

Controlling the uncontrollable: Hayman sutures for uterine atony

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Abstract

Postpartum hemorrhage remains a major cause of maternal morbidity and mortality worldwide, with uterine atony accounting for most cases. We present the case of a 15-year-old primigravid woman who developed refractory uterine atony during cesarean delivery despite uterine massage and intravenous oxytocin administration. Because additional uterotonic agents were unavailable, Hayman compression sutures were applied.

Immediate restoration of uterine tone and effective hemostasis were achieved without blood transfusion or hysterectomy. The patient remained hemodynamically stable and was discharged in good clinical condition. This image highlights the characteristic appearance of Hayman compression sutures and underscores their role as a simple, fertility-preserving surgical option for the management of refractory uterine atony.

Keywords: Postpartum hemorrhage, uterine atony, Hayman suture, uterine compression suture, cesarean delivery, obstetric hemorrhage.

Case presentation

A 15-year-old primigravid woman at 40 weeks' gestation presented with uterine contractions associated with headache and vomiting. Physical examination demonstrated a viable singleton fetus in cephalic presentation with a fetal heart rate of 135 beats/min.

Admission laboratory tests revealed hemoglobin 11.0 g/dl, hematocrit 33.7%, platelet count $292 \times 10^3/\mu\text{l}$, normal coagulation parameters, and preserved renal and hepatic function.

Continuous fetal monitoring demonstrated persistent fetal heart rate decelerations to 100 beats/min, prompting emergency cesarean delivery under spinal anesthesia. A healthy female neonate weighing 3,390 g was delivered with Apgar scores of 8 and 9 at one and five minutes, respectively.

Following placental delivery, severe uterine atony developed despite uterine massage and administration of intravenous oxytocin (20 IU). Additional uterotonic agents were unavailable. Because persistent uterine relaxation continued, Hayman uterine compression sutures were placed using No. 1 chromic catgut. Immediate restoration of uterine tone and hemostasis were restored immediately (**Figure 1**).

Estimated blood loss was approximately 700 ml. The patient remained hemodynamically stable throughout the procedure with a blood pressure of 129/80 mmHg, heart rate of 89 beats/min, and oxygen saturation of 98%. Postoperative hemoglobin was 9.5 g/dl and hematocrit was 29.1%. Blood transfusion was not required. The patient was monitored in the obstetric critical care unit for 24 hours and was discharged in good clinical condition.

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Discussion

Postpartum hemorrhage remains one of the leading causes of maternal mortality worldwide, with uterine atony accounting for approximately 70–80% of cases. (1) Initial management consists of uterine massage and administration of uterotonic agents. When these measures fail, conservative surgical techniques should be considered before hysterectomy, particularly in young women wishing to preserve fertility. (2)

The Hayman compression suture, first described in 2002, is a modification of the B-Lynch technique that produces anteroposterior uterine compression, reducing uterine blood flow while promoting myometrial contraction and hemostasis. (3) Unlike the B-Lynch suture, the Hayman technique can be performed rapidly without reopening the uterine cavity, making it particularly useful during cesarean delivery.

Reported success rates exceed 80% in controlling hemorrhage caused by uterine atony and significantly reduce the need for emergency peripartum hysterectomy. (4,5) The intraoperative image presented in **Figure 1** demonstrates the characteristic appearance of the Hayman compression sutures after successful uterine compression, whereas **Figure 2** illustrates the surgical steps required to achieve hemostasis.

Hayman compression sutures provided rapid and effective control of postpartum hemorrhage secondary to refractory uterine atony, avoiding hysterectomy and preserving future fertility in an adolescent patient.

Clinical significance

Early implementation of uterine compression sutures may be life-saving in cases of refractory uterine atony and represents a valuable fertility-preserving alternative, particularly in resource-limited settings.

Conflict of interest

The authors declare no conflicts of interest.

Funding

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Informed consent

Written informed consent was obtained from the patient and her legal guardian for publication of this case and accompanying images.

Artificial intelligence disclosure

Figure 2 was generated using OpenAI image-generation tools and subsequently reviewed and edited by the authors to ensure scientific accuracy.

Figure 1. Intraoperative photograph demonstrating successful uterine compression following placement of Hayman compression sutures for refractory uterine atony during cesarean delivery

