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Giant vulvovaginal hematoma and postpartum surgical management

Hematoma vulvovaginal gigante y manejo quirúrgico posparto

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Abstract

A 31-year-old female patient, from Guayas and resident in Durán Eloy Alfaro, who was in her second pregnancy of 40.3 weeks, was admitted for mild contractile pain radiating to the lumbar region with three days of evolution. At 10 hours postpartum, she presented dizziness, paleness and tachycardia (BP 110/60 mmHg, HR 114 bpm, RR 20 rpm, SpO_2 99 %, Temp 36.6° C). Physical examination revealed a giant vulvovaginal hematoma. The patient reported a similar history in her previous delivery. She was transferred to the obstetric center for surgical resolution. Episiotomy stitches were removed and the hematoma was drained, evacuating approximately 1000 cm^3 of clots. Subsequently, the vaginal cavity was explored, identifying bleeding vessels that were ligated with rigorous hemostasis. Raffia and repair of the pelvic floor were performed using chrome suture 0. The patient evolved favorably after the intervention. Timely diagnosis of puerperal hematomas is essential, as they can cause occult bleeding and compromise maternal hemodynamic stability. Although many postpartum hematomas are small and self-limiting, the incidence of vulvar hematomas or underlevants can reach up to 50 % of parturient after vaginal delivery. Large and dissecting bruises, such as the one described, generate uncontrolled bleeding and increase maternal morbidity. Treatment depends on size, clinical stability, and available resources; When the hematoma progresses or compromises maternal vitality, surgical evacuation with hemostasis and tissue repair is mandatory, and may be complemented with arterial embolization in specialized centers.

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Resumen

Paciente femenina de 31 años, procedente del Guayas y residente en Durán Eloy Alfaro, cursando su segundo embarazo de 40.3 semanas, ingresó por dolor tipo contráctil leve irradiado a región lumbar con tres días de evolución. A las 10 horas posparto presentó mareos, palidez y taquicardia (PA 110/60 mmHg, FC 114 lpm, FR 20 rpm, SpO_2 99 %, Temp 36.6 °C). Al examen físico se evidenció hematoma vulvovaginal gigante. La paciente refirió antecedente similar en su parto previo. Se trasladó al centro obstétrico para resolución quirúrgica. Se retiraron puntos de episiotomía y se procedió al drenaje del hematoma, evacuando aproximadamente 1000 cm^3 de coágulos. Posteriormente se exploró la cavidad vaginal, identificando vasos sangrantes que fueron ligados con hemostasia rigurosa. Se realizó rafia y reparación del piso pélvico por planos utilizando sutura cromada 0. La paciente evolucionó favorablemente tras la intervención. El diagnóstico oportuno de hematomas puerperales es esencial, ya que pueden ocasionar hemorragias ocultas y comprometer la estabilidad hemodinámica materna. Aunque muchos hematomas posparto son pequeños y autolimitados, la incidencia de hematomas vulvares o infralevadores puede alcanzar hasta el 50 % de las parturientas tras partos vaginales. Los hematomas grandes y disecantes, como el descrito, generan sangrado descontrolado y aumentan la morbilidad materna. El tratamiento depende del tamaño, la estabilidad clínica y los recursos disponibles; cuando el hematoma progresa o compromete la vitalidad materna, la evacuación quirúrgica con hemostasia y reparación tisular es mandatorio, pudiendo complementarse con embolización arterial en centros especializados.

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Introduction

Puerperal hematomas are caused by the accumulation of blood in the connective tissue near the vagina, cervix or parametrium, generally associated with venous or arterial vascular lesions. They are a relevant cause of obstetric hemorrhage, the main preventable cause of direct maternal death, responsible for about 27.1 % of cases[1,2]. The pudendal artery is the main source of vulvar irrigation, and the incidence of vulvar hematomas in the obstetric population is estimated to be between 1 in 300 to 1000 deliveries[3]. The prevalence of postpartum hemorrhage varies by region: 7.2 % in Oceania, 8 % in Latin America, and up to 25.7 % in Africa, with maternal mortality due to postpartum hemorrhage close to 21 % in Latin America[2].

