

# Short interpregnancy interval after B-Lynch uterine compression suture: a case report

A. Nishikawa, S. Matsuzaki, K. Mimura, T. Kanagawa, T. Kimura

Department of Obstetrics and Gynecology, Osaka University Graduate of Medicine, Osaka (Japan)

## Summary

**Purpose:** The influence of the B-Lynch suture technique on subsequent fertility and pregnancy outcomes is not clear. In the present report, the authors describe the case of a very short interpregnancy interval following the successful placement of a B-lynch suture and discuss the associated problems. **Materials and Methods:** A 33-year-old-woman underwent cesarean section after undergoing artificial induction of labor and subsequent atonic postpartum hemorrhage. Placement of a B-Lynch brace suture successfully stopped the bleeding and preserved the uterus. The patient became unexpectedly pregnant only four months later, making the present case the shortest reported interpregnancy interval after a surgery involving the B-Lynch suture. **Conclusion:** In the present case, fertility was not affected, and obstetric complications (abortion, fetal growth restriction, preterm delivery, and placenta previa) were not observed. Adhesions between the abdominal wall and the surface of the uterus along the previous B-Lynch suture line were observed and irregular, large blood vessels were observed on the surface of the uterus. Further reports are expected to determine the influence of the B-Lynch brace suture technique on the subsequent pregnancy.

**Key words:** Postpartum hemorrhage; Cesarean section; Uterine atony.

## Introduction

Postpartum hemorrhage is an obstetrical emergency that occurs in 4–6% of live births [1, 2]. Since the introduction of the B-Lynch suture technique in 1997, uterine compression sutures have been recognized as useful methods for the management of postpartum hemorrhage and for avoiding the need of a hysterectomy [3, 4]. However, the influence of these types of suture techniques on subsequent fertility and pregnancy outcomes remains unclear [3, 4]. Here, the authors describe the case of a very short interpregnancy interval following the successful placement of a B-Lynch suture (both pregnancies were treated by the same obstetrician) and discuss the potential complications as mentioned above.

## Case Report

A 33-year-old-woman (gravida 1, para 0) was referred to the present hospital for prenatal care. The patient's pregnancy was uneventful, and fetal growth was appropriate for the gestational age. The patient underwent induction of labor at 41 weeks of gestation because of prolonged pregnancy. A cesarean delivery was performed because of labor arrest, and a healthy female infant with a birth weight of 3,974 grams was successfully delivered. Blood loss during the delivery was approximately 1,500 ml, and postpartum hemorrhage secondary to uterine atony was diagnosed. When uterotonic agents (20 units per hour of intravenous oxytocin, 0.2 mg of methylergometrine were administered intramuscularly, and rectal 400 micrograms misoprostol) failed to stop

the bleeding, the placement of a traditional B-Lynch suture arrested the hemorrhage effectively. After surgery, the patient had an uncomplicated postoperative course and was discharged seven days later in good condition. At a postnatal visit one month after delivery, she reported no complications, and an almost normal-sized uterus was observed on transvaginal ultrasonography.

Four months after the cesarean delivery, a new unplanned pregnancy was diagnosed. The pregnancy was uneventful, without fetal growth restriction. Because of the previous cesarean delivery, a subsequent cesarean delivery was performed at 38 weeks of gestation, and a healthy female infant with a birth weight of 3,044 grams was delivered. As shown in Figure 1A, adhesions between the abdominal wall and the surface of the uterus along the previous B-Lynch suture line were observed. Furthermore, as shown in Figure 1B, irregular, large blood vessels could be observed on the surface of the uterus. These vessels were not observed in the primary cesarean section. No adhesions were observed along the posterior wall of the uterus. Intravenous oxytocin was administered, and the total blood loss was 1,000 ml. Once again, the woman had an uncomplicated postoperative course and was discharged seven days later in good condition.

