CASE REPORT

Hematometra in a Perimenopausal Woman Secondary to Membranous Cervical Obliteration: A Rare Presentation

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Abstract

Aim and background: Hematometra, defined as the accumulation of blood within the uterine cavity due to outflow tract obstruction, is a rare finding in perimenopausal women and is typically associated with causes such as malignancy or prior instrumentation.

Case description: A 52-year-old perimenopausal woman presented with acute lower abdominal pain and 8 months of amenorrhea. Imaging with ultrasonography (USG) and magnetic resonance imaging (MRI) revealed hematometra extending into the cervix without evidence of neoplasia. She underwent hysteroscopic evaluation with electrocautery puncture and cervical dilatation, evacuating 250–300 mL of altered blood. Postoperative recovery was uneventful, and follow-up ultrasound confirmed complete resolution of the collection.

Conclusion: Early imaging and minimally invasive intervention can achieve excellent outcomes in hematometra, even in atypical perimenopausal presentations.

Clinical significance: Hematometra in perimenopausal women, though rare, should be considered in those with lower abdominal pain or amenorrhea, as timely recognition and conservative management prevent serious complications.

Keywords: Case report, Cervical stenosis, Hematometra, Hysteroscopy, Perimenopausal.

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Introduction

Hematometra, defined as the accumulation of blood within the uterine cavity due to outflow tract obstruction, is an uncommon clinical entity, particularly in perimenopausal women.[1] It is more frequently encountered in adolescents as a consequence of congenital anomalies such as an imperforate hymen or a transverse vaginal septum.[2,3] In contrast, acquired forms in adults are usually attributed to iatrogenic causes, cervical stenosis, malignancy, or radiation therapy, particularly in the context of hypoestrogenic postmenopausal changes.[4] The prevalence of perimenopausal hematometra is low, and even more rarely does it present without overt symptoms of bleeding, posing a diagnostic challenge and often masquerading as nonspecific pelvic pain or mass effect.[5]

Cervical stenosis, especially when progressive and asymptomatic, may go undetected until complications such as hematometra or pyometra arise.[6] The perimenopausal uterus, owing to endometrial atrophy and cervical narrowing, is inherently less prone to bleeding, making the occurrence of hematometra in this population particularly rare and clinically significant.[4] Ultrasonography (USG) and transvaginal imaging remain the primary diagnostic tools, often revealing a distended endometrial cavity with echogenic or anechoic fluid, necessitating differentiation from malignancy.[7] Management depends on the underlying etiology and symptomatology and ranges from cervical dilation with drainage to more invasive procedures in refractory cases.[8]

Here, we report an unusual case of hematometra in a 52-year-old perimenopausal woman, secondary to cervical stenosis, who presented with abdominal pain and was managed successfully. This case underscores the importance of maintaining a high index of suspicion for hematometra even in nonreproductive age women and highlights the role of prompt imaging and minimally invasive intervention in achieving favorable outcomes.

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Case Description

A 52-year-old perimenopausal woman presented to our outpatient department with complaints of lower abdominal pain for 4 days. The pain was described as dull, insidious in onset, gradually progressive, and radiating to the back, with no specific aggravating or relieving factors. It was not associated with fever, gastrointestinal symptoms, urinary disturbances, vaginal discharge, or bleeding per vaginum. Her past menstrual history revealed amenorrhea of 8 months after regular cycles with moderate flow and associated dysmenorrhea. She had no history of hormone replacement therapy or intrauterine instrumentation in the recent past.

Her obstetric history included three cesarean sections. She underwent tubal sterilization 18 years ago. There was no significant

Fig. 1: Drainage of accumulated hematometra through the cervical os following gentle cervical opening

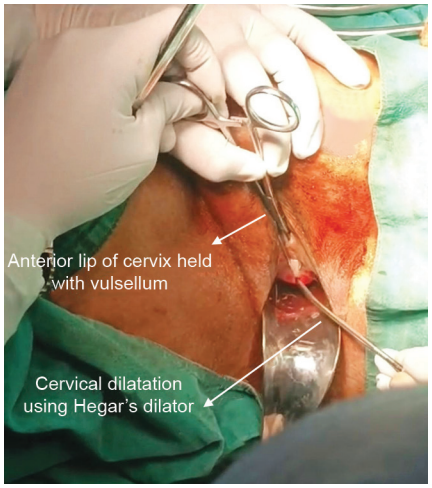

Fig. 2: Anterior lip of the cervix grasped with a vulsellum while cervical dilatation is performed using a Hegar's dilator

past medical history of hypertension, diabetes, tuberculosis, thyroid dysfunction, or cardiac illness. Surgical history was significant for a previous hernia repair.

