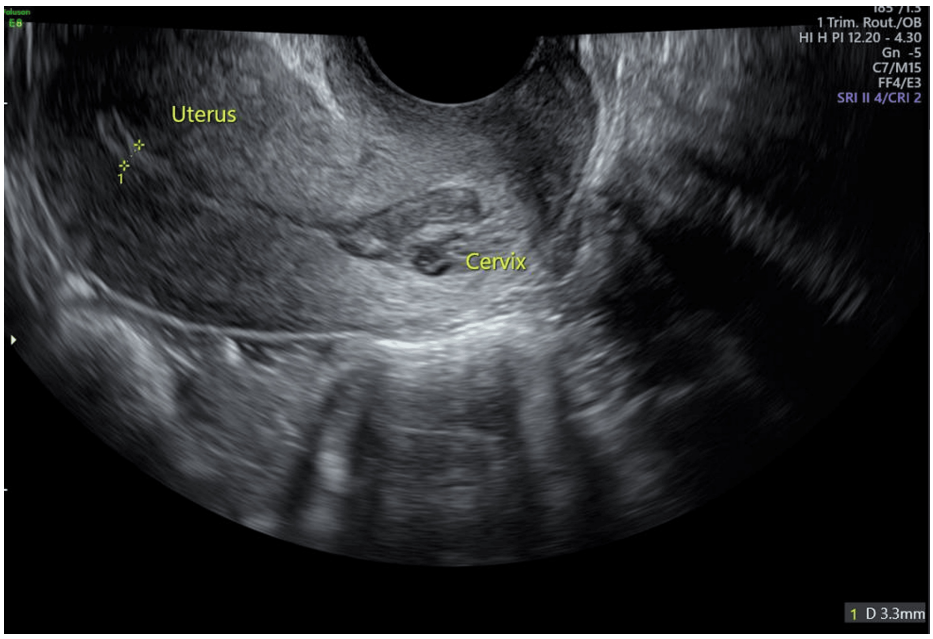


FIGURE 3: Transvaginal ultrasound sagittal view of the uterus and cervix. Disruption can be seen to the endocervical canal. Previously seen gestation sac and yolk are no longer present.

Follow-up

A plan was made for weekly β-hCG and repeat TVUSS in three weeks. Repeat TVUSS three weeks later showed a normal anteverted uterus and long, closed cervix, which appeared normal in structure and with no increased Doppler flow. The patient was discharged from follow-up 62 days after surgical management of cervical ectopic pregnancy (Table *1*).

Day since presentation	β-hCG IU/L (<5 IU/L = negative result)
Day 0	129
Day 2	430
Day 7	4,251
Day 9	10,610
Day 10	14,503
Day 13 (day of surgery)	10,180
Day 14	5,105
Day 21	388
Day 28	263
Day 35	292
Day 42	273
Day 49	192
Day 54	98
Day 61	41
Day 68	14
Day 75 (discharged)	4

TABLE 1: Serial beta-human chorionic gonadotropin (β-hCG) timeline.

A plan was made for an early pregnancy scan at seven weeks in future pregnancies, along with referral to the preterm labour clinic due to the potential damage to her cervix caused by the cervical ectopic and subsequent surgical management, which may increase her risk of preterm labour in future pregnancies.

Discussion

This case highlights several learning points: cervical ectopic pregnancy may occur shortly after uterine instrumentation, including surgical management of miscarriage or surgical termination of pregnancy [3]; prior LLETZ may alter cervical anatomy and contribute to abnormal implantation; pre-procedure ultrasound route assessment can optimise visibility and procedural safety; placement of a prophylactic cerclage stitch provides an effective haemorrhage control contingency during surgical evacuation; and ultrasound-guided suction evacuation can be safe and effective in selected early cervical ectopic pregnancies.

Risk factors for cervical ectopic include uterine curettage being the most common, previous ectopic pregnancy, salpingectomy, and assisted reproductive technologies [3]. A retrospective, quasi-experimental case-control study of cervical ectopic pregnancy cases from 2000 to 2013 confirmed that dilation and curettage (D&C) is a strong risk factor for cervical ectopic pregnancy compared with other abnormally sited pregnancies [3]. Retrospective studies have demonstrated a significantly increased risk among women with a history of cervical ectopic pregnancy, and numerous case series and reviews identify prior uterine or cervical trauma as one of the most frequently reported antecedent factors [3]. The exact mechanism is poorly understood, but one theory is that trauma or damage to the endometrium as a result of uterine instrumentation prevents normal implantation of the embryo in the endometrial cavity and results in the blastocyst implanting lower down in the cervix. This patient presented with two prior surgical interventions recognised as risk factors for cervical ectopic pregnancy: a history of uterine curettage and a prior LLETZ. While previous uterine curettage is the more common and well-documented risk factor, cervical surgery such as LLETZ represents an additional, distinct mechanical contributor. Together, these procedures potentially cause damage to both endometrial cavity and cervical architecture.

There are a wide range of treatment options for cervical ectopic pregnancy, which include conservative management with β-hCG monitoring, medical management with methotrexate, and sometimes intra-amniotic injection of potassium chloride or methotrexate plus mifepristone [4,5]. Surgical management options include suction evacuation (with or without vasopressin), hysteroscopic resection, or total hysterectomy, as well as uterine artery embolisation [6-8].

RCOG's Green-top Guideline [9] "No. 21: Diagnosis & Management of Ectopic Pregnancy" discusses the use of methotrexate as first-line management in haemodynamically stable patients and surgical techniques being reserved for unstable patients and those for whom methotrexate is unsuitable or contraindicated, due to the risk of haemorrhage requiring emergency hysterectomy. This case demonstrates that early accurate diagnosis of cervical ectopic pregnancy, multidisciplinary planning, and haemostatic techniques can make surgical management with dilation and suction curettage a safe and acceptable management option.

With all forms of treatment for cervical ectopic pregnancy, it is important to remember the increased risk of bleeding. Ensure preoperative optimisation of haemoglobin, ready availability of blood products and haemostatic agents, and the ability to convert to hysterectomy in the presence of catastrophic haemorrhage rapidly.

Management of cervical ectopic pregnancy has evolved over time, primarily due to improved access to ultrasound and better quality and interpretation of images, which enables us to correctly diagnose cervical ectopic pregnancy earlier and avoid catastrophic bleeding, as well as lifesaving emergency hysterectomy.

Conclusions

This case emphasises the importance of vigilant follow-up in cases of PUL, early diagnosis of cervical ectopic pregnancy, thorough preoperative planning, and the value of ultrasound guidance in safely managing cervical ectopic pregnancies. The combined approach enabled successful surgical treatment with minimal blood loss and without the need for additional haemostatic measures.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Kendra McGrath, Caroline Hicks

Acquisition, analysis, or interpretation of data: Kendra McGrath, Caroline Hicks

Drafting of the manuscript: Kendra McGrath, Caroline Hicks

Critical review of the manuscript for important intellectual content: Kendra McGrath, Caroline Hicks

Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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