



Puerperal Hematoma Combined with Retroperitoneal Dissection and Obstructive Uropathy

Wei-Hsi Chang^{1,2}, Chi-Kung Lin¹, Yung-Jong Chiang², and Chi-Huang Chen^{1*}

¹Department of Obstetrics and Gynecology, Tri-Service General Hospital, National Defense Medical Center, Taipei

²Section of Obstetrics and Gynecology, Kaohsiung Armed Forces General Hospital, Kaohsiung, Taiwan, Republic of China.

Following an otherwise complicated vaginal delivery, puerperal hematomas extending into the retroperitoneum and accompanying obstructive uropathy require surgical intervention. Immediately following vaginal delivery, a 24-year-old woman (G2P2) developed a postpartum hemorrhage (PPH) with formation of a right puerperal vulvovaginal hematoma. Bilateral flank pain occurred as the bleeding continued. A large retroperitoneal hematoma with obstructive uropathy developed, accompanied by hemodynamic instability. Ligation of the hypogastric artery and decompression of the ureters bilaterally was performed, with dramatic relief of the symptoms. Such puerperal hematomas associated with concealed bleeding into the retroperitoneal cavity and ureteral compression require surgical intervention. They should be managed with caution, given their potential progression into the retroperitoneal cavity with excruciating pain, ureteral compression and massive accumulation of blood. Hypogastric artery ligation and early evacuation of blood clots by laparotomy is the treatment of choice.

Key words: Postpartum hemorrhage (PPH), Puerperal hematoma, obstructive uropathy, Hypogastric artery ligation.

INTRODUCTION

Puerperal hematomas, classified as vulvar (anterior triangle or posterior triangle), vulvovaginal, vaginal, or subperitoneal¹ might represent a significant hemorrhage and should be considered obstetric emergencies. The extent of pelvic vascular injury during vaginal delivery corresponds to the degree of progression of parturition and the volume of blood accumulated. Puerperal hematomas generally involve branches of the hypogastric artery² and are often disregarded as benign vulvovaginal hematomas *in situ* until hypovolemic shock occurs. Most such hematomas will present within 24 h of delivery. External ureteral obstruction caused by a concealed retroperitoneal hematoma is rare, but embolization or ligation of the involved artery are effective treatments.

CASE REPORT

Twelve hours after a complicated term vaginal delivery, a 24-year-old parous woman presented as a referral complaining of excruciating vulvar pain. A PPH was diagnosed and a significant right vaginal laceration was noted, complicated by an expanding hematoma (Fig. 1A) and hypovolemia. The patient's initial vital signs were HR 120/min; BP 97/63 mmHg and complete blood hemoglobin (Hgb) 8.9 g/dL at the emergency room. The peripartum Hgb level had been 11.2 g/dL at a local medical center and the patient had received initial treatment measures including placement of vaginal sutures, application of ice and a blood transfusion (total of 6U packed RBC and 2U of whole blood). However, symptoms persisted with tachycardia (HR 125/min), a continued low Hgb level (7.3 g/dL) and difficulty with micturition.

To determine the extent of the puerperal hematoma, a pelvic computer tomography scan revealed a hydroureter and hydronephrosis accompanied by a retroperitoneal hematoma with an area of 15 × 10 cm² (Fig. 2A, B). Because of the patient's hemodynamic instability and retroperitoneal dissection, the decision was made to intervene with surgery rather than perform an embolization. Evacuation of the blood clot was performed during an exploratory laparotomy; the hypogastric arteries were ligated and the

Received: May 18, 2007; Revised: July 31, 2007; Accepted: September 14, 2007

*Corresponding author: Chi-Huang Chen, Department of Obstetrics and Gynecology, Tri-Service General Hospital, 325, Sec 2, Cheng-Gong Road, Taipei 114, Taiwan, Republic of China. Tel: +886-2-8792-7205; Fax: +886-2-8792-7207; E-mail: wishviva@yahoo.com.tw

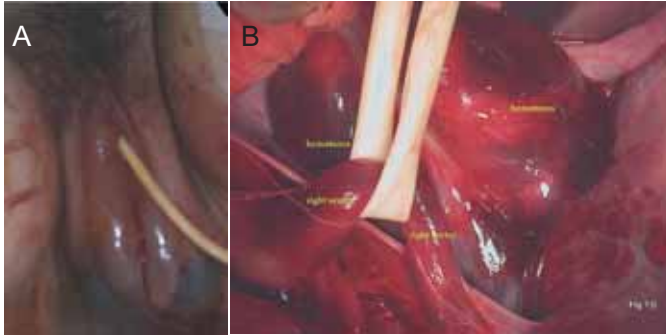


Fig. 1 (A) Vulvar hematomas presenting approximately 12 hours after delivery. (B) The right ureter has been extracting by drainage tube, and hydroureter was noted.

ureters (Fig. 1B) were freed from the compressive hematoma, with immediate resolution of the patient's obstructive uropathy. The perineal hematoma reabsorbed within one week.

