

Case Report Article

Chronic Postpartum Uterine Inversion Managed with the Haultain Procedure: A Case Report

Mira Zulyati Ahfa*, Ferry Yusrizal

Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Sriwijaya/Dr. Mohammad Hoesin General Hospital, Palembang, Sumatera Selatan, Indonesia

*Corresponding Author: mirazulyati@gmail.com

ABSTRACT

Chronic postpartum uterine inversion is an exceptionally rare obstetric complication, defined as uterine inversion persisting for four weeks or longer after delivery. It may present with abnormal uterine bleeding, severe anemia, and pelvic pain. A persistent cervical constriction ring can prevent manual reduction, necessitating surgical intervention. A 28-year-old woman (P2A0) was admitted on June 10, 2024, with bright-red vaginal bleeding for approximately three months and intermittent abdominal pain. Her second delivery was a term vaginal home birth in 2023, complicated by retained placenta for more than one hour, which was subsequently removed by traction. Abdominal massage was performed approximately 40 days postpartum. Physical examination revealed a non-palpable uterine fundus, a vaginal mass covered with endometrial mucosa, a non-visible portio, and a palpable constriction ring. Ultrasonography demonstrated an inverted uterine fundus within the vagina, with the cervix positioned superiorly. Laboratory investigations revealed severe hypochromic microcytic anemia, with a hemoglobin level of 2.4 g/dL, mean corpuscular volume of 53 fL, serum iron of 9 µg/dL, and albumin of 3.3 g/dL. Following transfusion of seven units of packed red blood cells, hemoglobin increased to 10.3 g/dL. Laparotomy was performed on June 26, 2024. Uterine reduction was successfully achieved using the Haultain procedure through a posterior vertical uterine incision, followed by blunt repositioning and repair with a baseball suture. Intraoperative blood loss was 400 mL. Postoperatively, vaginal bleeding ceased, and the patient was discharged on postoperative day three. Chronic postpartum uterine inversion should be considered in women presenting with persistent abnormal uterine bleeding, a vaginal mass, and a non-palpable uterine fundus. Ultrasonography is a valuable diagnostic adjunct. The Haultain procedure is an effective uterus-preserving option when a constriction ring prevents conservative reduction. Counseling regarding future pregnancy risks and delivery in an appropriately equipped healthcare facility is essential.

Keywords: Abnormal Uterine Bleeding; Chronic Uterine Inversion; Haultain Procedure; Postpartum Uterine Inversion; Uterine Preservation

1. INTRODUCTION

Uterine inversion is a condition in which the uterus turns inside out, so that the fundus is drawn through the cervix and may protrude into, or beyond, the vagina. It is most often discussed as a postpartum obstetric complication, but it can also occur in the non-gravid uterus as a result of intrauterine pathology such as leiomyoma, sarcoma, or endometrial malignancy (Herath et al., 2020; Thakur & Thakur, 2024). Puerperal inversion is classified according to the interval between delivery and diagnosis as acute (within 24 hours), subacute (between 24 hours and four weeks), or chronic (four weeks or longer) (Leal et al., 2014; Sunjaya & Dewi, 2018). Reported incidences vary widely, from approximately 1 in 2,000 to 1 in 50,000 births (Sunjaya & Dewi, 2018), with a large Canadian series documenting one case per 3,737 vaginal births (Baskett, 2002). Population-based data from the Netherlands and the United States confirm that the condition is rare yet associated with substantial hemorrhagic morbidity (Coad et al., 2017; Witteveen et al., 2013). Because of this rarity, and because symptoms in chronic cases may develop insidiously, diagnosis is frequently delayed (Kumari et al., 2022; Wahono et al., 2021).

Chronic inversions account for only a small fraction of puerperal cases; one frequently cited distribution reports 83.4% acute, 2.62% subacute, and 13.9% chronic presentations (Lal et al., 2025; Tolcha et al., 2023). In chronic inversion, the cervical constriction ring may persist and cause tissue edema and congestion. The longer the inversion remains uncorrected, the more difficult reduction becomes, and in neglected cases necrosis or other tissue changes may ensue (Kilpatrick et al., 2010; Thakur & Thakur, 2024). Clinical manifestations include abnormal uterine bleeding, pelvic pain or discomfort, vaginal discharge, and anemia (Herath et al., 2020; Widiyanti & Putra, 2022). A vaginal mass, an abdominally non-palpable fundus, and failure to identify the cervix on examination point toward the diagnosis, and ultrasonography is a valuable adjunct when the clinical picture is equivocal (Herath et al., 2020; Wendel et al., 2018).

Management aims to restore uterine anatomy, control bleeding, and treat systemic complications. Manual (vaginal) replacement is the first-line approach in acute cases (Hostetler & Bosworth, 2000; Wendel et al., 2018), whereas operative reduction is often required in chronic inversion because the constriction ring is fixed and the uterine wall has lost elasticity

(Ali & Kumar, 2016; Rudra et al., 2010). Several techniques have been described, including the Huntington, Haultain, Spinelli, and Kustner procedures, as well as laparoscopic variants (Abubeker et al., 2020; Kim et al., 2023; Widiyanti & Putra, 2022). The Haultain procedure uses a posterior longitudinal incision to divide the constriction ring so that the uterus can be repositioned, with the aim of preserving the uterus and future fertility (Haultain, 1908; Herath et al., 2020).

This report describes a woman of reproductive age with chronic postpartum uterine inversion who presented with vaginal bleeding and severe anemia and was successfully treated with uterine preservation using the Haultain procedure. The report was prepared with reference to the CARE (Case Report) guidelines (Gagnier et al., 2013).