Risk factors include instrumental or traumatic delivery, episiotomy, tears, primiparity, twin pregnancy, and vulvovaginal varicose veins; others discussed are prolonged second stage, macrosomia, preeclampsia, and coagulopathies[1]. Traumatic causes, including vaginal and cervical lacerations, contribute significantly to postpartum blood loss, so timely evaluation and management are essential to prevent complications[4]. Symptoms are nonspecific, ranging from abdominal or perineal pain to urinary retention or hypovolemic shock[1]. The mean detection time is 6 h postpartum, with pain being the most frequent sign within the first 24 h. A retrospective study reported that 46.2 % of puerperal hematomas were associated with severe pain and 61.5 % were detected within 2 h after delivery, predominating on the right side[3].

Hematomas are classified as vulvar, vaginal, vulvovaginal, and subperitoneal, with different extent depending on their relationship with the levator ani muscle[1]. In exceptional cases, pseudoaneurysms can cause localized hematomas with a risk of rupture and severe arterial bleeding, diagnosable by ultrasound, tomography, or angiography[1,5]. Treatment depends on the size and hemodynamic stability: the use of tranexamic acid within the first 3 h postpartum is recommended in all cases of hemorrhage[2,6]. Small hematomas (<5 cm) can be managed conservatively, while large hematomas require surgical evacuation, hemostasis and tissue repair, with the possibility of selective embolization[7]. Postnatal physiotherapy, focused on strengthening the pelvic floor, is recommended in all patients after vaginal delivery[8].

The objective was to present a clinical case of postpartum giant vulvovaginal hematoma and to describe its clinical-surgical approach, highlighting the importance of early diagnosis and timely management to reduce maternal morbidity.

Case Presentation

A 31-year-old female patient, from Guayas and resident of Duran, Eloy Alfaro, is attending her second pregnancy of 40.3 weeks, due to contractile pain of mild intensity that radiates to the lumbar region of approximately 3 days of evolution.

Personal history, allergies (to dust) / clinical: not referred. /Gynecological: gestation: 1 birth 1, interreproductive period 11 years, date of last menstruation 17/04/2025 menarche: 16 years. Onset of sexual life at 19 years of age, did not refer sexually transmitted infections, prenatal controls at the Health Center (8 controls) did not use any contraceptive method, did not refer surgical history, did not refer / relatives did not refer.

Vital signs, blood pressure 110/67 mmHg, Pulse: 85 bpm, Respiratory rate 20 rpm SpO_2 98 % weight 61

kg, height 150 cm, Glasgow initial ocular (4) 4 verbal (5) 5 motor (6) 6 normal pupillary reaction, capillary filling 0.2.

Physical examination, Neurological: no deficit, normocephalic, neck: symmetrical without lymphadenopathy, thorax: symmetrical, abdomen: gravid uterus occupied by a single living cephalic fetus, right back fetal heart rate: 145 x min, uterine height: 36 cm, dynamism: 2/10 +++ genital region: on vaginal examination: cervix central location, dilation 5 cm effacement 50 % flat 1 entire membranes pelvis tested. lower limbs: symmetrical not edema. Ultrasound scan: single live cephalic product, right dorsum, DPB 9, 4 HC 33, 8 AC 34, FL 7, 3, ILA, 9 cm^3, FCF 140, posterior placenta, grade III, weight 3400 g, gestational age 39 SG.

Laboratories on admission, leukocytes 4.40x103 $\mu L^{-1,}$ hemoglobin 12.90 g dL^{-1}, hematocrit 41.00 %, blood group O Rh positive, HIV 4th generation nonreactive, syphilis negative, hepatitis B negative. Infectious urine test.

Diagnosis, 1) Spontaneous single delivery, cephalic vertex presentation. 2) Urinary tract infection in pregnancy.