## Discussion

The B-lynch suture to control postpartum hemorrhage was first described in 1997 [5]. Since then, many researchers have devised various uterine compression sutures [4, 6-8]. Uterine compression sutures, such as the B-Lynch, are useful methods for the treatment of postpartum hemorrhage without major complications, but the influence of this

Revised manuscript accepted for publication December 15, 2014

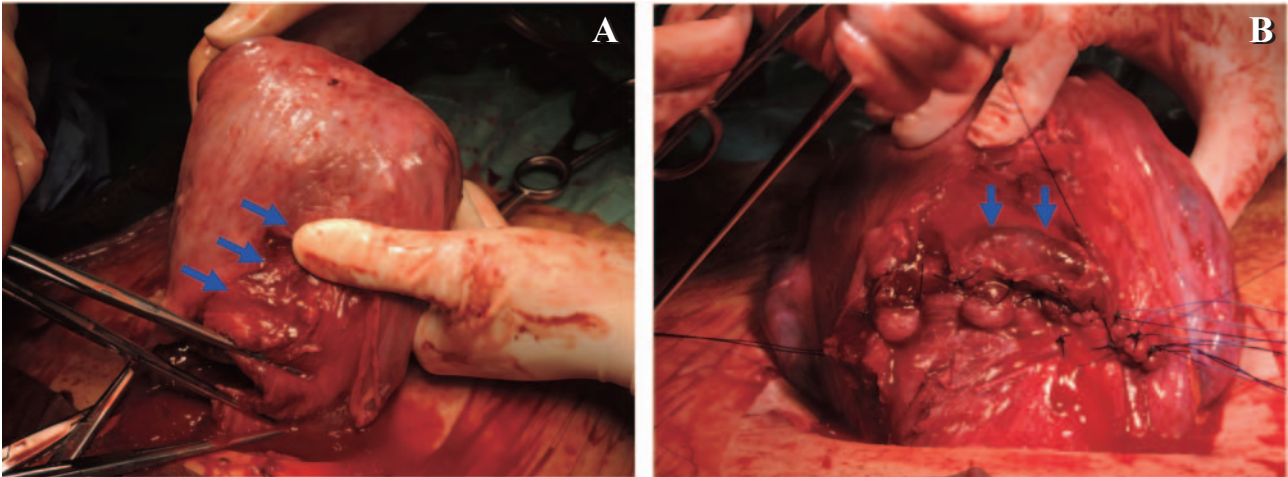


Figure 1. — A) Adhesions between the abdominal wall and the surface of the uterus are observed. Blue arrows indicate where the adhesions were separated. B) An irregular large blood vessel is observed on the uterine surface, indicated by blue arrows.

type of sutures on subsequent fertility and pregnancy outcomes remains unclear [4]. Some studies have reported that uterine compression sutures do not appear to adversely affect menstrual and fertility outcomes in most women [9, 10]. However, one study reported the higher prevalence of infertility after a B-Lynch suture [11]. The cause of infertility was considered to be intrauterine adhesion. Both the quantity and quality of the available evidence are limited. In the present case, the subsequent pregnancy occurred only four months after the procedure, suggesting that the B-Lynch suture had no adverse effect on menstrual health and fertility in the present case.

Recently, although the numbers of examined cases were still small, obstetric complications of pregnancies occurring after the B-Lynch suture were reported [11]. These authors investigated 30 cases of pregnancies after the B-Lynch suture and reported a higher incidence of abortion, preterm labor, and placenta previa. Although, no obstetric complications were observed in the present case, further reports are expected to reveal the effects of the B-Lynch suture in the subsequent pregnancy.

To determine the relationship between B-Lynch suture placement and intra-abdominal adhesions in the subsequent cesarean delivery, the present authors analyzed previous reports. Five case reports that described cesarean delivery after B-Lynch suture were found in the literature [3, 5, 12, 13]. None of the pregnancies had major complications. Two reports indicated that adhesions were found along the previous B-Lynch suture line [12, 13], and in another report only omental adhesions were found on the anterior surface of the uterus [3]. In the present case, adhesions were observed between the abdominal wall and the surface of the uterine wall along the previous B-Lynch suture line. The adhesions were not severe in any of these cases, including

the present. A recent report indicated that uterine adhesions observed during the subsequent cesarean delivery were significantly more prevalent in women who underwent uterine compression sutures than in women who did not, although the types of compression sutures examined in this study did not include the traditional B-Lynch suture [14]. Further study is needed to explore the association between adhesions and B-Lynch sutures.

In the present case, the reason for the irregular, large vessels observed along the uterine surface is unknown, and similar findings were not previously reported. The patient had no large vessels visible in the anterior uterine wall at the time of her previous cesarean delivery; therefore, the change could be attributed to vessel compression due to the B-Lynch suture.

