When intervention becomes imperative: a case report of spontaneous vulvar edema during pregnancy

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Spontaneous idiopathic vulvar edema during the second trimester is a rare condition. The approach to managing this condition involves relieving symptoms, identifying underlying causes, and implementing appropriate treatment. Managing such cases during pregnancy is challenging because of concerns for potential adverse fetal outcomes. Conservative management expects the condition to be relieved spontaneously postpartum, whereas invasive treatment offers a more rapid resolution. Treatment choices are controversial because each method has its pros and cons and influences the delivery process to a certain extent. Surgical drainage becomes a viable option when patients are not responsive to medications. We report a case of spontaneous massive vulvar edema in a 22-year-old primigravida in her 23rd week of pregnancy. After ruling out other notable causes of vulvar edema, we decided to intervene using an invasive procedure because she complained of progressive symptoms and discomfort. Subsequently, the edema subsided postprocedure, and the patient experienced successful labor with no complications. This report aims to alert clinicians that drainage attempts should be considered in pregnant patients with worsening symptoms.

Key words: drainage, pregnancy, vulvar disease

Introduction

Spontaneous idiopathic vulvar edema in the second trimester is an unusual condition. Management is challenging because of concerns for adverse maternal and fetal outcomes. The treatment decision between conservative and invasive options is a subject of controversy because each method has its pros and cons, and there are currently no established standard guidelines for this condition. In this report, we present a case of spontaneous massive vulvar edema during pregnancy treated successfully by surgical drainage.

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Informed consent was obtained from the patient.

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Case presentation

A 22-year-old G0P0 female patient in the 23rd week of pregnancy came to our hospital with a chief complaint of painful vulvar swelling. The pregnancy had only been complicated by hydronephrosis because of compression, which was subsequently treated with a re-establishment of ureter flow by cystoscopy double-J ureteral stent placement and antibiotics. However, following 3 days of treatment, there was a noticeable increase in swelling of the labia majora. After that, the patient was referred to the Obstetrics and Gynecology Department and discharged with a 2-day course of antibiotics. Upon finishing the prescribed medication, she presented at our 'hospital's emergency room because of worsening symptoms. She was oriented but still showing signs of nervousness and distress. Her vital signs were stable. The physical examination was remarkable for significant swelling of labia majora, which was associated with tenderness and dysuria (Figure, A). The right groin was irritated and tender. The laboratory tests did not reveal any signs of infection or abnormal findings. Euroline system (Euroimmun, Germany) allergy test results showed that immunoglobulin E to latex was weakly positive. Neither a skin prick test nor a patch test was available for diagnosis. She did not have any history of allergic diseases before. Based on her clinical features and unremarkable laboratory results, we diagnosed the patient with spontaneous idiopathic spontaneous vulvar edema after ruling out possible etiologies. She was treated with anxiolytics, antihistamines, antibiotics, and standard wound care, including cleaning with Betadine twice daily. For drainage, we sterilized the surface with Betadine and used an 18 G needle to drain the fluid at the 'lesion's thinnest and lowest skin area. We applied moderate pressure to push the fluid out while reassuring and encouraging the patient. After draining 120 mL of fluid, we cleaned the lesion and applied the compression bandage without leaving the drain system. The fluid was yellow, clear, and odorless, without any blood. The culture was negative. After 3 days, we drained it again with 30 mL,

FIGURE
Vulvar edema before and after drainage.

A, Labia majora has swollen significantly, and the right groin is irritated and tender. B, After 7 days, the labia majora was treated with standard wound care and mechanical drainage. The swollen lesion has been resolved.

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improving the swelling. After 7 days, the 'patient's symptoms were resolved entirely without any sign of superficial infection (Figure, B). The patient was symptom-free upon discharge. Three weeks later, her genital organ was unremarkable in the follow-up session. Eight weeks later, she delivered a child successfully without any complications. Her double-J stent tube was retracted 1 month after her delivery.