Plan, electronic fetal monitoring, transfer to obstetric center for labor management. Patient in the antepartum ward with a diagnosis of pregnancy of 40 SG by echo plus labor, active phase plus long interreproductive period. Patient reports colicky pain in the hypogastrium region with lumbar irradiation, denies other symptoms. Vital signs BP: 122/78, HR: 76, FR 19 T: 36 SpO_2 99 % alert breathing in ambient air, urine output not quantifiable MAMA Score 0, Glasgow 15/15. Abdomen: pregnant woman occupied by a single live product, left cephalic, fetal heart rate 148 bpm, fetal movements present, uterine dynamic 3/10, on vaginal examination, cervix effaced, 80-90 % dilated, 8 cm, amniotic membranes spontaneously rupture with clear fluid leakage with lumps. Category 1 fetal monitoring. Vaginal delivery is expected. Plan: Spontaneous evolution.

Birth note, presenting dilation of 10 cm with 100 percent effacement in the expulsive period under aseptic and antisepsis standards, after placement of sterile drapes a single spontaneous delivery is attended to newborn sex female, crying at birth, timely clamping of the umbilical cord, early attachment, Apgar 8/9, weight: 3310 g, height: 49 cm, head circumference: 34 cm, Capurro 39 SG, active management of the third stage of labor is performed, complete placenta with Schultz type abruption is extracted, vaginal cavity is checked, no lacerations are evidenced, tear is observed for the right urethral, and in the vulvoperineal region it is repaired with chrome plating 2.0, uterine tone is verified, uterus contracted, bleeding approximately 200 mL. Patient and newborn go to recovery without incident. vital signs BP: 128/76, HR: 81, RF: 20, T: 36.2, SpO_2: 99 %, alert state of consciousness, breathing in ambient air, unquantifiable urinary output MAMA Score 0, Glasgow 15/15 plan: postpartum control biometrics.

Indications, general high-protein diet, nursing care, control of vital signs and MAMA Score every 15 min/2 h, control of uterine involution and lochia every 15 min/2 h, early attachment and joint accommodation, family planning counseling, exclusive breastfeeding, oxytocin 10 IU intramuscular STAT for active management of the third stage of labor. Medication: 0.9 % sodium chloride 1000 mL plus 20 IU IV at 90 mL/h finish and withdraw, paracetamol 1 g VO/8 h, cefazolin 1 g IV/6 h, postpartum control biometrics, communicate news.

Evolution note, *patient* undergoes 3 h of immediate physiological puerperium due to spontaneous single

delivery. At the time the patient does not report any symptomatology of clinical origin, he denies symptoms of neurological origin. Vital signs BP: 124/82, HR: 78, RF: 20, T: 36.2, SpO_2: 99 % alert, breathing in ambient air, unquantifiable urinary output MAMA Score 0, Glasgow 15/15. oriented in time and space and collaborates with the interrogation. On physical examination, normal fascias, semi-moist oral mucous membranes, non-painful milk-secreting breasts, soft abdomen depressible not painful on deep palpation, contracted uterus, infraumbilical location. Genitals: scarce lochia, raffia without inflammatory signs. Lower extremities do not oedema. Plan: move to the hospitalization floor.

Hospitalization area, patient who is 4 h of puerperium at the time of afebrile, conscious, oriented, does not report symptoms of clinical origin; vital signs: BP 126/70 HR 78 FR 20 SpO_2 99 % Temp 36.6º C alert state of consciousness, negative proteinuria, ambient oxygen, non-assessable urinary output; MAMA Score 0. On physical examination: moist mucous membranes, normocephalic head; symmetrical neck, without lymphadenopathy; symmetrical chest, ventilated lung fields, rhythmic heart sounds; depressible soft abdomen, not painful on palpation, contracted uterus; genital region, scarce lochia; symmetrical limbs, without edema. Plan: Assisted spontaneous ambulation + Collect control biometric results.

At 10 h postpartum patient complains of dizziness and looks pale, vital signs: PA 110/60 HR 114 FR 20 SpO_2 99 % Temp 36.6º C, the patient is checked and presents a giant hematoma of the vagina, patient reports that in her previous delivery the same thing happened to her, she presented a postpartum vaginal hematoma.

The patient was transferred to an obstetric center for resolution of the current clinical picture.