On general examination, the patient was conscious, oriented, and hemodynamically stable (BP 120/80 mm Hg, PR 82 bpm). Abdominal examination revealed mild suprapubic tenderness without guarding or rigidity. Pelvic examination revealed a bulky, firm uterus and cervix, with a bluish bulge noted on per speculum examination. There was no cervical motion tenderness. The clinical suspicion was raised for a hematometra or pyometra, and the patient was admitted for further evaluation.

Initial ultrasonography of the abdomen and pelvis revealed a bulky uterus with a moderate collection of fluid in the endometrial canal and cervical canal, containing multiple internal echoes and septations, suggestive of hematometra. A transvaginal sonogram (TVS) confirmed these findings, showing a hypoechoic endometrial collection extending into the cervical canal. Magnetic resonance imaging (MRI) pelvis revealed a well-circumscribed collection measuring approximately 114 × 45 × 49 mm, hyperintense on T1-weighted and intermediate on T2-weighted images, distending the endometrial cavity and upper third of the vagina, suggestive of hematometrocolpos. No mass lesion or malignant features were noted. The collection was seen abutting the posterior bladder wall and anterior rectal wall, and the lower two-thirds of the vagina appeared normal. A diagnosis of hematometra, likely secondary to cervical or vaginal stenosis, was made (Fig. 1).

Routine blood investigations showed mild normocytic normochromic anemia [hemoglobin (Hb) 10 gm/dL], leukocytosis [total leukocyte count (TLC) 13400/mm^3] with neutrophilia, and an elevated erythrocyte sedimentation rate (ESR 21 mm/hr). Thyroid profile revealed elevated thyroid-stimulating hormone (TSH) (14.049 µIU/mL), consistent with hypothyroidism, which could contribute to endometrial changes. Other parameters, including liver and renal function tests, coagulation profile, and viral markers [human immunodeficiency virus (HIV), hepatitis B surface antigen (HBsAg), hepatitis C virus (HCV)], were within normal limits.

After pre-anesthetic evaluation and informed consent, the patient was posted for hysteroscopic evaluation and drainage. Under spinal anesthesia, the patient was placed in the lithotomy position. The cervix was exposed using Sims' speculum and retractor. Notably, there was no requirement for a formal incision. Instead, a bluish bulge was noted over the anterior lip of the cervix, which was cauterized and punctured using electrocautery. Approximately 250–300 mL of thick, altered blood was drained, confirming the diagnosis of hematometra. The anterior lip of the cervix was held with a vulsellum, and gentle cervical dilatation was done using Hegar's dilators. A hysteroscope was introduced into the uterine cavity, which revealed narrowing of the cervical canal with a fibrous band, and an internal os that was barely visible. The uterine cavity was irrigated with 200–250 mL of saline to clear clots and ensure complete evacuation (Fig. 2).

There was no evidence of active bleeding, retained products, or any endometrial growths. The patient tolerated the procedure well and was shifted to recovery in a stable condition. Postoperative care included intravenous antibiotics, analgesics, and monitoring for signs of recurrent bleeding or infection.

The patient was discharged the following day with advice for oral antibiotics and supportive medications and was asked to return for follow-up after 10 days. A repeat pelvic ultrasound performed during follow-up revealed complete resolution of the intrauterine collection, and the patient was asymptomatic.

This case highlights a rare occurrence of hematometra in a perimenopausal woman, which is uncommon in the absence of malignancy, radiation history, or recent instrumentation. Cervical stenosis resulting in obstructed menstrual outflow or endometrial secretions is an unusual but important cause, particularly in perimenopausal women with prior cesarean deliveries and uterine surgeries. Early diagnosis through imaging and prompt, minimally invasive hysteroscopic intervention can prevent complications such as infection, sepsis, or uterine rupture. Reporting such cases is essential to increase clinical awareness and emphasize the importance of considering hematometra in elderly perimenopausal women presenting with acute abdominal pain.