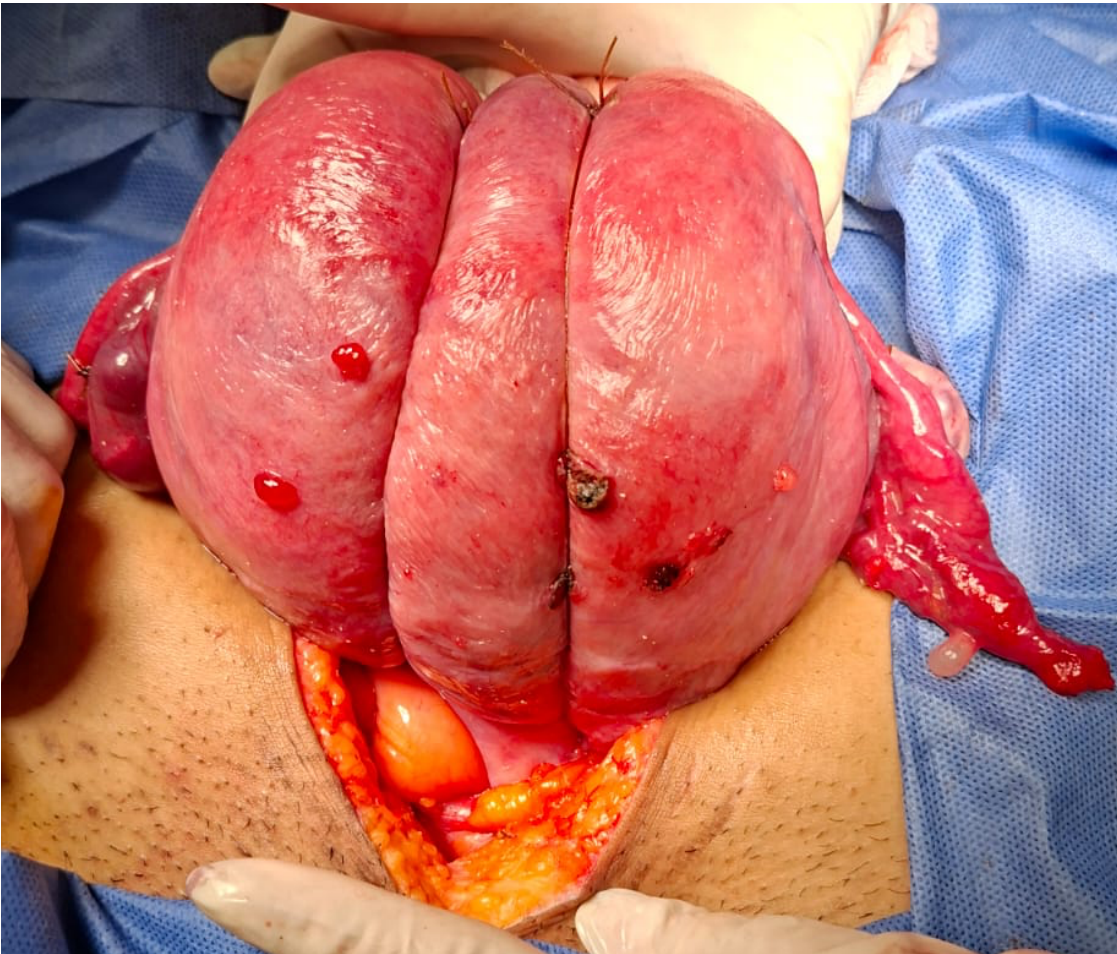
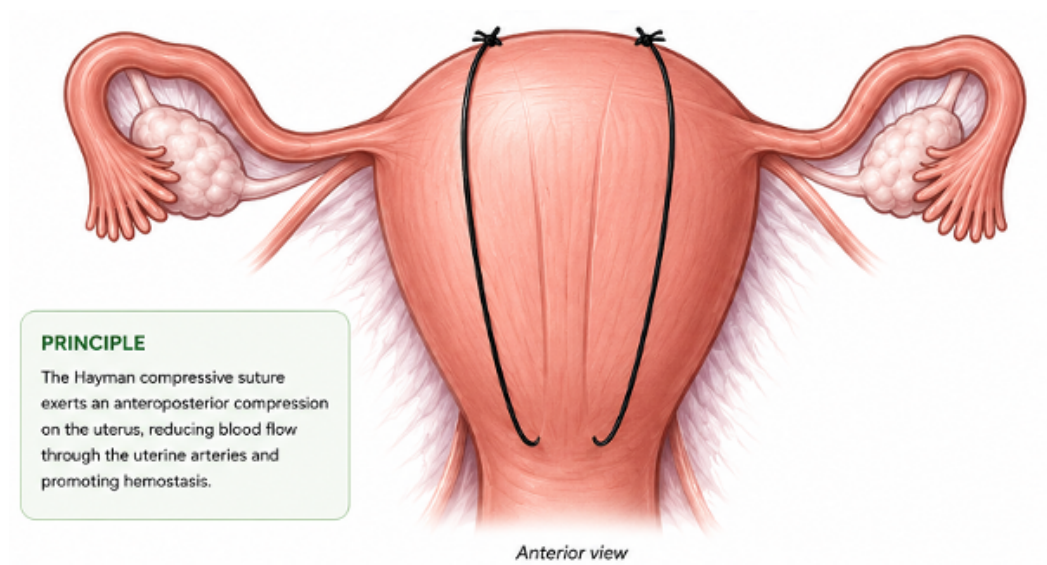


Figure 2. Schematic illustration of the Hayman compression suture technique showing suture placement, uterine fundus compression, and achievement of uterine hemostasis



This educational illustration was generated using artificial intelligence and subsequently reviewed and edited by the authors for scientific accuracy.

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