Post-surgical note, asepsis and antisepsis, placement of surgical drape, placement of bladder catheter, preserved diuresis, giant hematoma of the right vaginal wall is evidenced, stitches are removed and hematoma drainage is performed (approximately 1000 cm^3 of clots). The vaginal cavity was checked and blood vessels were first ligated with rigorous hemostasis, then raffia and pelvic floor repair was started by planes with 0 chrome suture, the procedure was completed without incident, the patient went to the recovery room awake and in stable condition, due to clinical signs of acute post-hemorrhagic anemia, a unit of red blood cells concentrated in the transsurgical was transfused.

Indications, vital signs control, nursing care, diuresis control, local ice at the vulvovaginal level, sodium chloride 0.9 % 1000 mL IV 30 drops per min, cefazolin 1 g IV every 6 h, tranexamic acid 1 g IV every 8 h for 24 h, ketorolac 60 mg IV every 8 h, post-transfusion control biometrics, communicate news.

15 h after remaining in the recovery area in stable clinical conditions with a favorable evolution, the patient was transferred to the hospitalization area with a diagnosis of: spontaneous single delivery + immediate post-surgical due to drainage of vulvovaginal hematoma, hemodynamically stable denied neurological symptoms. Vital signs BP: 90/60 HR: 76 FR: 20, SpO_2 98 % Temp 36.5º C, alert, breathing in ambient air, no bladder catheter, MAMA Score 0, on physical examination patient oriented in time, space and person, Glasgow 15/15 head: normocephalic. Semi-moist oral mucous membranes. Thorax: symmetrical: preserved expansibility. cardiopulmonary without apparent pathology abdomen: tonic uterus, below the navel. Genital region: edema in the right labia majora (local ice is indicated) scarce lochia. clear diuresis, lower limbs: symmetrical,

functional, non-edema laboratory: post transfusion: leukocytes 9.90, hemoglobin * 10.65 hematocrit * 32.00 %, thromboplastin time (TTP) 42.1, urea 11.92 TGO (AST) 22.30 TGP (ALT) 9.09. Plan: control biometrics + local ice at the vulvovaginal level + fulfilling hours for possible medical discharge.

Indications, vital signs control, nursing care, local ice at the vulvar level, sodium chloride 0.9 % 1000 mL IV at 42 mL/h, cefazolin 1 g IV/6 h, tranexamic acid 1 g IV/8 h for 24 h, ketorolac 60 mg IV/8 h communicate news.

48 h after the procedure (hematoma drainage), the patient reported feeling calm, denied neurological symptoms, so medical discharge was indicated with reverse reference to the health center for follow-up vital signs: BP: 110/69 mmhg HR: 78 bpm FR: 20 rpm, Temp 36.1º C, SpO_2 98%, state of consciousness: alert, breathing in the ambient air, MAMA Score 0, physical examination: lucid patient, oriented in time, space and person, Glasgow 15/15 to physical examination: moist mucous membranes. neck: symmetrical, no lymphadenopathy. Thorax: symmetrical, turgid breasts secreting breast milk. ventilated lung fields, rhythmic heart sounds. Abdomen: soft, depressible, uterus contracted below the umbilical scar, genital region: scarce, non-fetid lochia, no transvaginal bleeding is evidenced, vulvar edema is evident, at the time patient reports mild pain in the region, it is maintained with local ice diuresis: preserved. Lower extremities: symmetrical, no edema, laboratory: 24 h after hematoma drainage plus blood transfusion of one unit of concentrated red blood cells. leukocytes * 12.04 neutrophils % * 84.70 lymphocytes % * 7.3 red blood cells * 3.64 hemoglobin * 10.40 hematocrit * 32.50 platelets 253; Plan: Medical discharge + cefuroxime 500 mg orally every 12 hours for 7 days + diclofenac 50 mg every 12 hours for 3 days, iron + folic acid 460 µg one tablet every day for 30 days.