2. CASE REPORT

2.1 Patient information

A 28-year-old Indonesian woman from Palembang was admitted to Dr. Mohammad Hoesin General Hospital, Palembang, on 10 June 2024 with a chief complaint of vaginal bleeding. A detailed history was obtained on 11 June 2024. She reported bright-red vaginal bleeding for approximately three months, requiring about two pad changes per day and accompanied by intermittent abdominal pain. She denied nausea, vomiting, abdominal enlargement, loss of appetite, bowel or urinary complaints, trauma, consumption of traditional herbal remedies (jamu), and vaginal discharge. Menarche had occurred at 16 years of age with regular seven-day cycles. During the preceding three months she recorded bleeding episodes beginning on 20 March, 21 April, and 20 May 2024, each lasting seven days and requiring two to four pad changes per day. She had been married once for ten years and had two term vaginal deliveries, both at home and attended by a midwife: a 2,500-g boy in 2014 and a 3,400-g girl in 2023; both children were healthy (P2A0). During the second delivery, the placenta failed to deliver for more than one hour and was subsequently extracted by traction applied by the midwife. She also reported having received abdominal massage (traditional *urut*) approximately 40 days after that delivery. There was no history of diabetes, asthma, hypertension, heart disease, allergy, or previous surgery, no current medication, and no relevant family history.

2.2 Clinical findings

On examination on 11 June 2024, she was fully conscious (Glasgow Coma Scale 15), with a blood pressure of 118/65 mmHg, regular pulse rate of 78 beats/min, respiratory rate of 20 breaths/min, oxygen saturation of 99% on room air, and temperature of 36.5°C. Her weight was 50 kg and height 165 cm (body mass index 18.4 kg/m², underweight). The conjunctivae were pale. Cardiopulmonary examination was unremarkable. The abdomen was flat and soft, the uterine fundus was not palpable, and there was no abdominal mass or free fluid. Dermatological examination of both inguinal and gluteal regions showed multiple irregular hyperpigmented plaques with hypopigmented macules, which were diagnosed by the dermatology team as *tinea cruris*. Speculum examination revealed a mass with the appearance of endometrial mucosa; the portio could not be visualized, and there was no active bleeding at the time of examination (Figure 1). On digital vaginal examination, a mass filling the vaginal introitus was palpated and was suspected to be the inverted uterine fundus; a constriction ring was palpable.

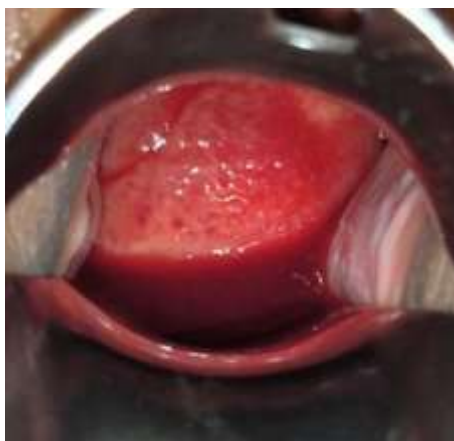


Figure 1. Speculum examination showing a reddish mass with an endometrial mucosal surface occupying the vagina; the portio is not visible.

2.3 Diagnostic assessment

Laboratory studies on 11 June 2024 revealed severe hypochromic microcytic anemia (hemoglobin 2.4 g/dL, hematocrit 10%, MCV 53 fL, MCH 13 pg, MCHC 24 g/dL) with an elevated red-cell distribution width (RDW-CV 23.9%). Serum iron was markedly low (9 µg/dL), serum ferritin was 4.80 ng/mL, and total iron-binding capacity was 328 µg/dL. Leukocyte and platelet counts were within normal limits, serum albumin was 3.3 g/dL, and the activated partial thromboplastin time was slightly shortened (24.2 s). Serial laboratory results are summarized in [Table 1](#).

Table 1. Serial laboratory findings

Parameter	Reference range	11 Jun 2024 (admission)	13 Jun 2024	15 Jun 2024 (preop.)	24 Jun 2024	27 Jun 2024 (POD 1)
Hemoglobin (g/dL)	12.0–14.4	2.4	7.0	10.3	9.8	10.3
Hematocrit (%)	41–51	10	23	33	31	32
Erythrocytes ($\times 10^6/\text{mm}^3$)	4.75–4.85	1.88	3.3	4.63	4.25	4.31
MCV (fL)	85–95	53	—	—	73.4	74.2
MCH (pg)	28–32	13	—	—	23	24
MCHC (g/dL)	33–35	24	—	—	31	32
RDW-CV (%)	—	23.9	—	—	29	26.8
Leukocytes ($\times 10^3/\text{mm}^3$)	4.5–13.5	8.27	20.0	9.07	8.84	13.74
Differential (B/E/N/L/M, %)	0–1/1–6/50–70/20–40/2–8	0/1/62/30/7	—	—	0/2/63/26/9	0/0/93/4/3
Platelets ($\times 10^3/\mu\text{L}$)	217–497	283	264	257	439	450
Serum ferritin (ng/mL)	4.63–204.00	4.80	—	—	—	—
Serum iron ($\mu\text{g/dL}$)	61–157	9	—	—	—	—
TIBC ($\mu\text{g/dL}$)	112–346	328	—	—	—	—
Transferrin saturation (%)*	—	≈ 2.7	—	—	—	—
PT (s) / INR	12–18 / —	14.4 / 1.05	—	—	— / 0.99	—
APTT (s)	27–42	24.2	—	—	26	—
Albumin (g/dL)	3.4–5.4	3.3	—	—	4.0	Pending
Urea (mg/dL)	16.6–48.5	12	—	—	12	—
Creatinine (mg/dL)	—	—	—	—	0.54	—
ALT / AST (U/L)	0–31 / 0–32	10 / 27	—	—	20 / pending	—
Na / K / Cl (mmol/L)	135–145 / 3.5–5.5 / 98–106	141 / 3.6 / 108	—	—	144 / 4.0 / 112	—
Random glucose (mg/dL)	<200	82	—	—	—	—

Reference ranges are those of the hospital laboratory. MCV = mean corpuscular volume; MCH = mean corpuscular hemoglobin; MCHC = mean corpuscular hemoglobin concentration; RDW-CV = red-cell distribution width (coefficient of variation); B/E/N/L/M = basophils/eosinophils/neutrophils/lymphocytes/monocytes; TIBC = total iron-binding capacity; PT = prothrombin time; INR = international normalized ratio; APTT = activated partial thromboplastin time; POD = postoperative day; — = not measured. *Calculated as serum iron/TIBC $\times 100$. Screening for HIV, syphilis, and hepatitis B (triple elimination) on 24 June 2024 was non-reactive.

