

# A Treatment of Postpartum Retroperitoneal Hematoma by Drainaging Through USG-Guided Percutaneous Catheterization: A New Approach to Postpartum Hematoma: Case Report

## Postpartum Retroperitoneal Hematomun Ultrason Eşliğinde Perkütan Kateterizasyon ile Drenaj Tedavisi: Doğum Sonrası Hematoma Yeni Bir Yaklaşım

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**ABSTRACT** Puerperal genital hematomas are rare causes of postpartum hemorrhaging. Puerperal hematomas may be seen in vulvar, vaginal, paravaginal, and retroperitoneal localizations. There are three primary approaches in the management of puerperal hematoma, including conservative and supportive approaches, surgical approaches, and selective arterial embolization. In this study, we present a case of a retroperitoneal pelvic hematoma that developed in the postpartum period and was managed conservatively with USG-guided percutaneous drainage. Mortality and morbidity can be decreased by making the diagnosis of postpartum genital hematomas with close follow-up, early control examination, and proper management. Apart from the three suggested methods, drainage through USG-guided percutaneous catheterization may be considered in hemodynamically stable patients.

**Key Words:** Postpartum hemorrhage; hematoma; catheterization

**ÖZET** Puerperal genital hematomalar postpartum kanamanın nadir nedenlerindedir. Puerperal hematomalar vulvar, vajinal, paravajinal ve retroperitoneal lokalizasyonlarda görülebilir. Puerperal hematoma yönetimi üç primer yaklaşım bulunmaktadır. Bunlar konservatif ve destekleyici yaklaşım, cerrahi yaklaşım ve selektif arterial embolizasyondur. Bu çalışmada postpartum dönemde gelişen ve ultrason eşliğinde perkütan drenaj ile konservatif olarak tedavi edilen retroperitoneal pelvik hematoma olgusu sunulmuştur. Yakın takip ile postpartum genital hematomaların tanısının konulması, erken kontrol muayene ve uygun yönetim ile mortalite ve morbidite azalacaktır. Üç önerilen metot dışında ultrason eşliğinde perkütan kateterizasyon ile drenaj hemodinamik olarak stabil hastalarda genital hematoma yönetimi düşünülebilir.

**Anahtar Kelimeler:** Postpartum kanama; hematoma; kateterizasyon

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Puerperal genital hematomas are rare causes of postpartum hemorrhaging, but may cause severe morbidity and mortality. The incidence of puerperal hematomas is between 1/300 and 1/1500.<sup>1</sup> Puerperal hematomas may be seen in vulvar, vaginal, paravaginal, and retroperitoneal localizations.<sup>2</sup> In this study, a case of a retroperitoneal pelvic hematoma that developed in the postpartum period and was managed with percutaneous needle aspiration and percutaneous catheter drain insertion is presented.

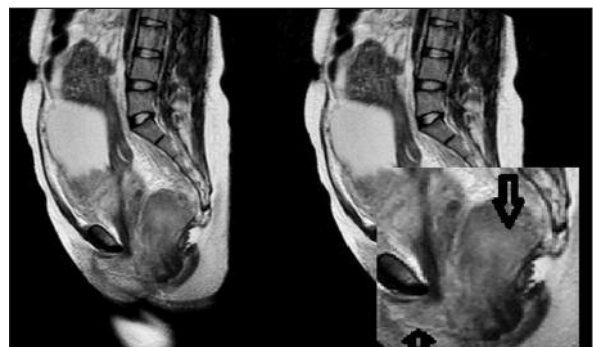
### CASE REPORT

An 18-year-old woman, gravid 1 partum 1, was brought to the emergency unit with pain in the right perineal region and the right-lower quadrant of

the abdomen. The patient had gone through a spontaneous labor by a right mediolateral episiotomy in a private hospital about three hours ago. The baby was 4200 grams in weight. On physical examination, there was tenderness on the right-lower quadrant; there was no peritoneal irritation. The uterus was hard in consistency and the fundus was under the umbilicus. On speculum examination, there was no vaginal hemorrhaging or laceration and the mediolateral episiotomy line could be observed. On manual vaginal examination, there was a tender semi-solid mass on the right lateral wall starting approximately 2 cm from the introitus and measuring about 7 cm in diameter. The vital signs of the patient were as follows: BP: 90/70 mHg, pulse: 100/min and body temperature: 36.9°C. The laboratory test results were as follows: Hb: 7.5 g/dL, Hct 22.1%, PT: 1.25s, INR 0.95, and PLT: 391 000/mm<sup>3</sup>. On transvaginal ultrasonography (USG), the uterus was consistent with the postpartum period, larger than normal and deviating to the right. A heterogeneous semi-cystic lesion, including hypo-hyperechoic areas consistent with a hematoma measuring about 12 cm in its antero-posterior diameter, was observed extending from the right lateral of the vagina to the right-lower quadrant and through the pararectal area to the left-lower quadrant. On abdominal USG, diffuse free fluid collections were observed at the right and the left paracolic areas, perihepatic region, inferior to the spleen, between the intestines and the pelvic region; these collections were considered to be primarily as coagulating hemorrhage. Grade 1 pelviectasis was observed. On lower abdomen computed tomography (CT), a 12 cm-sized heterogeneous density was seen extending from the right side of the vulva to the level of the crista iliaca anterior superior, which was consistent with the USG findings. There was also free peritoneal fluid.