Figure 1 Giant vulvovaginal hematoma measuring 11 cm x 9 cm is observed after a single spontaneous delivery 10 hours ago



Figure 2 Post drainage of hematoma (approximately 1000 cm3). ligation of bleeding blood vessels, raffia and pelvic floor repair by planes with 0 chrome absorbent suture, discontinuous stitches, presence of bladder catheter is observed in image with preserved diuresis

Discussion

Vulvar hematomas, although common in obstetric practice, can quickly evolve into a life-threatening

condition if not diagnosed and treated in a timely manner. Management depends on the clinical condition of the patient and the resources available at the medical center, which may include conservative treatment, surgical evacuation or vascular occlusion techniques.

Tranexamic acid is a mainstay in the control of postpartum hemorrhage. Its standard route is intravenous; However, recent studies have explored direct topical application to vaginal lacerations, with comparable efficacy with lower risk of systemic effects. A trial conducted in Turkey with 161 women aged 20-35 years found that topical application may be a viable alternative in selected cases[4].

The literature describes complex cases, such as that of a 37-year-old Japanese woman with a left vulvar hematoma surgically drained after cesarean section, with blood loss close to 3000 mL and subsequent evolution to Sheehan's syndrome confirmed by magnetic resonance imaging[9]. Another report refers to a 35-year-old patient with a painful vulvar mass of 4-5 cm, treated by drainage and suture with Monocryl, with complete resolution at month[3]. These examples show clinical variability and the need to individualize management.

Vulvovaginal hematomas may appear in the first hours after partum or be initially confused with vulvar edema, delaying diagnosis[7]. Its incidence can reach up to 50 % of parturients after vaginal deliveries[7]. Small hematomas (<5 cm) usually resolve spontaneously with conservative management, while larger hematomas require surgical evacuation, vessel ligation, and drainage placement. In refractory cases, selective arterial embolization has been shown to reduce the need for transfusions and improve bleeding control[7,10].

Early surgical repair of perineal tears can increase maternal morbidity in the short term[11], but in hematomas greater than 5 cm it is still the technique of choice. In addition, the postpartum period is associated with pelvic floor dysfunctions, such as urinary or fecal incontinence, vaginal atrophy, and dyspareunia, which impact quality of life and require comprehensive follow-up[12,13].

Finally, a case of extensive rectal hematoma diagnosed by tomography and treated with selective embolization is highlighted, underlining the importance of clinical and radiological follow-up in patients with giant vulvovaginal hematomas[14].

Conclusion

Postpartum vulvovaginal hematoma is a rare but potentially serious complication, capable of compromising maternal hemodynamic stability and increasing morbidity if not diagnosed and treated in a timely manner. The case presented shows the importance of close clinical surveillance in the immediate puerperium, since the initial symptoms may be nonspecific and occult bleeding may go unnoticed. Surgical management with drainage, rigorous hemostasis and plane repair, complemented with transfusion support and antifibrinolytics such as tranexamic acid, allowed a favorable evolution. The literature confirms that hematomas larger than 5 cm require surgical intervention, while small hematomas can be resolved with conservative treatment. In all scenarios, early

diagnosis and multidisciplinary approach are essential to preserve maternal health and reduce complications in the short and long term.

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Conflicts of interest

The authors declare that they have no conflict of interest.

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Ethical considerations

For this publication, authorization was requested from the patient by signing informed consent, in this case description there is no patient identification or photos of her face.

Limitations in research

There are few cases described in the literature and there is no defined standard treatment.

Future prospects

More research is needed to determine all the consequences that can arise after a giant vulvovaginal hematoma.

Publishing permissions

A document signed by the patient authorizing the publication of the clinical case is attached.

Identification of the responsibility and contribution of the authors in the article

The authors declare to have contributed to the original idea (*Jorge Cárdenas*), research design (*Leonardo Espinoza*), data collection (*Julio Espinoza*, *José Maldonado*, *Augusto Vasconez*), data analysis (*María Calderón*, *Mariuxi Jaramillo*), drafting and article writing (*María Calderón*, *Carolina Gómez*, *Jorge Cárdenas*, *Leonardo Espinoza*, *Mariuxi Jaramillo*, *Julio Espinoza*, *José Maldonado*, *Augusto Vasconez*).

Use of artificial intelligence

We assume that the entire document was written based on ethical and professional criteria, and AI was not used to make the images or text.

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