Emergency ultrasonography on 10 June 2024 showed no uterine fundus in its normal position and no endometrial line, with the uterus appearing to descend into the vaginal canal, suggestive of uterine inversion; both ovaries, the liver, spleen, and both kidneys were normal, and there was no ascites (**Figure 2**). Confirmatory ultrasonography on 11 June 2024 demonstrated the inverted fundus lying within the vagina, with the cervix positioned superior to the fundus; both ovaries and the upper abdominal organs were normal (**Figure 3**). Repeat speculum examination again showed a round, reddish vaginal mass without a visible portio, with a ring (annulus) of cervical origin posterior to the mass. The examination was concluded to represent uterine inversion.



Figure 2. Emergency transabdominal ultrasonography (10 June 2024). (A) Bladder (VU) and cervix (Cx) with no uterine fundus in its normal position. (B, C) The uterus appears to descend into the vaginal canal, with no fundus or endometrial line identified, suggestive of uterine inversion.

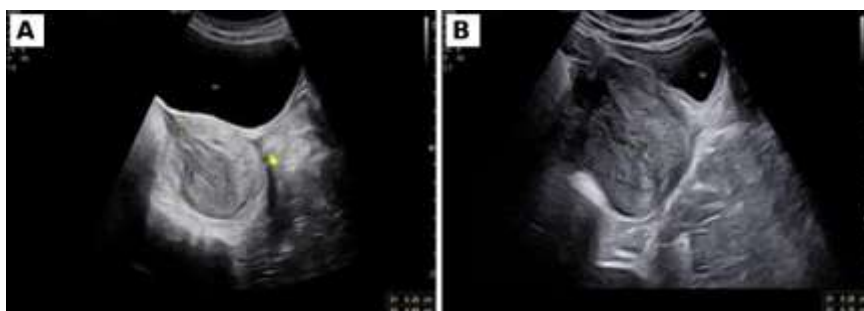


Figure 3. Confirmatory ultrasonography (11 June 2024). (A, B) The inverted uterine fundus lies within the vagina, with the cervix positioned superior to the fundus.

The working diagnosis was uterine inversion with severe hypochromic microcytic anemia, hypoalbuminemia, and tinea cruris. Given the delivery in 2023 and the duration of symptoms, the inversion was classified as chronic.

2.4 Therapeutic intervention

The patient was counseled and monitored for vital signs, general condition, and bleeding. She received intravenous Ringer's lactate (500 mL at 20 drops/min), intravenous tranexamic acid 500 mg every 8 hours, an oral albumin supplement (one tablet every 8 hours), and staged transfusion of packed red cells with a target hemoglobin above 10 g/dL. The tinea cruris was treated with topical ketoconazole 2% cream every 12 hours for four weeks and oral cetirizine 10 mg daily as needed for pruritus. Laparotomy with the Haultain procedure was planned after improvement of her general condition. On 13 June 2024, after four units, hemoglobin had risen to 7.0 g/dL, and leukocytosis (20,000/mm³) was noted without fever; oral cefadroxil 500 mg every 12 hours and metronidazole 500 mg every 8 hours were started on 14 June. By 15 June 2024, after completion of the seventh unit, hemoglobin was 10.3 g/dL and the leukocyte count had normalized (9,070/mm³); vaginal bleeding had decreased, and she was discharged for outpatient care with elective surgery scheduled for 26 June 2024. At the gynecology outpatient clinic on 24 June 2024, she still reported vaginal bleeding; she was hemodynamically stable (118/65 mmHg, 78 beats/min) with pale conjunctivae, and the gynecological findings were unchanged. Hemoglobin was 9.8 g/dL and albumin 4.0 g/dL. On 26 June 2024, preoperative vital signs were 107/67 mmHg, 82 beats/min, and 36.2°C. The sequence of events is summarized in [Table 2](#).

Table 2. Timeline of the clinical course

Date / interval	Event
2014	First term vaginal delivery at home, attended by a midwife (boy, 2,500 g).
2023	Second term vaginal delivery at home, attended by a midwife (girl, 3,400 g); placenta retained for >1 hour and delivered by traction.
≈ 40 days postpartum	Abdominal massage (traditional <i>urut</i>).
≈ 3 months before admission	Bright-red vaginal bleeding (≈ two pads/day) with intermittent abdominal pain; recorded bleeding episodes beginning 20 March, 21 April, and 20 May 2024.
10 June 2024	Admission; emergency ultrasonography suggestive of uterine inversion.
11 June 2024	History and examination: non-palpable fundus, introital mass with constriction ring; hemoglobin 2.4 g/dL; confirmatory ultrasonography; dermatology consultation (tinea cruris); transfusion started.
11–15 June 2024	Intravenous fluids, tranexamic acid, oral albumin supplement; staged transfusion of seven units of packed red cells.
13–14 June 2024	Hemoglobin 7.0 g/dL; leukocytes 20,000/mm ³ ; oral cefadroxil and metronidazole started.
15 June 2024	Hemoglobin 10.3 g/dL; leukocytes 9,070/mm ³ ; discharged with elective surgery scheduled.
24 June 2024	Outpatient review: persistent bleeding; hemoglobin 9.8 g/dL; albumin 4.0 g/dL; triple-elimination screening non-reactive.
26 June 2024	Pfannenstiel laparotomy under general anesthesia (16:45–18:15); reduction by the Haultain procedure; blood loss 400 mL.
27–29 June 2024	Postoperative days 1–3: stable, no vaginal bleeding; hemoglobin 10.3 g/dL on day 1; discharged on day 3 for outpatient follow-up.