DISCUSSION

Puerperal hematomas are classified as vulvar (involving branches of the pudendal artery), vulvovaginal, vaginal (involving the descending branch of the uterine artery) or subperitoneal. They might involve branches of the uterine artery or other vasculature in the broad ligament. Their location will often determine the clinical presentation, blood loss and treatment alternatives¹. The incidence of puerperal hematomas has been reported at between 1 in 309 to 1 in 1500 deliveries, with large hematomas complicating approximately 1 in 4000 vaginal deliveries^{1,3,4}. Moreover, 85-93% of cases arise from an episiotomy, with the mediolateral type possibly presenting a greater risk^{1,5,6}. Vascular injury can be immediate—resulting from failure to recognize and repair an injured vessel—or delayed, caused by pressure necrosis and rupture of a vessel with subsequent hematoma formation³. Puerperal hematomas are usually diagnosed as tender masses of varying size with skin discoloration and excruciating pain. Left untreated, such hematomas might extend cephalad between the folds of the broad ligament. Because the perivaginal space and ischiorectal fossa are limited by soft tissue, a significant quantity of blood can accumulate before signs or symptoms develop. Therefore, blood loss is often underestimated and intervention in these cases is recommended.

Management of puerperal hematomas is controversial and no scientific data exists to support a uniform approach⁶. Clinically significant hematomas, usually considered as those that require surgical intervention, are reported to

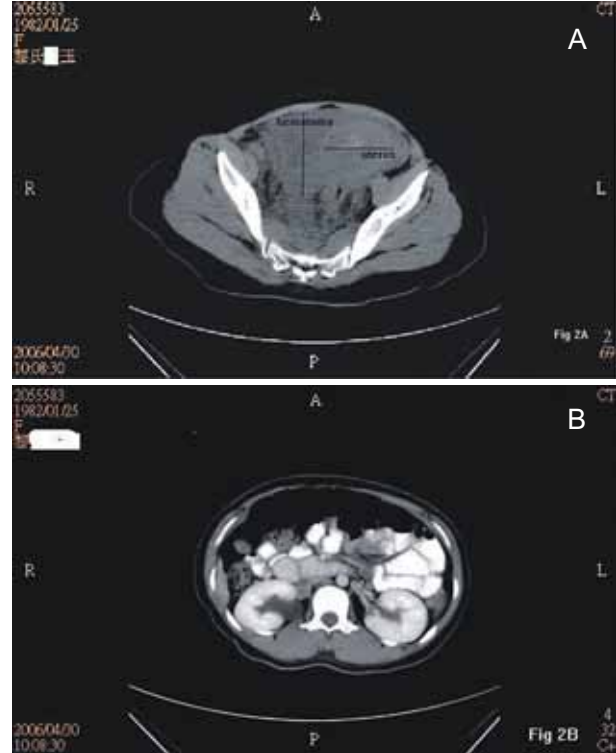


Fig 2 (A) A heterogeneous density mass with retroperitoneal hematoma. (B) Hydroureter, bilateral.

occur in 1 in 900 to 1 in 4000 deliveries^{3,4,7} and conservative management of larger hematomas can result in local infection, septicemia, pressure necrosis, profuse hemorrhage and even death. Although the criteria for what constitutes a clinically significant hematoma is not consistent with respect to size or volume⁷, some authors suggest that observation alone is appropriate for small hematomas, particularly those less than 3 cm in diameter^{4,6}. However, such hematomas often require laparotomy if they are associated with significant retroperitoneal extension.

In the presence of hemodynamic instability and obstructive uropathy—as in the case described herein—surgical intervention is recommended over conservative measures or vascular embolization given the possibility of unrecognized hematoma extension into the retroperitoneal space.

REFERENCES

1. You WB, Zahn CM. Postpartum hemorrhage: Abnormally adherent placenta, uterine inversion, and puerperal hematomas. *Clin Obstet Gynecol* 2006;49:184-197.

2. Zahn CM, Yeomans ER. Postpartum hemorrhage: pPlacenta accrete, uterine inversion and puerperal hematomas. Clin Obstet Gynecol 1990;33:422-431.
3. Pieri RJ. Pelvic hematomas associated with pregnancy. Obstet Gynecol 1958;12:249-258.
4. Sotto LS, Collins RJ. Perigenital hematomas. Obstet Gynecol 1958;12:259-263.
5. McElin TW, Bowers VM, Paalman RJ. Puerperal hematomas; report of 73 cases and review of the literature. Am J Obstet Gynecol 1954;67:356-366.
6. Sheikh GN. Perinatal genital hematomas. Obstet Gynecol 1971;38:571-575.
7. Zahn CM, Hankins GD, Yeomans ER. Vulvovaginal hematomas complicating delivery. Rationale for drainage of the hematoma cavity. J Reprod Med 1996;41: 569-574.