Discussion

Hematometra in perimenopausal women is an uncommon clinical entity, particularly in the absence of malignancy, recent instrumentation, or pelvic irradiation. In the present case, the diagnosis of hematometra secondary to cervical stenosis was established based on characteristic imaging findings and intraoperative confirmation. This is a particularly rare scenario, as

perimenopausal endometrial activity is typically minimal and does not usually result in the accumulation of blood products within the uterine cavity. However, as demonstrated in this case, obstructive factors like cervical stenosis can lead to significant blood retention even in perimenopausal women.

In a related case by Rezai et al.[8] a 41-year-old woman with prior cervical procedures developed hematometra due to cervical canal occlusion, which was managed successfully with ultrasound-guided cervical dilation and drainage. Similarly, our patient had a history of multiple cesarean sections and uterine surgeries, which may have contributed to acquired cervical fibrosis and stenosis, even without any recent instrumentation. While congenital causes such as imperforate hymen are more frequently associated with hematometrocolpos in adolescents, as discussed in studies by Nusrath and Anwar, Gharat et al., and Saleh et al., acquired cases in older women necessitate high clinical suspicion, especially in the absence of overt bleeding.[9–11]

Gabby et al. reported hematometrocolpos following complicated cesarean delivery with subsequent genital tract obstruction, emphasizing the importance of postoperative genital evaluation.[12] In contrast to that case, our patient did not have any recent obstetric event, reinforcing that late-onset cervical stenosis may occur long after initial surgeries and still lead to significant hematometra.

Magnetic resonance imaging played a crucial role in this case, revealing a well-defined hyperintense collection on T1-weighted imaging, a hallmark of old blood accumulation. Similar MRI utility was highlighted by Toscano et al.[13] and Vedak et al.,[14] where precise delineation of hematometrocolpos was essential in differentiating it from neoplastic or infective masses. Unlike pediatric cases, which often require extensive reconstructive surgeries for congenital anomalies, our patient responded well to simple puncture and hysteroscopic evaluation without the need for formal incision or excision.

This case also adds to the literature by presenting an unusual finding of a fibrous cervical band, visible on hysteroscopy, and a nonvisualized internal os. The minimal invasive approach using electrocautery puncture and Hegar's dilation sufficed to relieve the obstruction, a technique echoed in the management of similar cases by Rezai et al.[8] and Pipal et al.[15] This conservative approach minimizes risks associated with major surgery and enables faster recovery, as evident from our patient's uneventful postoperative course and complete resolution of symptoms on follow-up imaging.

The presence of subclinical hypothyroidism (elevated TSH) in our patient may also warrant consideration, as thyroid dysfunction has been associated with menstrual irregularities and possible endometrial changes. Though its role in the direct causation of hematometra is unclear, it remains a potential contributing factor that should be evaluated and addressed, as recommended in broader endocrinologic assessments of gynecological conditions.

This case highlights the need to consider hematometra in the differential diagnosis of lower abdominal pain in perimenopausal women, particularly those with prior uterine surgeries. Prompt imaging and minimally invasive intervention can prevent complications like sepsis, endometrial damage, and uterine rupture. Reporting such cases augments clinician awareness and promotes early detection of this rare but significant diagnosis.

Conclusion

This case illustrates a rare but clinically significant presentation of hematometra in a perimenopausal woman, highlighting the diagnostic challenges in the absence of typical risk factors like recent instrumentation or malignancy. The patient's prior cesarean deliveries and cervical fibrosis likely contributed to occult outflow obstruction, culminating in symptomatic hematometra. Radiological modalities, especially MRI, proved indispensable in confirming the diagnosis and excluding malignancy. Timely recognition and intervention not only alleviated symptoms but also prevented potential complications such as infection or uterine rupture. This case contributes meaningfully to the limited literature on perimenopausal hematometra and advocates for broader diagnostic consideration in atypical presentations.

Clinical Significance

This case underscores that hematometra, though rare in perimenopausal women, can arise from cervical stenosis even without malignancy or recent procedures. Early recognition with imaging and prompt minimally invasive drainage are crucial to relieve symptoms, prevent complications like infection or uterine rupture, and avoid unnecessary extensive interventions.

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