Intervals preceded by ≈ are approximate, as reported by the patient.

2.5 Operative procedure

On 26 June 2024, the operation began at 16:45. With the patient supine under general anesthesia, a Pfannenstiel incision was made two fingerbreadths above the symphysis pubis and deepened sharply and bluntly into the peritoneal cavity. Exploration revealed an inverted uterus; the fundus could not be identified because it had been drawn into the cervix and vagina and was trapped within the vagina. Both ovaries were normal, while both fallopian tubes were pulled into the cervix ([Figure 4A, B](#)). Reduction was performed using the Haultain procedure. A vertical incision was made on the posterior aspect of the uterine corpus; once the incision had passed through to the endometrium, the uterus was repositioned by blunt manipulation ([Figure 4C](#)). The uterine incision was then repaired with a baseball suture ([Figure 4D](#)). Re-exploration confirmed the absence of bleeding, and the abdominal cavity was irrigated with 0.9% sodium chloride. The abdominal wall was closed in layers: peritoneum and muscle with continuous plain 2-0 sutures, fascia with continuous polyglycolic acid (PGA) 1, subcutaneous tissue with interrupted and continuous plain 2-0, and skin with a continuous subcuticular PGA 3-0 suture, and the wound was covered with a transparent film dressing. All tissue obtained was submitted for histopathological examination. The operation ended at 18:15. Intraoperative fluids comprised 500 mL of Ringer's lactate and 200 mL of blood; blood loss was 400 mL and urine output 200 mL.

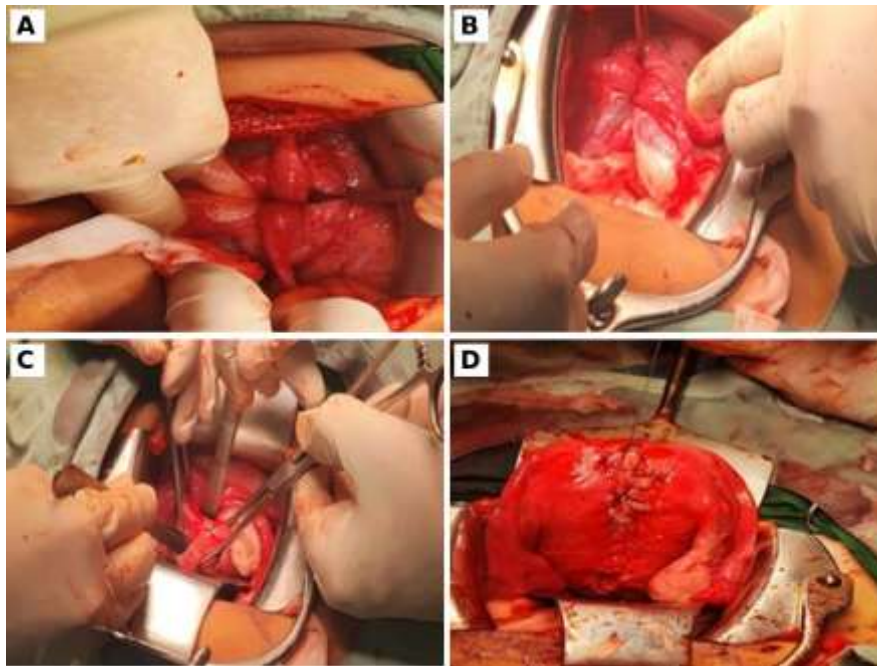


Figure 4. Intraoperative findings and Haultain procedure (26 June 2024). (A, B) Inverted uterus at laparotomy: the fundus is not identifiable, having been drawn into the cervix and vagina, with the adnexa pulled toward the cervical ring. (C) Posterior vertical incision of the uterine corpus and blunt reduction. (D) Uterus restored to its normal position after repair of the posterior incision with a baseball suture.

2.6 Follow-up and outcomes

On postoperative day 1 (27 June 2024), the patient reported incisional pain without vaginal bleeding; blood pressure was 107/67 mmHg, pulse rate 82 beats/min, respiratory rate 18 breaths/min, and temperature 36.2°C. The wound was dry. Postoperative hemoglobin was 10.3 g/dL with an MCV of 74.2 fL, and the leukocyte count was 13,740/mm³ with 93% neutrophils. She received intravenous ceftriaxone 1 g every 12 hours, tranexamic acid 500 mg every 8 hours, and ketorolac 30 mg every 8 hours, with gradual mobilization and removal of the urinary catheter after 24 hours. On day 2, pain had decreased (117/74 mmHg; 98 beats/min) and there was still no vaginal bleeding. On day 3 (29 June 2024), her general condition was good (117/74 mmHg; 84 beats/min; 36.2°C), there was no active bleeding, and she was discharged for outpatient follow-up on oral cefadroxil 500 mg every 12 hours, metronidazole 500 mg every 8 hours, mefenamic acid 500 mg every 8 hours, and a vitamin B complex supplement once daily. The prognosis was judged favorable (*dubia ad bonam*) for life, function, and recovery.

