

# Postpartum Hemorrhage due to Inferior Epigastric Vein Injury

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## ABSTRACT:

Postpartum hemorrhage due to inferior epigastric vein injury

**Objective:** Postpartum hemorrhage is one of the leading causes of maternal mortality. Postpartum hemorrhage originates from the genital organs primarily as uterine atonia, and although extremely rare, it may also originate from reasons other than the genital organs. Inferior epigastric vascular damage may be the origin of postpartum hemorrhage and despite its rarity, can cause morbidity and even mortality.

**Case:** We present a case, who is being followed up for severe pre-eclampsia in whom inferior epigastric venous injury occurred in relationship with blunt widening of a Pfannenstiel incision during caesarean section operation.

**Conclusion:** Although extremely rare, in cases thought to be postpartum hemorrhage, especially if there is no vaginal bleeding and the uterus has contracted, causes other than the pelvic organs must be suspected.

**Keywords:** Cesarean Section, morbidity, postpartum hemorrhage

## ÖZET:

İnferior epigastrik ven yaralanmasına bağlı gelişen postpartum kanama

**Amaç:** Postpartum kanama maternal mortalitenin önde gelen nedenlerindedir. Postpartum kanama genital organlardan çoğunlukla da uterin atoniden kaynaklanır ve nadiren genital organ dışındaki organlardan da kaynaklanabilir. İnferior epigastrik damarların yaralanmasına bağlı kanamalar postpartum kanamalara neden olabilir. Bu nadir bir durum olmasına rağmen morbidite hatta mortaliteye neden olabilir.

**Olgu:** Preeklampsi tanısı ile takip edilen ve sezeryan ile doğum yapan hastada Pfannenstiel insizyon sonrasında batin duvarının çekilmesine bağlı inferior epigastrik ven yaralanması sonrasında gelişen postpartum kanama olgusu sunulmaktadır.

**Sonuç:** Postpartum kanamadan şüphelenildiği zaman eğer genital organlara bağlı kanama yoksa diğer organlar dikkatli muayene edilmelidir. Özellikle de sezeryan olmuş olgularda insizyon bölgesi mutlaka göz önünde bulundurulmalıdır.

**Anahtar kelimeler:** Doğum sonrası kanama, morbidite, sezaryen

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## INTRODUCTION

Every year, 14 million cases of obstetric hemorrhage occur worldwide and 127,000 maternal deaths occur due to obstetric hemorrhage (1,2). Obstetric hemorrhage and associated complications can be mortal and its incidence varies by region, both around the world and in Turkey (3). The most common reason is uterine

atony, but placental anomalies, genital trauma and bleeding diathesis may also cause postpartum hemorrhage (4,5). Although damage to the inferior epigastric vessels during a caesarean section is extremely rare, it may cause postpartum hemorrhage (6-8).

The presented case here, is seen very rarely, which is an iatrogenic epigastric venous damage causing postpartum hemorrhage.

## CASE

A 24-year old female in her first pregnancy presented at the clinic with preeclampsia at 36<sup>th</sup> week. Induction was started with vaginal dinoproston. Urinalysis showed 3 positive proteinuria was present and blood pressure were 170/100, 160/110 and 160/90 mmHg in half-hour intervals half hour interval. Liver and kidney functions were normal, thrombocyte count was 110.000/mm<sup>3</sup> but she said that she had headache and she blacked out. Hence severe preeclampsia was diagnosed. Antihypertensive treatment was started with alpha methyl dopa and convulsion prophylaxis of magnesium sulphate was administered. The biochemical values were normal; haemoglobin was 11.5mg/dl. After 4 hours of monitoring, repeated late decelerations in cardiotopography, the decision for a caesarean section operation was made because of acute fetal

distress. Cesarean section was performed with the usual method. After skin and rectus sheath incision, parietal peritoneum was opened by blunt dissection then rectus muscle was stretched bilaterally to expand the incision. A female infant weighing 2680 gr. with an Apgar score of 8 was delivered. No complication was seen during the caesarean procedure. At postoperative 4 hours, arterial pressure was 80/40 mmHg so the patient was examined. There was no vaginal bleeding and the uterus had contracted. On ultrasonography, 6 cm mass was observed on the midline anterior to the uterus. As the haemoglobin value was 8.0 mg/dl, it was thought that there was continuing intra-abdominal bleeding so the patient was taken for laparotomy. The abdomen was entered but the uterus incision line was observed to be clean with the abdominal cavity. Dense haematoma were observed below the light side of rectus muscle (Figure-1). By lifting the rectus muscle, the epigastric vessel were seen. Light hypogastric vein were seen to be torn but the bleeding had stopped. By draining the haematoma below the muscle connected to the torn vascular structures. After ligation of vein the bleeding was brought under control. In the postoperative follow-up, the patient was seen to be haemodynamically stable and on postoperative day 4 the patient was discharged.