## Conclusion

In summary, to the best of the authors' knowledge, they have presented a case of the shortest interpregnancy interval after a B-Lynch suture reported to date. In this case, the B-Lynch suture had no adverse effects on the patient's menstrual health and fertility, but it was associated with the development of adhesions along the B-Lynch suture line and enlarged blood vessels in the uterine wall.

## References

- [1] Mousa HA, Alfirevic Z.: "Treatment for primary postpartum haemorrhage". *Cochrane Database Syst. Rev.*, 2007, 24, CD003249.
- [2] Matsuzaki S, Yoshino K, Kumasawa K, Satou N, Mimura K, Kanagawa T, *et al.*: "Placenta percreta managed by transverse uterine fundal incision with retrograde cesarean hysterectomy: a novel surgical approach". *Clin. Case Rep.*, 2014, 2, 260. doi: 10.1002/ccr3.108. Epub 2014 Sep 4.

- [3] Gerli S., Favilli A., Giordano C., Pericoli S., Laurenti E., Di Renzo G.C.: "Fertility after "only B-Lynch" suture: a case report and literature review". *Taiwan J. Obstet. Gynecol.*, 2013, 52, 110.
- [4] Mallappa Saroja C.S., Nankani A., El-Hamamy E.: "Uterine compression sutures, an update: review of efficacy, safety and complications of B-Lynch suture and other uterine compression techniques for postpartum haemorrhage". *Arch. Gynecol. Obstet.*, 2010, 281, 581.
- [5] B-Lynch C., Coker A., Lawal A.H., Abu J., Cowen M.J.: "The B-Lynch surgical technique for the control of massive postpartum haemorrhage: an alternative to hysterectomy? Five cases reported". *BJOG*, 1997, 104, 372.
- [6] Matsubara S., Yano H., Ohkuchi A., Kuwata T., Usui R., Suzuki M.: "Uterine compression sutures for postpartum hemorrhage: an overview". *Acta. Obstet. Gynecol. Scand.*, 2013, 92, 378.
- [7] Enriquez M., Maruri G., Ezeta G., Hidalgo L., Perez-Lopez F.R., Chedraui P.: "The B-Lynch technique for the management of intraoperative uterine atony". *J. Obstet. Gynaecol.*, 2012, 32, 338.
- [8] Matsubara S., Kuwata T., Baba Y., Usui R., Suzuki H., Takahashi H., et al.: "A novel 'uterine sandwich' for haemorrhage at caesarean section for placenta praevia". *Aust. N. Z. Obstet. Gynaecol.*, 2014, 54, 283.
- [9] Doumouchsis S., Nikolopoulos K., Talaulikar V., Krishna A., Arulkumaran S.: "Menstrual and fertility outcomes following the surgical management of postpartum haemorrhage: a systematic review". *BJOG*, 2014, 121, 382.
- [10] Fuglsang J.: "Later reproductive health after B-Lynch sutures: a follow-up study after 10 years' clinical use of the B-Lynch suture". *Fertil. Steril.*, 2014, 101, 1194.
- [11] Rasheed S.M., Amin M.M., Abd Ellah A.H., Abo Elhassan A.M., El Zahry M.A., Wahab H.A.: "Reproductive performance after conservative surgical treatment of postpartum hemorrhage". *Int. J. Gynaecol. Obstet.*, 2014, 124, 248.
- [12] Habek D., Vranjes M., Bobic Vukovic M., Valetic J., Kremer V., Simunac J.: "Successful term pregnancy after B-Lynch compression suture in a previous pregnancy on account of massive primary postpartum hemorrhage". *Fetal. Diagn. Ther.*, 2006, 21, 475.
- [13] Vitthala S., Misra P.K.: "Fertility after B-Lynch suture in a patient previously treated for acute myeloid leukaemia". *Eur. J. Obstet. Gynecol. Reprod. Biol.*, 2008, 136, 133.
- [14] An G.H., Ryu H.M., Kim M.Y., Han J.Y., Chung J.H., Kim M.H.: "Outcomes of subsequent pregnancies after uterine compression sutures for postpartum hemorrhage". *Obstet. Gynecol.*, 2013, 122, 565.

Address reprint requests to:  
 S. MATSUZAKI, M.D.  
 Department of Obstetrics and Gynecology  
 Osaka University Graduate School of Medicine  
 2-2 Yamadaoka, Suita  
 Osaka 565-0871 (Japan)  
 e-mail: zacky@gyne.med.osaka-u.ac.jp