3. DISCUSSION

3.1 Diagnosis of chronic uterine inversion

This case exhibited clinical features supporting a diagnosis of chronic uterine inversion. The index delivery had occurred in 2023 and vaginal bleeding had persisted for approximately three months, so that the temporal criterion for chronicity used in the case-report literature inversion persisting four weeks or longer was clearly met (Leal et al., 2014; Sunjaya & Dewi, 2018). The intraoperative finding of a fundus that had passed through the cervical ring and was trapped within the vagina indicates a complete inversion. Equally important were the absence of an abdominally palpable fundus and the presence of a mass filling the vaginal introitus, findings regarded as key clinical clues to uterine inversion (Hostetler & Bosworth, 2000; Wendel et al., 2018). The non-visualized portio, the endometrium-like surface of the mass, and the palpable ring encircling it further narrowed the differential diagnosis, which in this setting includes a prolapsed submucous leiomyoma, a large endometrial polyp, and, less commonly, a malignant uterine tumor (Ali & Kumar, 2016; Herath et al., 2020). Because chronic inversion may present with comparatively subtle symptoms, it can be mistaken for these conditions, and several published patients with chronic puerperal inversion were initially managed for abnormal uterine bleeding before the correct diagnosis was established (Garg & Bansal, 2020; Tolcha et al., 2023). In our patient, the bleeding episodes recorded at roughly monthly intervals (20 March, 21 April, and 20 May 2024) may have been perceived as heavy menstruation, which could have contributed to the delay in seeking care.

The history of a placenta retained for more than one hour and delivered by traction at the second birth is a factor that may plausibly be related to the development of inversion. Recognized contributing factors include excessive umbilical cord traction, fundal placental implantation, invasive placentation, manual removal of the placenta, uterine atony, a short umbilical cord, precipitate labor, and uterine anomalies (Thakur & Thakur, 2024; Wendel et al., 2018; Widiyanti & Putra, 2022). Retained placenta, which complicates around 1–3% of vaginal deliveries, shares several risk factors with uterine

atony and abnormal placentation, and its correct management entails manual removal under adequate analgesia rather than forceful traction (Perlman & Carusi, 2019). Several reports have emphasized that cord traction applied before signs of placental separation, particularly in home or unsupervised births, is a recurrent antecedent of inversion (Kaur & Singh, 2022; Marlina et al., 2024). Indonesian and other low-resource settings have documented similar cases following deliveries outside hospital (Garg & Bansal, 2020; Wahono et al., 2021). Nevertheless, more than half of all cases may occur without an identifiable risk factor (Thakur & Thakur, 2024; Widiyanti & Putra, 2022). In the present case, an adherent placenta, the need for placental extraction, and suboptimal third-stage management could not be excluded, but a causal relationship cannot be established with certainty. Whether the abdominal massage performed approximately 40 days postpartum contributed to the inversion, or merely coincided with an incomplete inversion that had gone unrecognized since delivery, likewise cannot be determined.

Ultrasonography provided additional confirmation in this case. The absence of the fundus and endometrial line from their normal location and the descent of the uterus into the vaginal canal pointed to the diagnosis, and the confirmatory examination demonstrated the inverted fundus within the vagina with the cervix lying superior to it. This accords with the principle that imaging is helpful in rare chronic inversions when the clinical diagnosis is uncertain (Herath et al., 2020; Thakur & Thakur, 2024). Characteristic sonographic appearances include a “Y”-shaped uterine cavity on longitudinal views in incomplete inversion, and magnetic resonance imaging may show a “U”-shaped cavity with a thickened, inverted fundus; these modalities are particularly useful for excluding an associated uterine mass (Abubeker et al., 2020; Herath et al., 2020). In our patient, the ovaries were normal and no tumor was identified on imaging or at laparotomy, supporting a puerperal rather than a tumor-associated etiology.

3.2 Anemia and systemic optimization

The patient presented with a hemoglobin concentration of 2.4 g/dL, microcytic hypochromic red-cell indices, an elevated RDW, and a serum iron of 9 µg/dL, giving a calculated transferrin saturation of approximately 2.7%. Although her ferritin of 4.80 ng/mL lay just above the lower limit of the local laboratory reference range, it is well below the threshold conventionally used to define depleted iron stores; together with the very low transferrin saturation, this profile indicates severe iron-deficiency anemia, clinically explained by chronic vaginal blood loss (Camaschella, 2015). Remarkably, she remained hemodynamically stable (118/65 mmHg; 78 beats/min), reflecting physiological adaptation to slowly developing blood loss. A comparable presentation a hemoglobin of 3.9 g/dL in a 28-year-old woman with chronic puerperal inversion seven years after a home delivery has been described, underscoring that severe anemia may be the dominant manifestation of a long-standing inversion (Tolcha et al., 2023).

Correction of anemia is an essential part of preparation for definitive surgery. Current international guidance recommends a restrictive threshold of 7 g/dL for transfusion in hemodynamically stable hospitalized adults, while emphasizing that the overall clinical context should guide individual decisions (Carson et al., 2023). Given a starting hemoglobin of 2.4 g/dL, ongoing bleeding, and an impending major operation, transfusion was clearly indicated. Packed red cells were administered in stages, raising hemoglobin to 7.0 g/dL after four units and 10.3 g/dL after seven units; staged transfusion also limits the risk of circulatory overload in chronic, compensated anemia. The subsequent fall to 9.8 g/dL by 24 June, while bleeding persisted, illustrates that transfusion can only temporize and that definitive reduction is required to stop the bleeding. Tranexamic acid was used as an adjunct; its efficacy is best established in postpartum hemorrhage, where early administration reduces death due to bleeding (WOMAN Trial Collaborators, 2017), and its use in chronic inversion represents a reasonable extrapolation. The rise in MCV from 53 to 74.2 fL largely reflects the admixture of transfused normocytic red cells; iron supplementation was not recorded during the inpatient period, and iron repletion during follow-up is advisable to restore depleted stores (Camaschella, 2015).

Other systemic issues were also addressed before surgery. Hypoalbuminemia (3.3 g/dL) in an underweight patient (body mass index 18.4 kg/m²) was managed with oral supplementation, and albumin had normalized to 4.0 g/dL by 24 June, favoring wound healing. A transient leukocytosis of 20,000/mm³ without fever on 13 June was treated empirically with oral antibiotics and resolved within two days; a chronically exposed, everted endometrium is susceptible to infection, and infection should be actively sought in chronic inversion (Kilpatrick et al., 2010). The slightly shortened APTT was of uncertain clinical significance and normalized on repeat testing.