**Figure-1:** Dense haematoma were observed below the light side of rectus muscle

## DISCUSSION

The most common etiology of postpartum hemorrhage is uterine atony. Atony is the about 70-80% the cause of the postpartum hemorrhage. Other causes of postpartum hemorrhage are retained placental tissue, genital tract trauma, coagulation disorders and placental invasion abnormalities (9). As the development of postpartum hemorrhage associated with inferior epigastric vascular damage is extremely rare, diagnosis can be difficult. In massive hemorrhage, there may be a change in colour in the abdominal wall but these cases are rarely seen and in the majority, specific clinical findings are not encountered (6). Therefore it can be easily overlooked. In a patient with postpartum hemorrhage it must be considered, particularly if

there is no vaginal bleeding and if the examination of the genital organs is normal (7). Obstetric sonography may also be helpful in diagnosis. Cases have been reported in literature where there was no vaginal bleeding and the uterus had contracted so the bleeding was not initially thought to be associated with uterine atony and diagnosis was made by applying selective angiography to ascertain the focus of the bleeding, then successful treatment was applied with gel infusion (6,7). In the current case, intraperitoneal hemorrhage was considered as there was a 6 cm mass on the uterus incision line and the haemoglobin value dropped to 3.5 mg/dl, which means there is a need for immediate intervention. In this case, it was associated with torn vascular structures below the rectus muscle.

It is thought that in this case, after entering the abdomen with a pfannenstiel incision, the blunt widening to both sides of the incision caused the tearing of the veins. In addition, the magnesium

sulphate infusion was found to contribute to the loosening of the rectus muscle and may have caused the injury to the veins to be more sensitive. There was no arterial tearing. In literature, hemorrhage due to arterial tears has been reported to be massive (6,7). Although venous blood flow is less than arterial flow and despite compression below the muscle, a hematoma reaching a size of 6 cm, as seen in this case, can be the cause.

Although rarely seen, postpartum hemorrhage may originate in tissues or organs other than the genital organs and it may affect the haemodynamic parameters of the patient. In the light of rare cases reported in literature, following a caesarean section when there is no vaginal bleeding, it must not be forgotten that hemorrhage can originate from the abdominal wall. In addition, hard blunt interventions should be avoided when widening the Pfannenstiel incision during caesarean procedures and tissues should be treated carefully where possible.

## REFERENCES

1. World Health Organization (WHO). Reducing the global burden: postpartum haemorrhage. *Making Pregnancy Safer 2007*; 1: 1-8.
2. Prata N, Bell S, Weidert K. Prevention of postpartum hemorrhage in low-resource settings: current perspectives. *Int J Womens Health 2013*; 5: 737-52. [\[CrossRef\]](#)
3. Senturk MB, Cakmak Y, Guraslan H, Dogan K. Emergency peripartum hysterectomy: 2-year experiences in non-tertiary center. *Arch Gynecol Obstet 2015*; 292:1019-25. [\[CrossRef\]](#)
4. Ida A, Ito K, Kubota Y, Nosaka M, Kato H, Tsuji Y. Successful reduction of acute puerperal uterine inversion with the use of a bakri postpartum balloon. *Case Rep Obstet Gynecol 2015*: 424891. [\[CrossRef\]](#)
5. Gibbins KJ, Albright CM, Rouse DJ. Postpartum hemorrhage in the developed world: whither misoprostol? *Am J Obstet Gynecol 2013*; 208: 181-3. [\[CrossRef\]](#)
6. Ko SF, Lin H, Ng SH, Lee TY, Wan YL. Postpartum hemorrhage with concurrent massive inferior epigastric artery bleeding after cesarean delivery. *Am J Obstet Gynecol 2002*; 187: 243-4. [\[CrossRef\]](#)
7. Ko SY, Park SW, Sohn IS, Lee JY, Kwon HS, Hwang HS, et al. Interventional management for complications following caesarean section. *Br J Radiol 2011*; 84: 204-9. [\[CrossRef\]](#)
8. Yalamanchili S, Harvey SM, Friedman A, Shams JN, Silberzweig JE. Transarterial embolization for inferior epigastric artery injury. *Vasc Endovascular Surg 2008*; 42: 489-93. [\[CrossRef\]](#)
9. Montufar-Rueda C, Rodriguez L, Jarquin JD, Barboza A, Bustillo MC, Marin F, et al. Severe postpartum hemorrhage from uterine atony: a multicentric study. *J Pregnancy 2013*; 2013: 525914. [\[CrossRef\]](#)