

Obstetrical outcome after B-Lynch sutures and ligation of uterine arteries: A case report

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ABSTRACT

Objective: To illustrate the obstetrical outcome after B-Lynch sutures and ligation of the uterine arteries.

Case: A 26-year-old nulliparous woman. A caesarean section performed for obstructed labour was complicated by uterine atony. A B-Lynch uterine compression suture technique was used combined with ligation of the ascending branches of the uterine arteries. Before the subsequent fertility treatment, gel instillation sonography and power Doppler imaging showed a normal uterine cavity and restored myometrial vascularization. Subsequent caesarean section showed external adhesions on the anterior uterine serosa. A healthy baby of normal weight was delivered. There was focal placenta accreta; the underlying myometrium was strikingly thinner and prone to inversion.

Discussion: After B-Lynch sutures and ligation of the ascending branches of the uterine arteries, the pregnancy was subsequently uncomplicated. The potential association between B-Lynch sutures and placenta accreta or uterine inversion in a subsequent pregnancy has to be assessed in further studies. This case report illustrates how 3D gel instillation sonography is a valuable tool to evaluate the integrity of the uterine cavity.

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1. Introduction

Postpartum haemorrhage (PPH) remains one of the main causes of maternal mortality. It occurs in approximately 4% of vaginal deliveries and 6% of caesarean sections. [1] The most common cause of PPH is uterine atony. [2] The primary management of PPH consists of emptying the bladder, uterine massage and prompt pharmacological treatment including uterotonic agents and tranexamic acid. [3–6] If conservative management fails, surgery is indicated. The B-Lynch suture technique for uterine compression was first reported in 1997 [7] and can be combined with ligation of the uterine or internal iliac vessels. [8–10] Subsequent successful pregnancies have been described [11–13], but synechiae may develop, compromising future fertility. [14,15]

This report was approved by the ethical board of University Hospitals UZ Leuven. The patient gave informed consent.

2. Case Presentation

A 26-year-old nulliparous woman (G2A1) was admitted at a gestational age of 39 weeks and 2 days, with renal colic due to nephrolithiasis. In her obstetric history, she had had one early spontaneous miscarriage requiring curettage. The current pregnancy resulted from artificial

insemination with donor sperm (AID). Labour was induced, but at 7 cm of dilation a caesarean section was performed for obstructed labour.

A healthy daughter weighing 3540 g was born. The caesarean section was complicated by refractory uterine atony. Uterine massage and the administration of oxytocin, carboprost 25 mg (intramyometrial) and methylergometrine 0,2 mg did not lead to any improvement in the uterine tonus. Two B-Lynch sutures were applied using polyglactin 910 stitches (Ethicon Vicryl® 1). The ascending branches of both uterine arteries were also ligated. The total blood loss was estimated at 1400 ml. The postoperative recovery was uneventful and the patient left the hospital 5 days postoperatively.

One year after the caesarean section the patient started a new fertility program. A 3D gel instillation sonography showed an anteverted uterus with a slight retrograde deflection towards the fundus. The endometrial thickness was 5.1 mm. The section scar was visible; however, no myometrial defect was observed. The myometrium appeared homogeneous. At gel instillation sonography using Instillagel® (FarcoPharma GmbH, Köln, Germany), the uterine cavity appeared normally shaped (Fig. 1) and there were no synechiae. The uterine artery blood flow at both sides appeared normal, with a peak systolic velocity of 60 cm/s.

After 3 unsuccessful inseminations, the fertility centre switched to in vitro fertilization and the patient was pregnant after the third embryo transfer. The pregnancy was uncomplicated. A planned caesarean section was performed at a gestational age of 37 weeks and 4 days. There were numerous intra-abdominal adhesions, mainly on the anterior

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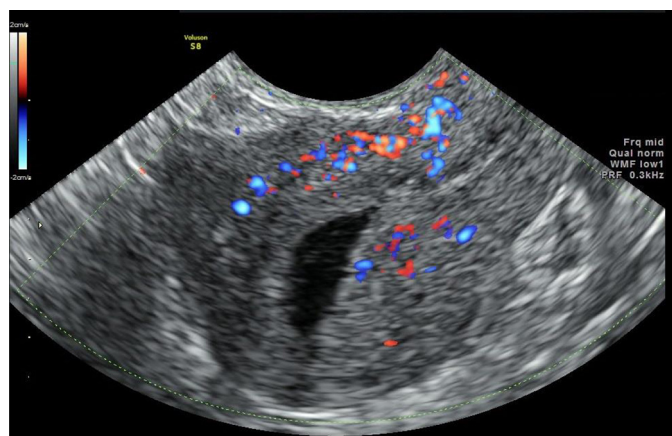


Fig. 1. Gel instillation sonography, longitudinal view: anteverted uterus with a slight retrograde deflection, normal vascularization of the myometrium.

side of the uterus. A healthy daughter weighing 3505 g was born. Carbetocin 100 µg intravenously and carboprost 25 mg intramuscularly were given preventively. Peroperatively, the uterine cavity felt regular without any synechiae. The placenta needed to be manually removed as there appeared to be placenta accreta at the left side of the fundus, causing initial inversion at each attempt at controlled cord traction. The overlying myometrium appeared to be very thin at the focus of the abnormally adherent placenta.

3. Discussion

This report confirms the efficacy of B-Lynch sutures and bilateral ligation of the ascending branches of the uterine artery in uterine atony. As evidenced by gel instillation sonography and colour Doppler imaging one year after surgery, the uterine cavity remained intact without synechiae, and patency of both uterine arteries was restored, allowing implantation and normal foetal growth. [16] Although the occurrence of a partial placenta accreta with focal weakness in the myometrium may have been related to the B-Lynch procedure, other procedures involving trauma of the endometrium and the junctional zone, such as caesarean section or curettage may also result in abnormal placentation. Cowan et al. showed no increased risk of abnormal placentation in subsequent pregnancy after B-Lynch sutures. [17] The adhesions at subsequent caesarean section seemed to be predominantly located where the B-Lynch suture knots had been. Although the association with the Vicryl sutures remains hypothetical, multifilament sutures, used for their higher tensile strength and flexibility, may cause more tissue trauma and may increase the risk of infection. [18]

We recommend the use of 3D gel instillation sonography and power Doppler imaging to evaluate the uterine cavity and revascularization, 3 to 12 months after performing B-Lynch sutures with or without bilateral ligation of the uterine arteries. In subsequent pregnancies, special attention should be given to the evaluation of the placenta to rule out invasive placentation. To date, it has not been proven that a history of B-Lynch sutures is a risk factor for additional surgical trauma in caesarean section [19,20] Likewise, whether B-Lynch sutures increase the risk of uterine inversion remains unclear. As in all patients with a history of postpartum haemorrhage, precautions should be taken during delivery, including the prophylactic use of uterotonics and the availability of packed cells on stand-by.

Contributors

S Vanwinkel drafted the article.
L Claes contributed to the revision of the article.
T Van den Bosch contributed to the revision of the article.

Conflict of Interest

The authors declare that they have no conflict of interest regarding the publication of this case report.

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Patient Consent

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Provenance and Peer Review

This case report was peer reviewed.

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