Five units of erythrocyte suspension and two units of Fresh Frozen Plasma were transfused to the patient. She had difficulty in spontaneous micturition and her diuresis was followed up with a urinary catheter. Her vital findings were stable and the US findings revealed no changes in the hematoma size and no increase in peritoneal free

fluid; however, as the hematoma size was over 5 cm, surgical drainage was planned. However, the patient and her relatives did not give consent for the intervention. On a control magnetic resonance imaging (MRI) performed on the second day postpartum, no changes in hematoma size were observed (Figure 1). The mass exerted pressure on the rectum and at the perineal level on the urethra and the urinary bladder; it also pushed these structures toward the left side. There was no free fluid in the peritoneal cavity. On the second day postpartum, the patient had a fever, CRP was 20 mg/L, and ESR was 122 mm, and she was administered metronidazole and ceftriaxone empirically. She had a persistent fever and no regression in the hematoma size, and hence, USG-guided percutaneous drainage on the third day postpartum was planned. Her consent was obtained for the procedure. After sterilization of the skin where the intervention was planned and regional anesthesia of the site, the collection in the paravesical regions of the bilateral lower quadrants was aspirated through the USG-guided puncture with a 22 G needle to empty the cavity percutaneously. The total aspiration was hemorrhagic and was about 1000 mL. Cultures were taken from aspirated fluid. Then, an 8 F drainage catheter was inserted into the cavity on the right-lower quadrant and was left there for vacuum-packed drainage. 150 mL of hemorrhagic fluid was drained for the first day. The catheter was removed on the second day because no fluid was draining. On the tenth day postpartum, the patient's body temperature was subfebrile; CRP was 1.8 mg/L and there was no growth on cultures; hence, the an-



**FIGURE 1:** Control MRI on the second day postpartum; a heterogeneous lesion consistent with a hematoma measuring about 14x8 cm can be seen.

tibiotics were stopped. The patient was discharged when the hematoma size was seen to have decreased on the control MRI (Figure 2) and the infectious parameters had regressed (decrease in leukocyte, CRP and ESR levels), and her vital signs had stabilized. An MRI at the third month postpartum revealed complete hematoma resorption and regression (Figure 3). The patient's consent was obtained for publication.



**FIGURE 2:** Control MRI after percutaneous catheterization; a 9x8 cm hematoma, smaller than in the previous MRI, can be seen.



**FIGURE 3:** Control MRI at the third month postpartum.

## DISCUSSION

Puerperal genital hematomas are rarely seen, but they are obstetrical complications that play major roles in mortality. Puerperal hematomas mostly occur as a result of bleeding lacerations following cesarean section or episiotomy, but they may also occur due to blood vessel injuries.<sup>3</sup>

The risk of puerperal hematoma increases in nulliparous individuals, in the presence of preeclampsia, in those with prolonged second stages of labor, in grand multiparity, in those with vulvar varicosity or bleeding disorders, and in women delivering infants over 4000 g at birth.<sup>4</sup> This case was in the high-risk group; the patient was nulliparous and her baby was born with a weight over 4000 g.

The clinical manifestations of puerperal hematomas change according to blood loss and the localization of the hematoma. The classical findings are persistent postpartum pain accompanying findings of shock, elevated uterine fundus, the presence of unilateral fluctuating mass, or the feeling of rectal pressure and mass on manual vaginal examination.<sup>5</sup>

The combined use of imaging techniques is useful for determining the extent of the lesion, its relation with other pelvic organs, and for follow-up. Ultrasonography is suggested on the first assessment; since it has a limited capability for diagnosing retroperitoneal hematomas, computerized tomography is recommended. Use of intravenous contrast agents may be beneficial in the diagnosis. In addition to studies advocating that MR imaging is more useful, there are some other studies reporting that it is time-consuming and more expensive.<sup>6</sup>

There are three primary approaches in the management of puerperal hematomas. These are 1) conservative and supportive approaches, 2) surgical approaches, and 3) selective arterial embolization.<sup>7,8</sup>

The vital signs of the patient should be closely monitored and complete blood count, fibrinogen, prothrombin, and the partial thromboplastin time should be monitored. It is essential to monitor for signs of hypovolemia. A decrease in urinary output

is an important sign of reduction of end-organ perfusion. Volume resuscitation should be provided by crystalloids or blood products.

In cases with impaired hemodynamic stability and with a hematoma size of over 5 cm or increased size of the hematoma, surgical drainage and ligation of the bleeding focus is recommended.<sup>9</sup> In hemodynamically stable cases in which the bleeding persists or in the case of an unsuccessful surgical technique, selective arterial embolization is recommended as an alternative treatment method. In our hemodynamically stable case, a hematoma beginning in the paravaginal region and spreading toward the retroperitoneum was observed. Apart from the recommended methods, the size of the patient's hematoma decreased and her persistent fever was resolved by means of USG-guided percutaneous catheterization. The advantages of this technique include the fact that it is easy to apply, low-cost, and does not require general anesthesia for intervention. However, USG-guided percutaneous catheterization is not recommended for he-

modynamically unstable patients. Although we have opted for the insertion of a percutaneous catheter, almost no fluid was drained through the catheter and it was removed after 24 hours. Thus, on the basis on this case, although the outcome was good, we cannot confirm the necessity of a catheter insertion following a successful drainage of a stable hematoma. However, our case confirms the possibility of this option. There are no data supporting the benefits of routine administration of prophylactic antibiotics in puerperal genital hematomas. Therefore, administration of broad-spectrum antibiotics is recommended in cases undergoing surgical drainage or in those with infection findings, as observed in our case.<sup>10</sup>

Making the diagnosis of postpartum genital hematomas with close follow-up, early control examination, and proper management will decrease mortality and morbidity. Apart from the three suggested methods, drainage through USG-guided percutaneous catheterization may be considered in hemodynamically stable patients.

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