DOI: 10.69729/aogp.v20i2a08



# Spontaneous postpartum hemoperitoneum in a puerperal patient with suspected endometriosis

# Hemoperitoneu espontâneo no pós-parto em puérpera com suspeita de endometriose

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## Abstract

Endometriosis is a chronic, oestrogen-dependent inflammatory disease characterised by the presence of endometrium-like tissue outside the uterine cavity. Several obstetric and puerperal complications have been described in association with this condition, including spontaneous hemoperitoneum.

We report the case of a 26-year-old puerperal patient with suspected endometriosis who developed spontaneous hemoperitoneum 24 hours after a dystocic vaginal delivery. Imaging revealed a large volume of intraperitoneal fluid, and exploratory laparotomy identified diffuse bleeding from the posterior uterine serosa and an actively bleeding right adnexal vessel, as well as superficial lesions suggestive of endometriosis. Surgical haemostasis was achieved, and postoperative recovery was favourable.

This case highlights the diagnostic challenges of hemoperitoneum occurring in the immediate puerperium and the importance of considering hemoperitoneum in the differential diagnosis of abdominal pain during the puerperium, even in the absence of significant vaginal haemorrhage.

**Keywords:** Endometriosis; Hemoperitoneum; Postpartum Period.

## Resumo

A endometriose é uma doença inflamatória crónica e estrogénio-dependente, caracterizada pela presença de tecido semelhante ao endométrio fora da cavidade uterina. Várias complicações obstétricas e puerperais têm sido descritas em associação com esta patologia, incluindo o hemoperitoneu espontâneo.

Apresenta-se o caso de uma puérpera de 26 anos, com suspeita clínica e imagiológica de endometriose, que desenvolveu hemoperitoneu espontâneo 24 horas após parto vaginal distócico. A avaliação imagiológica revelou derrame intraperitoneal volumoso e a laparotomia exploradora identificou hemorragia difusa da serosa uterina posterior e hemorragia ativa de um vaso anexial direito, bem como lesões superficiais sugestivas de endometriose. A hemostase foi obtida cirurgicamente e a evolução pós-operatória foi favorável.

Este caso ilustra os desafios diagnósticos do hemoperitoneu no puerpério imediato e a importância de considerar o hemoperitoneu no diagnóstico diferencial da dor abdominal no puerpério, mesmo na ausência de hemorragia vaginal significativa.

**Palavras-chave:** Endometriose; Hemoperitoneu; Período pós-parto.

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## INTRODUCTION

Endometriosis is a chronic, oestrogen-dependent inflammatory disease characterised by the presence of endometrium-like tissue outside the uterine cavity, most commonly involving pelvic structures, and associated with chronic inflammation and a broad spectrum of clinical manifestations. It affects approximately 10% of women of reproductive age and may be diagnosed on the basis of clinical history, examination and imaging findings, without requiring histological confirmation in all cases[1].

Spontaneous hemoperitoneum in pregnancy is an extremely rare event. A recent Italian population-based study estimated an incidence of approximately 0.04 per 1000 births[4]. Its occurrence in the postpartum period appears to be even rarer.

Although pregnancy is often associated with symptom improvement, endometriosis has been linked to rare but severe obstetric and puerperal complications, including spontaneous hemoperitoneum, uterine rupture and adnexal haemorrhage, possibly related to increased vascular fragility secondary to decidualisation[3]. Despite its rarity, spontaneous hemoperitoneum represents a potentially life-threatening condition requiring prompt diagnosis and intervention.

This article reports a case of postpartum hemoperitoneum and aims to discuss the diagnostic challenges and the difficulties in establishing its aetiology.

## CLINICAL CASE

We present the case of a 26-year-old primigravida with an adequately followed pregnancy and no obstetric complications, who presented to the Obstetric Emergency Department at 36 weeks and 6 days of gestation following premature rupture of membranes.

Her medical history included iron-deficiency anaemia, hiatal hernia repair at the age of five, and suspected endometriosis based on long-standing incapacitating dysmenorrhoea and deep dyspareunia, as well as previous imaging findings. A pelvic ultrasound performed before pregnancy described a left ovarian cystic lesion measuring approximately 30 mm with low-level internal echoes ("ground-glass" appearance), suggestive of an endometrioma. During pregnancy, no adnexal lesions suggestive of endometrioma were identified on ultrasound examination.

Premature rupture of membranes occurred at 36+6 weeks, followed by spontaneous onset of labour. Vaginal delivery was dystocic, requiring vacuum extraction due to prolonged second stage of labour, and a right mediolateral episiotomy was performed. The newborn weighed 2070 g, corresponding to low birth weight for gestational age, although no antenatal diagnosis of fetal growth restriction had been established.