Discussion

Vulvar edema is a medical condition associated with a variety of causes, including inflammation, infection, trauma, iatrogenic, and pregnancy (Table).[1] This phenomenon is not an uncommon physiological process in pregnant women in their postpartum period,[2] but spontaneous isolated vulvar edema, particularly in the second trimester, is extremely rare, with only a few cases reported in the literature. In cases where it has been described in association with pregnancy, this condition is the result of preeclampsia, gestational diabetes, hypoproteinemia, severe anemia, infection, lymphatic obstruction, or tocolytic therapy.[3–5] The clinical manifestations usually include 'patients' complaints of unilateral or bilateral labial swelling, which is either pitting or nonpitting depending on the underlying causes,[1] along with feelings of warmth or tenderness and difficulty in urination or ambulation in severe cases.

Currently, there are no established guidelines or consensus on the standard care for vulvar edema in pregnancy. The treatment emphasizes managing symptoms, identifying the underlying causes, and addressing them appropriately. Although most of the causes are determined and managed through standard routine pregnancy care, vulvar edema cases occurring with unclear reasons in some situations have been reported.[6] Management for vulvar edema in such cases is challenging because of its idiopathic feature, and pregnancy impacts the choice of medications on the basis of concerns for adverse fetal outcomes. Conservative and invasive management are reported choices in literature. In the concept of conservation, treatments include cold compression,[7] modification of nutrient deficiencies,[8] Trendelenburg positioning,[3] and water immersion therapy,[9] with the expectation that the condition is resolved spontaneously postpartum.[10]

TABLE
Etiology and differential diagnosis of vulvar edema

Etiology	Differential diagnosis
Inflammatory disease: contact dermatitis, Crohn's disease. . .	Vulvar lipoma
Infectious disease: Herpes Simplex Virus infection, vulvovaginal candidiasis, cellulitis, lymphogranuloma venereum, chancroid, Epstein-Barr virus infection, Parvovirus infection, filariasis. . .	Bartholin gland duct cyst
Trauma	Lymphangioma
Pregnancy-related: preeclampsia, gestational diabetes, hypoproteinemia, severe anemia, infection, lymphatic obstruction, tocolytic therapy. . .	Angiomyxoma
Iatrogenic	Lymphoma

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This approach prolongs patient discomfort, requires continuous surveillance, and does not prevent tissue deterioration and necrosis because of compartment syndrome. When invasive management is chosen, mechanical edema drainage can relieve pressure, facilitating blood flow to the affected area. Compared with conservative treatment, surgical alternatives provide a more rapid resolution. However, the risk of superimposed infection and postprocedural hemorrhage is also a concern when it comes to surgical interventions.[11] The decision between conservative treatment and invasive drainage is a subject of controversy, particularly considering that most cases of vulvar edema tend to resolve spontaneously after delivery. However, in massive vulvar edema, if no critical interventions are established before delivery, the mass may become a blockage of the birth canal and impact 'obstetricians' choices of mode of delivery.

Regarding our 22-year-old G0P0 female patient who was in her 23rd week of pregnancy, after ruling out all possible causes of vulvar edema and because she complained of worsening progressive painful vulvar swelling and dysuria with inadequate response to antibiotics along with signs of distress, surgical drainage was proceeded, followed by anxiolytics, antihistamines, antibiotics, and standard wound care. This critical approach controlled the symptoms promptly with no recurrence on her follow-up session, and her delivery was successful with no obstetrical complications.

Conclusions

Spontaneous idiopathic massive vulvar edema is rare in pregnancy but requires thorough evaluation to rule out possible underlying causes. Treatment is symptomatic and etiologic, which typically involves a combination of supportive therapy with mechanical drainage and antibiotic prophylaxis, along with standard pregnancy care and considerations of both maternal and fetal outcomes. ■

CRediT authorship contribution statement

Vo Anh Vinh Trang: Writing – original draft, Investigation, Conceptualization. **Thao-Ngan Nguyen Pham:** Writing – original draft, Investigation. **Bao Huy Le:** Writing – original draft. **Thien Tan Tri Tai Truyen:** Writing – review & editing, Writing – original draft. **Hoang Kim Tu Trinh:** Investigation, Conceptualization. **Kieu-Minh Le:** Software, Resources, Conceptualization. **Huu Doan Pham:** Resources, Conceptualization. **Ngoc Minh Tam Nguyen:** Resources, Investigation. **Quoc Kha Tran:** Writing – original draft. **Phuc Cam Hoang Nguyen:** Writing – review & editing, Supervision, Project administration. **Vinh Hung Tran:** Supervision, Project administration.

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