

## CASE REPORT

# A rare cause of amenorrhea: Hematocolpos in a post-cystocele repair patient

Tibyan Noorallah Mohammed<sup>1</sup> | Ammar Elgadi<sup>1</sup>  | Gamal Mohi Eldeen Nuri<sup>2</sup>

<sup>1</sup>Faculty of Medicine, University of Khartoum, Khartoum, Sudan

<sup>2</sup>Obstetrics and Gynecology Department, Atbara Teaching Hospital, Khartoum, Sudan

**Correspondence**

Ammar Elgadi, Faculty of Medicine, University of Khartoum, Khartoum, Sudan.

Email: [ammartarig56@gmail.com](mailto:ammartarig56@gmail.com)

**Key Clinical Message**

Secondary hematocolpos is a rare but serious complication after cystocele repair. This warrants multidisciplinary management (gynecology and urology) to optimize outcomes & minimize iatrogenic risks.

**Abstract**

Hematocolpos is the term used for the accumulation of menstrual blood in the vagina. It is most commonly seen in adolescent girls but can also occur in elderly women as a result of gynecological conditions. We present the case of a 48-year-old female who presented with amenorrhea and abdominal pain following surgical repair of a cystocele. Investigation revealed secondary hematocolpos due to surgical trauma. Surgical drainage and correction of the uterus were performed, resulting in immediate pain relief. This case underscores the importance of considering hematocolpos in patients with post-surgical amenorrhea, and further research is needed to better understand its causes, risk factors, and optimal management strategies.

**KEYWORDS**

amenorrhea, hematocolpos, pelvic surgery, perimenopause

## 1 | INTRODUCTION

Hematocolpos refers to the accumulation of menstrual blood in the vagina due to obstruction of the reproductive tract. It is a rare condition that typically occurs in adolescent girls shortly after menarche or in women of reproductive age, and it is usually associated with a congenital or acquired structural abnormality. Hematocolpos can cause a variety of symptoms, including cyclic pelvic pain, amenorrhea, and urinary or gastrointestinal disturbances.<sup>1</sup>

When hematocolpos is observed in adult women, it often occurs secondary to acquired gynecological

conditions such as cervical or vaginal atresia, imperforate hymen, or vaginal scarring following surgery or trauma.<sup>2</sup> In some cases, hematocolpos can be associated with Mullerian duct anomalies, which encompass a range of structural defects involving the uterus, cervix, and upper vagina.<sup>3,4</sup>

The diagnosis of hematocolpos is typically made through clinical examination and imaging modalities such as transabdominal or transvaginal ultrasonography, magnetic resonance imaging (MRI), or hysterosalpingography.<sup>5</sup> Treatment options for hematocolpos depend on the underlying cause and may range from simple surgical procedures to open surgical interventions.<sup>5</sup>

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## 2 | CASE PRESENTATION

### 2.1 | Case history and examination

A 48-year-old female presented to Atbara Teaching Hospital with a complaint of amenorrhea for the past 6 months following surgical repair of a cystocele. She also reported experiencing lower abdominal pain, which was colicky, of moderate intensity, radiating to the back, and accompanied by nausea and vomiting.

Regarding her gynecological history, the patient is uncertain about her menarche and denies any history of abnormal vaginal bleeding or intermenstrual bleeding. She underwent surgical repair of a cystocele 8 months ago and has not used any contraceptive methods.

In terms of her obstetric history, the patient has had four previous deliveries, all of which were uncomplicated and achieved through normal vaginal delivery.

The patient has a history of newly diagnosed hypertension 8 months ago and is currently controlled by taking Amlodipine 10 mg and Candesartan 8 mg. She has no history of diabetes or asthma but received 2 units of blood in the past.

During examination, the patient appeared unwell and was in pain but not pale or jaundiced. Her blood pressure was 100/60 mmHg, her heart rate was 80 bpm, and her respiratory rate was 24 breaths per minute. Laboratory investigations were as shown in (Table 1).

She experienced a rare blood loss during the previous operation, necessitating a blood transfusion. Ultrasound examination revealed the presence of fluid in the uterine cavity and pelvic area, with the uterus pushed upwards.

### 2.2 | Treatment and outcome

Regarding management, the patients underwent surgical drainage and correction of the uterus. The operation was conducted under aseptic conditions to minimize the risk of infection, and the patient was positioned in the lithotomy position, lying on their back with legs elevated and

flexed at the knees and hips. Before the procedure began, the bladder was emptied to provide better access to the surgical site and minimize the risk of accidental injury to the bladder. The posterior wall of the vagina was opened using a blade to create an incision, allowing access to the vagina and uterus for drainage of the accumulated black-colored blood. The accumulated menstrual blood was drained followed by a vaginal wash using normal saline to clean the area and remove any remaining blood or debris. Forceps were used to clamp the cervix to stabilize and align the uterus properly during the corrective procedure. The uterus was corrected to its normal anatomical position, and then washed and cleaned to remove any remaining blood or debris. Circumcision was re-performed on her request. A catheter was inserted into the bladder and left in place for 24 h post-surgery to ensure proper drainage of urine prevent urinary retention due to swelling or trauma, and monitor the patient. After the catheter was removed and the patient stabilized, she was discharged from the hospital.