At 24 hours postpartum, the patient developed progressive diffuse abdominal pain and abdominal distension. On physical examination, the abdomen was diffusely tender with signs of peritoneal irritation. The uterus was well contracted and there was no significant vaginal bleeding. The patient developed progressive haemodynamic instability, with hypotension and tachycardia suggestive of evolving haemorrhagic shock. No fever, foul-smelling lochia or clinical signs of infection were present.

Laboratory evaluation revealed a haemoglobin level of 6.8 g/dL, compared with a pre-delivery value of 10.4 g/dL. Abdominal and pelvic ultrasound demonstrated a significant amount of free intraperitoneal fluid suggestive of hemoperitoneum. Two units of packed red blood cells were administered.

Following transfusion, the patient achieved temporary haemodynamic stabilisation, allowing further imaging evaluation. An abdominopelvic computed tomography scan subsequently revealed a moderate to large hemoperitoneum, predominantly in the pelvic cavity, with spontaneously hyperdense fluid and higher densities adjacent to the uterine surface, without evidence of active contrast extravasation.

The patient underwent an exploratory laparotomy. Upon entry into the abdominal cavity, a large hemoperitoneum was identified, with aspiration of approximately 1300 mL of blood and clots. Surgical exploration revealed diffuse oozing from a friable posterior uterine serosa with multiple punctate haemorrhagic areas, as well as an actively bleeding right adnexal vessel. Adhesions were observed in the posterior cul-de-sac and retrocervical region, and multiple superficial lesions suggestive of endometriosis were noted on the posterior uterine wall. The adnexa were otherwise

macroscopically normal, with no visible lesions suggestive of endometriosis.

Haemostasis was achieved through ligation of the bleeding adnexal vessel, suturing of haemorrhagic areas on the posterior uterine wall, and application of oxidized regenerated cellulose. No fibrinolytic or additional pharmacological haemostatic agents were used.

In the immediate postoperative period, haemoglobin was 7.0 g/dL. An additional transfusion of packed red blood cells was administered, with a subsequent rise in haemoglobin to 9.3 g/dL. The subsequent clinical course was favourable, and the patient was discharged home 72 hours after surgery with a haemoglobin level of 7.0 g/dL.

## DISCUSSION

Postpartum abdominal pain is common and often benign; however, rare and potentially life-threatening conditions such as hemoperitoneum must be promptly excluded. The occurrence of hemoperitoneum at 24 hours postpartum further increases the diagnostic challenge, as more common causes of postpartum haemorrhage must initially be considered. In this patient, uterine atony, retained placental tissue, genital tract trauma and coagulation disorders were excluded based on clinical examination and laboratory findings.

Although spontaneous hemoperitoneum is more frequently described during pregnancy, its presentation in the immediate postpartum period appears to be exceptionally rare, with the literature largely limited to case reports and small case series[3,5].

Endometriosis has been associated with rare but severe obstetric and puerperal complications, including spontaneous hemoperitoneum. Proposed mechanisms include bleeding from decidualised endometriotic implants, rupture of fragile serosal or peritoneal vessels, chronic inflammation-related vascular fragility, and mechanical stress during labour combined with the haemodynamic changes associated with uterine involution in the early postpartum period.

In this patient, several elements support a possible association with endometriosis, including the clinical history suggestive of the disease and the intraoperative observation of superficial lesions on the posterior uterine wall. Nevertheless, even in the presence of histological confirmation of endometriosis, establishing a direct causal relationship between endometriosis and postpartum hemoperitoneum remains difficult.

An alternative and plausible aetiology is spontaneous adnexal or utero-ovarian vascular rupture, a rare but recognised cause of postpartum hemoperitoneum, particularly in the context of labour- related mechanical stress. Adenomyosis was also considered as a differential diagnosis; however, both imaging and macroscopic findings suggestive of this condition may be difficult to interpret during pregnancy and the immediate postpartum period.

Prompt recognition of hemoperitoneum is critical, as delayed diagnosis may lead to ongoing intra-abdominal bleeding, haemorrhagic shock, progressive haemodynamic compromise, severe maternal morbidity and even maternal mortality.

## CONCLUSION

This case highlights the diagnostic challenges of postpartum hemoperitoneum, particularly after vaginal delivery, as well as the difficulty in determining its underlying aetiology. Prompt recognition and surgical management are crucial, and clinicians should consider a broad differential diagnosis, including endometriosis, adenomyosis, and spontaneous rupture of adnexal or utero-ovarian vessels.

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## AUTHOR CONTRIBUTIONS

Miriam Massano Jesus: Conceptualization, data collection, literature review, manuscript writing and editing. Fernanda Pereto Meyer: Data collection, supervision, critical revision of the manuscript and final approval of the version to be published.

## INFORMED CONSENT

Written informed consent was obtained from the patient for publication of this clinical case.

## CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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**RECEIVED:** 27/08/2025
**ACCEPTED:** 14/05/2026