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Case Report

Silent uterine perforation and omental embedding of a Mirena® intrauterine device in a postpartum patient with undiagnosed uterine anomaly: a case report

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ABSTRACT

Levonorgestrel-releasing intrauterine systems (LNG-IUS) are commonly used for long-acting reversible contraception. While generally safe and effective, they carry a rare but serious risk of uterine perforation, particularly in the presence of risk factors like recent childbirth, breastfeeding or congenital uterine anomalies. We present the case of a 35-year-old, gravida 5 para 3, female who presented with chronic abdominal pain and missing intrauterine device threads ten months after postpartum Mirena® insertion. Transvaginal ultrasound failed to visualise the device. A pelvic X-ray and computed tomography (CT) scan confirmed extrauterine migration, with the intrauterine device (IUD) embedded in the omentum. Laparoscopy revealed a scar on the posterior uterine wall suggestive of silent uterine perforation, and hysteroscopy demonstrated a subseptate uterus. The device was successfully removed laparoscopically. This case emphasises the importance of anatomical screening prior to IUD insertion, the need for post-insertion imaging, and timely investigation of symptoms. It highlights how silent uterine perforation and subsequent delayed diagnosis of IUD-related complications can be avoided through adherence to established clinical guidelines, such as those provided by the Royal College of Obstetricians and Gynaecologists (RCOG) and Faculty of Sexual and Reproductive Healthcare (FSRH) recommendations.

Keywords: Contraceptive complications, Intrauterine device, Mirena®, Uterine perforation, Subseptate uterus

INTRODUCTION

The levonorgestrel-releasing intrauterine systems (LNG-IUS) are one of the most effective long-acting reversible contraceptive methods, with data suggesting 3.2 to 6.1% of Australian contracepting women use LNG-IUS.[1] Mirena®, the first LNG-IUS, was introduced in the 1990s as a T-shaped device designed for intrauterine insertion.[2] It is generally safe and up to 99% effective in preventing pregnancy. Minor adverse effects including abdominal pain, headache, breast tenderness and acne, and in some rare cases, ovarian cysts and uterine perforation.[2] Perforation rates are estimated at 0.1–2.6 per 1,000 insertions and can lead to serious complications such as migration, visceral injury and unplanned pregnancy.

Uterine perforation is classified as either complete or partial. Complete perforation occurs when the intrauterine device (IUD) passes through all layers of the uterus—endometrium, myometrium, and serosa—while partial perforation involves penetration into the myometrium without full transgression of the uterine wall.[3] A partial perforation may remain stable or progress to a complete perforation within a few days.[4] Risk factors include insertion during the postpartum period, lactation, and unrecognised uterine anomalies. The Royal College of

Obstetricians and Gynaecologists (RCOG) and the Faculty of Sexual and Reproductive Healthcare (FSRH) recommend caution in high-risk populations and advise post-insertion follow-up and imaging to confirm placement.

A subseptate uterus is a type of congenital uterine anomaly where a thin band of tissue, known as a septum, partially divides the uterine cavity**.** It results from incomplete resorption of the tissue that forms the uterus during embryonic development. Unlike a complete septate uterus, the division does not extend fully to the cervix, and the outer uterine contour remains normal. Subseptate uteri may be asymptomatic but are associated with an increased risk of miscarriage, infertility, and complications with intrauterine device placement due to altered cavity shape.[5]

This case report highlights the rare triad of silent uterine perforation, delayed presentation, and undiagnosed underlying uterine anomaly.

CASE REPORT

A 35-year-old female, gravida 5 para 3, had a Mirena® IUD inserted six weeks after a normal vaginal delivery in January 2024. The patient was breastfeeding at the time. The insertion was uncomplicated and performed by a trained provider. The patient had no known uterine anomalies at the time. A routine post-insertion ultrasound was not performed.

Over the next ten months, she developed vague but persistent lower abdominal and back pain, with intermittent left iliac fossa discomfort. In October 2024, she reported an inability to feel the IUD threads. A transvaginal ultrasound failed to visualise the device within the uterus.

A pelvic X-ray demonstrated the IUD projected high in the pelvis, overlying the left iliac wing well above the uterine silhouette (Figure 1). A subsequent computed tomography (CT) scan confirmed extrauterine placement of the device embedded in the omental fat, suggestive of silent uterine perforation.