3.3 Rationale for selecting the Haultain procedure

In chronic inversion, the constriction ring may persist and prevent manual reduction. The choice of operative technique depends on the degree and duration of inversion, pelvic anatomy, tissue condition, the surgeon's experience, and the goal of uterine preservation (Abubeker et al., 2020; Herath et al., 2020; Widiyanti & Putra, 2022). The principal abdominal and vaginal techniques are summarized in Table 3. The Huntington procedure applies progressive traction to the structures drawn into the inversion cup without incising the uterus, whereas the Haultain procedure adds a posterior longitudinal incision to release the constriction ring before reduction (Haultain, 1908; Hostetler & Bosworth, 2000). In a review of non-puerperal cases, the Haultain procedure was among the techniques most frequently reported to achieve successful repositioning (Herath et al., 2020), and it has been the method used in most published reports of chronic puerperal inversion (Table 4).

Table 3. Surgical techniques described for reduction of uterine inversion

Technique	Approach	Principle	Main considerations
Huntington	Abdominal	Serial clamps (e.g., Allis) placed on the inversion cup or round ligaments, with progressive upward traction until the fundus is restored.	No uterine incision; often unsuccessful when a dense, fixed constriction ring is present.
Haultain	Abdominal	Longitudinal incision of the posterior uterine wall through the constriction ring, followed by reduction and layered repair.	Effective in chronic cases; posterior incision avoids the bladder; leaves a myometrial scar.
Kustner	Vaginal	Posterior colpotomy with incision of the posterior cervix and uterine wall, reduction, and repair.	Avoids laparotomy; limited visualization of adnexa and ureters.
Spinelli	Vaginal	Anterior incision of the cervix and constriction ring after bladder dissection, reduction, and repair.	Avoids laparotomy; risk of bladder injury.
Laparoscopic / combined	Laparoscopic ± vaginal	Laparoscopic visualization with traction (Huntington-type) or posterior incision (Haultain-type), sometimes combined with vaginal manipulation.	Minimally invasive; requires expertise; experience mostly from case reports.

Compiled from Haultain (1908), Hostetler and Bosworth (2000), Herath et al. (2020), Abubeker et al. (2020), Widiyanti and Putra (2022), and Kim et al. (2023).

In the present case, the uterus had been inverted for a prolonged period and a constriction ring was palpable. These considerations favored an abdominal approach using the Haultain procedure once the patient's general condition had been optimized. Vaginal approaches were not chosen because of the risk of extending the incision toward the bladder, ureters, and adjacent large vessels, and because incision of the cervix carries a potential risk of cervical incompetence in a subsequent pregnancy (Widiyanti & Putra, 2022). The abdominal route provided direct visualization of the intra-abdominal anatomy here confirming the characteristic findings of an unidentifiable fundus with both tubes drawn into the cervix and allowed the constriction ring to be released through a posterior incision while preserving the uterus. It also permits assessment of the ovaries, identification of the ureters when anatomy is distorted, and immediate management of bleeding (Kilpatrick et al., 2010).

The technique used in our patient comprised a vertical incision of the posterior uterine corpus, blunt reduction, and repair with a baseball suture. A recognized advantage of the posterior approach is the reduced risk of injury to the bladder, which may be drawn down together with the anterior wall of the inverted uterus; moreover, the incision remains in clear view, so that any extension caused by traction on the congested fundus can be readily repaired (Widiyanti & Putra, 2022). Uterine atony after reduction is a further recognized hazard: in two reported Haultain cases from Indonesia and India, persistent atony necessitated subtotal hysterectomy (Lal et al., 2025; Wahono et al., 2021). No such complication occurred in our patient, whose re-exploration showed no bleeding and whose total blood loss was 400 mL. However, because the Haultain procedure involves a myometrial incision, patients who retain reproductive potential require counseling about future pregnancies, including the possible risk of uterine rupture, which is theoretically comparable to that after a vertical hysterotomy but cannot yet be quantified owing to limited data (Tolcha et al., 2023; Widiyanti & Putra, 2022).

Table 4. Selected published cases of chronic puerperal uterine inversion managed with the Haultain procedure, compared with the present case

Report	Age (y)	Interval from delivery	Key presentation	Management and outcome
Rudra et al. (2010)	–	≈ 1.5 years	Chronic inversion after mismanaged labor	Haultain procedure; uterus preserved.
Birge et al. (2015)	17	Within first postpartum year	Fragile bleeding mass filling the vagina; tight cervical ring	Haultain procedure; normal menses at 1-month follow-up.
Ali & Kumar (2016)	–	6 months	Painless vaginal mass	Laparotomy with Haultain procedure; uterus preserved.
Garg & Bansal (2020)	22	8 months	Home delivery by untrained attendant; globular mass with tight constriction ring	Haultain procedure; uterus preserved.
Tolcha et al. (2023)	28	7 years	AUB, secondary infertility, Hb 3.9 g/dL	Transfusion, then Haultain; later spontaneous conception and delivery.
Present case	28	Delivery in 2023; bleeding for ≈ 3 months	AUB, abdominal pain, introital mass with constriction ring, Hb 2.4 g/dL	Seven units PRC preoperatively, then Haultain (blood loss 400 mL); bleeding ceased, uterus preserved.

AUB = abnormal uterine bleeding; Hb = hemoglobin; PRC = packed red cells; – = not specified in the summary used here.