## 3 | DISCUSSION

We presented a 48-year-old female with a short history of amenorrhea and abdominal pain after the surgical repair of a cystocele. Investigation suspicion of secondary hematocolpos. Hematocolpos usually occurs in adolescents and preadolescents aged 11–23 years and is usually due to congenital imperforated hymen.<sup>6</sup> However, in our Case report, the patient was previously healthy with a normal menstrual cycle until the last 8 months, when she underwent surgical repair of a cystocele when she had amenorrhea. This indicates hematocolpos as a rare complication of cystocele repair, which may lead to significant morbidity if not treated.

Compared with the reported cases of hematocolpos, this Case has a similar presentation of amenorrhea and abdominal pain.<sup>6</sup> Investigations were also indicative of fluid collection in the pelvic cavity. However, it differs in the history of surgery; a possible trauma during cystocele repair may contribute to the post-surgical accumulation of blood, as some studies indicate that pelvic repair surgery can be complicated by hematoma or blood loss from sutures.<sup>7</sup> Our Case is similar in presentation to the Case of hematometra after the Loop Electrosurgical Excision Procedure.<sup>1</sup>

Taking into account the surgical history of our patient, the differential diagnosis included a wide spectrum of gynecological conditions, most notably pelvic inflammatory disease and endometriosis.<sup>7,8</sup> Yet, the ultrasound was vital in reaching this diagnosis; it has been reported to be diagnostic in many case reports.<sup>6</sup>

TABLE 1 Laboratory investigations.

| Test                            | Result              | Units           | Reference range                  |
|---------------------------------|---------------------|-----------------|----------------------------------|
| Hemoglobin (HB)                 | 10.6 g/dL           | g/dL            | 12–16 g/dL                       |
| Platelets                       | 257/μL              | μL              | 150,000–450,000/μL               |
| Total white blood cells (TWBCs) | $3.8 \times 10^9/L$ | $\times 10^9/L$ | $4.0\text{--}11.0 \times 10^9/L$ |
| Pus cells in urine              | 10–12               |                 | 0–5                              |
| Blood urea                      | 15                  | mmol/L          | 2.1–8.5 mmol/L                   |
| Serum creatinine                | 0.6 mg/dL           | mg/dL           | 0.59–1.04 mg/dL                  |
| Viral screening                 | Negative            |                 | Negative                         |

Hematocolpos impacts the patient's quality of life by causing severe pain and emotional stress due to amenorrhea. In our case, the patient is already in the premenopausal age range for Sudanese females,<sup>9</sup> which may result in a late presentation until she has developed severe abdominal pain.

Regarding the treatment, the patients underwent surgical drainage of the blood. This is a well-documented approach to treatment,<sup>6</sup> and it was appropriate and available in this situation. Other modalities of treatment include laparoscopic drainage, which is used for symptom relief but is not considered a definitive treatment.<sup>6</sup> The choice depends on the severity and complexity of the condition, in addition to the available resources. A recent study investigated the role of interventional radiology and image-guided drainage.<sup>10</sup> Another new method is virginity-sparing surgery which may be a better option for young ladies, especially in a conservative society as in Sudan.<sup>11,12</sup> Hysterectomy is considered a last option if the symptom-relieving methods have failed or on the patient's request.<sup>13</sup>

The patients also had a correction of the uterus position due to the displacement of the uterus. The etiology and consequences of this can be explained by the mass effect of the accumulated blood, which causes dilation and the elongation of the vagina that pushes the uterus. Further accumulation of blood may cause dilation of the cervix and then accumulation of blood inside the uterus cavity (hematometra).<sup>14</sup>

The surgical outcome was good, as the patient had immediate post-surgical pain relief. However, in such cases, long-term follow-up is more important, as complications and recurrence are not rare and were reported 3–6 months after management.<sup>6</sup>

The immediate surgical intervention in this case is important as the amount of blood may be huge as in a recent article reported the drainage of 3 L of blood.<sup>15</sup>

## 4 | CONCLUSION

This case report highlights the importance of considering hematocolpos in the differential list for patients presenting with amenorrhea following gynecological or pelvic surgery. However, the single nature of this Case report highlights the importance of more research to understand hematocolpos as a post-gynecological or pelvic surgery complication. Additionally, research investigating the risk factors for secondary hematocolpos is needed.

### AUTHOR CONTRIBUTIONS

**Tibyan Noorallah Mohammed:** Conceptualization; data curation; investigation; methodology; project administration; resources; software; writing – original

draft; writing – review and editing. **Ammar Elgadi:** Methodology; writing – original draft; writing – review and editing. **Gamal Mohi Eldeen Nuri:** Supervision; writing – review and editing.

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None.

### CONFLICT OF INTEREST STATEMENT

Authors declare no conflict of interest to be disclosed.

### DATA AVAILABILITY STATEMENT

Data sharing does not apply to this article as no new data were created or analyzed in this study.

### ETHICS STATEMENT

Ethical approval to report and publish this case was obtained from Atbara Teaching Hospital.

### CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

### ORCID

Ammar Elgadi  <https://orcid.org/0000-0003-1730-9023>

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