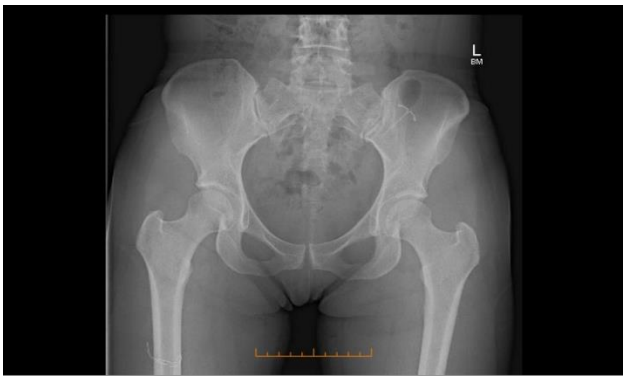

Figure 1: Pelvic X-ray showing Mirena® IUD projected over the left iliac wing.

Surgical findings and management

In December 2024, the patient underwent diagnostic hysteroscopy and laparoscopy. Hysteroscopy revealed a subseptate uterus with normal endometrium and patent tubal ostia. No IUD was found in the uterus. Laparoscopy located the Mirena® device embedded in the omentum, near the uterine fundus (Figure 2). A small scar on the posterior uterine wall was visible, consistent with the site of silent perforation. There was no bowel involvement or significant adhesions. The IUD was carefully dissected and removed laparoscopically without complications.

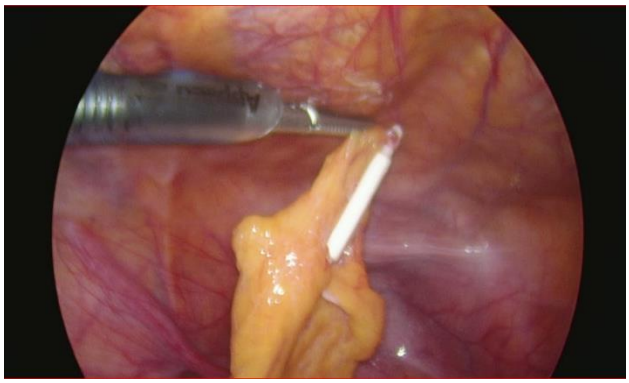

Figure 2: Laparoscopic image showing Mirena® IUD embedded in omental tissue.

The patient had an uneventful recovery and was discharged the following day. She was reviewed in follow-up clinic and advised on future contraceptive options. Evaluation for congenital anomalies was recommended.

DISCUSSION

Uterine perforation is a serious but uncommon complication of IUD insertion. The RCOG defines high-risk situations for perforation as recent postpartum status (<6 months), breastfeeding, or anatomical uterine abnormalities. In this case report, the patient presented with a rare triad of being six weeks postpartum, breastfeeding and had a previously undiagnosed subseptate uterus, all of which may have contributed to incorrect positioning and/or migration of the IUD.

Perforation is thought to occur via either a primary or secondary mechanism.[4] Primary perforation occurs during the insertion procedure, and may be related to misdirection during insertion, abnormal uterine position, or insertion in a postpartum uterus. During pregnancy and the postpartum period, the myometrium remains softer and more pliable, making it up to seven times more susceptible to injury such as tearing or perforation compared to non-post-partum patients.[4,6] In this case, the IUD was inserted six weeks postpartum in a breastfeeding patient. Additionally, no routine post-insertion ultrasound was performed. Had it been done; early detection of malposition may have occurred. Secondary perforation is a gradual process and believed to result from myometrial erosion by a partially

embedded IUD. Uterine contractions exert pressure on the mispositioned IUD, combined with chronic inflammation induced by the device, causing mechanical movement of the IUD over time.

The site of perforation is influenced by uterine orientation. In an anteverted uterus, posterior wall perforation is more frequently observed as seen in this case whereas anterior wall perforation is more common in a retroverted uterus.[4] A review of 179 case reports found that, following complete perforation, the omentum is the most common site of IUD migration a finding also consistent with this case.[3] The use of IUDs in individuals with uterine anatomical anomalies, including subseptate or septate uteri, should be approached with caution. A literature review of 19 case reports of women with uterine anomalies found complications of IUD relating to unwanted pregnancy, expulsion, bleeding and uterine perforation, as detailed in this case.[7] In such situations where anomalies are detected, alternative contraceptive methods or specialised insertion techniques should be considered to minimise risks.

According to FSRH guidelines, follow-up at three to six weeks is advised to confirm placement and review symptoms. The RCOG further recommends that missing IUD threads, persistent pelvic pain, or abnormal bleeding in IUD users especially over age 35 warrant further investigation with transvaginal ultrasound, X-ray, and CT scan if needed.

CONCLUSION

Silent uterine perforation remains a rare but clinically significant risk of IUD use. Postpartum patients with undiagnosed uterine anomalies are particularly vulnerable. This case demonstrates how adherence to RCOG and FSRH recommendations for anatomical screening and post-insertion review can aid in timely detection and management. Clinicians should maintain a high index of suspicion when facing unexplained pelvic pain or missing threads and proceed with appropriate imaging to prevent complications.

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