3.4 Prognosis and reproductive considerations

Following reduction, the patient showed clinical improvement, with cessation of vaginal bleeding and a postoperative hemoglobin of 10.3 g/dL. The literature indicates that fertility can be preserved after surgical correction of uterine inversion (Kaur & Singh, 2022), and successful conception and delivery after the Haultain procedure for chronic puerperal inversion have been documented (Tolcha et al., 2023). Nevertheless, the risk of recurrence in subsequent pregnancies cannot be stated with certainty. Patients should therefore be counseled that recurrence is possible and that future pregnancies should be monitored and delivered in a hospital capable of managing obstetric complications, with active and careful management of the third stage of labor (Kaur & Singh, 2022; Witteveen et al., 2013). Because a vertical myometrial incision has been made, several authors recommend delaying conception for at least 12 months and planning delivery by cesarean section to reduce the risks of uterine rupture and re-inversion (Tolcha et al., 2023). Contraceptive choice should be made through individualized counseling that considers reproductive intentions, effectiveness, safety, acceptability, and access. Because the uterus was successfully preserved, all contraceptive options remain available, and the choice need not be determined solely by the history of inversion. The intrauterine device was considered a suitable long-acting reversible option for this patient, as none of its contraindications were identified. A suitable interval of effective contraception before the next pregnancy is advisable in light of the uterine scar (Tolcha et al., 2023). The final decision should be reached after shared discussion with the patient about her fertility plans and the postoperative condition of the uterus.

3.5 Lessons for practice and limitations

This case highlights several practical lessons. First, an unrecognized or incompletely corrected inversion at delivery can evolve into a chronic inversion that presents months later as abnormal uterine bleeding and severe anemia; any postpartum woman with persistent bleeding and a vaginal mass should undergo careful abdominal and bimanual examination to locate the fundus. Second, safe third-stage management avoiding cord traction before placental separation and referring cases of retained placenta for manual removal under analgesia remains the most important preventive measure, particularly where home births are common (Kaur & Singh, 2022; Marlina et al., 2024; Perlman & Carusi, 2019). Third, thorough preoperative optimization of anemia and nutritional status allows definitive surgery to be performed safely even in patients with extremely low initial hemoglobin. The main limitations of this report are its single-patient design, the short postoperative follow-up (to postoperative day 3), and the unavailability of the histopathological result at the time of writing; long-term outcomes, including menstrual pattern, fertility, and the course of any subsequent pregnancy, remain to be documented.

4. CONCLUSION

Chronic postpartum uterine inversion is a rare condition that may present with non-specific symptoms of chronic vaginal bleeding and anemia. In this patient, a non-palpable fundus on abdominal examination, a mass filling the vaginal introitus with a constriction ring, and supportive ultrasonographic findings established the diagnosis of chronic uterine inversion. Severe iron-deficiency anemia was first corrected with seven units of packed red cells before definitive treatment. Laparotomy with the Haultain procedure successfully reduced the inversion and preserved the reproductive organs, and the early postoperative course was stable without vaginal bleeding. Counseling on the risks of future pregnancy and the importance of delivery in a referral hospital should form part of follow-up.

ACKNOWLEDGMENTS

The authors thank the Department of Dermatology and Venereology for the management of tinea cruris and the fetomaternal ultrasonography team for the confirmatory examination.

REFERENCES

- Abubeker, F. A., Misgina, M., Ebabu, A., Fekade, E., & Gashawbeza, B. (2020). Management of nonpuerperal uterine inversion using a combined vaginal and abdominal approach. *Case Reports in Obstetrics and Gynecology*, 2020, Article 8827207. <https://doi.org/10.1155/2020/8827207>
- Ali, E., & Kumar, M. (2016). Chronic uterine inversion presenting as a painless vaginal mass at 6 months post partum: A case report. *Journal of Clinical and Diagnostic Research*, 10(5), QD07–QD08. <https://doi.org/10.7860/JCDR/2016/18754.7856>
- Baskett, T. F. (2002). Acute uterine inversion: A review of 40 cases. *Journal of Obstetrics and Gynaecology Canada*, 24(12), 953–956. [https://doi.org/10.1016/S1701-2163\(16\)30594-1](https://doi.org/10.1016/S1701-2163(16)30594-1)
- Birge, O., Tekin, B., Merdin, A., Coban, O., & Arslan, D. (2015). Chronic total uterine inversion in a young adult patient. *American Journal of Case Reports*, 16, 756–759. <https://doi.org/10.12659/AJCR.894264>
- Camaschella, C. (2015). Iron-deficiency anemia. *New England Journal of Medicine*, 372(19), 1832–1843. <https://doi.org/10.1056/NEJMra1401038>
- Carson, J. L., Stanworth, S. J., Guyatt, G., Valentine, S., Dennis, J., Bakhtary, S., Cohn, C. S., Dubon, A., Grossman, B. J., Gupta, G. K., Hess, A. S., Jacobson, J. L., Kaplan, L. J., Lin, Y., Metcalf, R. A., Murphy, C. H., Pavenski, K., Prochaska,

- M. T., Raval, J. S., ... Pagano, M. B. (2023). Red blood cell transfusion: 2023 AABB international guidelines. *JAMA*, 330(19), 1892–1902. <https://doi.org/10.1001/jama.2023.12914>
- Coad, S. L., Dahlgren, L. S., & Hutcheon, J. A. (2017). Risks and consequences of puerperal uterine inversion in the United States, 2004 through 2013. *American Journal of Obstetrics and Gynecology*, 217(3), 377.e1–377.e6. <https://doi.org/10.1016/j.ajog.2017.05.018>
- Gagnier, J. J., Kienle, G., Altman, D. G., Moher, D., Sox, H., Riley, D., & the CARE Group. (2013). The CARE guidelines: Consensus-based clinical case reporting guideline development. *Global Advances in Health and Medicine*, 2(5), 38–43. <https://doi.org/10.7453/gahmj.2013.008>
- Garg, P., & Bansal, R. (2020). Unusual and delayed presentation of chronic uterine inversion in a young woman as a result of negligence by an untrained birth attendant: A case report. *Journal of Medical Case Reports*, 14, Article 143. <https://doi.org/10.1186/s13256-020-02466-x>
- Haultain, F. W. N. (1908). Abdominal hysterotomy for chronic uterine inversion: A record of three cases. *Proceedings of the Royal Society of Medicine*, 1(Obstet Gynaecol Sect), 279–290. <https://doi.org/10.1177/003591570800100771>
- Herath, R. P., Patabendige, M., Rashid, M., & Wijesinghe, P. S. (2020). Nonpuerperal uterine inversion: What the gynaecologists need to know? *Obstetrics and Gynecology International*, 2020, Article 8625186. <https://doi.org/10.1155/2020/8625186>
- Hostetler, D. R., & Bosworth, M. F. (2000). Uterine inversion: A life-threatening obstetric emergency. *Journal of the American Board of Family Practice*, 13(2), 120–123. <https://doi.org/10.3122/15572625-13-2-120>
- Kaur, A., & Singh, B. (2022). Acute uterine inversion – A complication revisited; a case series and review of literature. *Case Reports in Perinatal Medicine*, 11(1), Article 20200081. <https://doi.org/10.1515/crpm-2020-0081>
- Kilpatrick, C. C., Chohan, L., & Maier, R. C. (2010). Chronic nonpuerperal uterine inversion and necrosis: A case report. *Journal of Medical Case Reports*, 4, Article 381. <https://doi.org/10.1186/1752-1947-4-381>
- Kim, S., Lee, S., & Song, J.-Y. (2023). A rare case report of successful laparoscopy-guided reduction of non-puerperal uterine inversion. *Medicina*, 59(4), Article 793. <https://doi.org/10.3390/medicina59040793>
- Kumari, S., Singh, V., Ray, A., & Swain, A. (2022). Post-partum complete acute uterine inversion: A coordinated multi-disciplinary approach ameliorates an obstetric nightmare, a case report. *Journal of Family Medicine and Primary Care*, 11(2), 793–795. https://doi.org/10.4103/jfmpc.jfmpc_1164_21
- Lal, P., Nanda, S. R., & Samant, M. (2025). A neglected case of subacute complete uterine inversion managed by Haultain's technique: A rare case. *Cureus*, 17(3), Article e80296. <https://doi.org/10.7759/cureus.80296>
- Leal, R. F. M., Luz, R. M., de Almeida, J. P., Duarte, V., & Matos, I. (2014). Total and acute uterine inversion after delivery: A case report. *Journal of Medical Case Reports*, 8, Article 347. <https://doi.org/10.1186/1752-1947-8-347>
- Marlina, D., Susandi, D., & Utomo, A. (2024). Uterine inversion in retained placenta, that's why a good management of third stage of labor matters: A case report. *SAGE Open Medical Case Reports*, 12. <https://doi.org/10.1177/2050313X241266582>
- Perlman, N. C., & Carusi, D. A. (2019). Retained placenta after vaginal delivery: Risk factors and management. *International Journal of Women's Health*, 11, 527–534. <https://doi.org/10.2147/IJWH.S218933>
- Rudra, S., Naredi, N., Duggal, B. S., & Seth, A. (2010). Chronic uterine inversion: A rare complication of mismanaged labour. *Medical Journal Armed Forces India*, 66(1), 91–92. [https://doi.org/10.1016/S0377-1237\(10\)80113-3](https://doi.org/10.1016/S0377-1237(10)80113-3)
- Sunjaya, A. P., & Dewi, A. K. (2018). Total uterine inversion post partum: Case report and management strategies. *Journal of Family & Reproductive Health*, 12(4), 223–225. <https://pubmed.ncbi.nlm.nih.gov/articles/PMC6581659/>
- Thakur, M., & Thakur, A. (2024). Uterine inversion. In *StatPearls*. StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK525971/>
- Tolcha, F. D., Dale, T. B., & Anbessie, T. T. (2023). Chronic uterine inversion presenting with severe anemia 7 years after a home delivery and the subsequent successful pregnancy: A case report. *Journal of Medical Case Reports*, 17, Article 278. <https://doi.org/10.1186/s13256-023-04012-x>
- Wahono, W. T., Putri, A., Saroyo, Y. B., Nugroho, A. J., Sally, R., Simanjuntak, S. P., & Samuel. (2021). A case of third degree hemorrhagic shock due to total subacute uterine inversion after delivery. *Medical Journal of Indonesia*, 30(1), 71–74. <https://doi.org/10.13181/mji.cr.203862>
- Wendel, M. P., Shnaekel, K. L., & Magann, E. F. (2018). Uterine inversion: A review of a life-threatening obstetrical emergency. *Obstetrical & Gynecological Survey*, 73(7), 411–417. <https://doi.org/10.1097/OGX.0000000000000580>
- Widiyanti, E. S., & Putra, I. G. M. (2022). Penanganan inversio uteri: Sebuah tinjauan pustaka [Management of uterine inversion: A literature review]. *Intisari Sains Medis*, 13(1), 136–142. <https://doi.org/10.15562/ism.v13i1.1262>

- Witteveen, T., van Stralen, G., Zwart, J., & van Roosmalen, J. (2013). Puerperal uterine inversion in the Netherlands: A nationwide cohort study. *Acta Obstetrica et Gynecologica Scandinavica*, 92(3), 334–337. <https://doi.org/10.1111/j.1600-0412.2012.01514.x>
- WOMAN Trial Collaborators. (2017). Effect of early tranexamic acid administration on mortality, hysterectomy, and other morbidities in women with post-partum haemorrhage (WOMAN): An international, randomised, double-blind, placebo-controlled trial. *The Lancet*, 389(10084), 2105–2116. [https://doi.org/10.1016/S0140-6736\(17\)30638-4](https://doi.org/10.1016/S0140-6736(17)30638-4)