Is Uterine Compression Suture for Postpartum Hemorrhage safe? A Case report

ABSTRACT

The main cause of postpartum hemorrhage (PPH) is uterine atony.Uterine compression suturing is a common technique to control PPH at cesarean delivery. Here, we report a complication of this method for atony post-delivery.

A 27 years old primigravida woman with term pregnancy underwent cesarean delivery, and because of uterine atony unresponsive to medical therapy and uterine artery ligation, two compression sutures were placed on the uterus. But after 11days, our patient underwent surgery again, due to severe fever, infection and necrotic mass in the uterine cavity. During operation, we removed the necrotic mass.

Although uterine compression suture is an effective method for the treatment of PPH, in our study we have reported someside effects specially necrosis of myometrium in this technique.

Keywords: Postpartum hemorrhage, surgical treatment, Suture Techniques, uterine atony

Introduction

Postpartum hemorrhage (PPH) is one of the most common cause of maternal morbidity and mortality all over the world(1). The main cause of PPH is uterine atony. The treatment of uterine atony includes medical therapy and surgical treatment (2).Among different techniques to manage the PPH,uterine compression sutures -especially B-Lynch suture- hasthe most popularity and many studies have evaluated its efficacy. Although most studies have shown no complications for compression sutures, in this report, we present a case of uterus atony treated with B-Lynch suture that hadcomplications of postoperative abscess inside the myometrium.

Case Report

A 27 years old primigravida woman with term pregnancy in active phase of labor was admitted. On admission to hospital, cervical examination included dilatation 5cm, effacement 60% and station -2, the vital signs were normal and she had no medical and surgical history. Dilatation became full within 3hours with spontaneous contractions, but after 2 hours she underwent cesarean section due to transverse arrest. Because of mild atonyduring cesarean, we administered high dose of oxytocin and rectal misoprostol. The abdominal wall was closed and the patient was transferred to the recovery with good general status. After 3 hours of complete care, she was transferred to the obstetrics ward.

The patient had again uterine atony and vaginal bleeding 6 hours after the operation.Despite uterus massage and readministration of oxytocin and misoprostol, hemorrhage continued, so she was candidate for relaparotomy 9 hours after cesarean. But, due to no response and continuing bleeding, uterine was opened by Kerr incision. The uterine was packed with a long gauze and again B-Lynch suture and a cyclic suture in uterine isthmus were placed to preserve the uterine. We opened Kerr incision of uterus and packed inside of uterine by long gauze.Afterward, due to continuing bleeding we used B-Lynch suture.

After bleeding cessation, the abdominal wall was closed and the patient was admitted to the hospital ICU with tertiary care.

In the ICU, the patient's general condition was good and she had no vaginal bleeding. The patient’s tests in the ICU included PLT=30000, WBC=21.000, ALT=260, AST=300, INR=4, Cr=1.

Long gauze was removed through the vagina 36 hours after the surgery. After 3days, regarding to high fever, antibiotics including meropenem and vancomycin were started for the patient. Breast and abdominal examinations and Chest X-Ray were normal.Beside,no organism was grownin the blood culture.

All patients' tests were improved 6days after surgery and she was discharged without fever and antibiotic therapy. Five days after discharge, the patient was rehospitalized with a high fever (T=40°c), PR=130, and BP=100/60. Fundal height was 24 weeks. In bimanual examination, she had irregular, and tender uterus cervix was open, but did not have vaginal bad smell discharge. X-Ray of the abdomen and pelvis were performed to confirm the absence of external object.

CT scan of the abdomen and pelvis reported large uterus and Pea Shape structure with liquid air density that continues to the pelvic floor. In transvaginal ultrasound, we observed some gases in the myometrium and the liquid air level inside the uterus so the patient underwent curettage by guided-sonography. Although the uterus cavity was empty, Brief necrotic myometrial tissue was removed.

According to diagnosis of abscess inside the myometrium, intravenous antibiotics including ampicillin-sulbactam, meropenem, and metronidazole were started for her. After 2days, fever was stopped and she was discharged with a recommendation to continue treatment for up to 3weeks. Two weeks after discharge, the patient referred to the clinic due to T = 38°c.

In vaginal examination, there was necrotic mass with the approximate dimensions of 10x 12cm that was exited from the cervix and was torn during the examination and about 400-300cc smelly pus came out. The results of gram-negative and gram-positive cocci were reported. The patient did not consent to hospitalization and underwent antibiotic experimental regimen. Finally, the patient was examined 4weeks later that the uterine was normal, there was also no abnormality in the sonography of uterine and ovaries.

Discussion

PPH causes approximately 19.1% of mother's death after delivery.In France,1.6 death/100,000 live birthswas reported due to PPH (7).The prevalence of PPH has increased 27.5% from 1995

to 2004. Primarily,the main reason of this increase is high incidence of uterine atony(8).So surgical treatment like compression sutures is used after the failure of medical therapy. Studies have reported the success rate of 91.7% for a variety of compression sutures(9), while according our recent study, we believe that the advantages and disadvantages of therapeutic options even compression sutures should be monitored.

Probably, achievement to successes in compression sutures is related to the protective physiological process in uterus. This means that it can be used in order to rapid involution of uterus within the first postpartum week(10).

Correspondingly, Tsitlakidiset al presented a case with successful pregnancy after PPH during longest follow-up (10 years) (11). Other published data have certified that the B-Lynch surgical technique is secure, advantageous and with lack of short and long-term complication(1,3). However, there are concerns about this technique that include uterine adhesions, partial ischemia, necrosis, infection, and myometra.(9)

Akoury and Sherman reported a healthy 32-year-old woman, gravida 3, para 0. In order to control PPH, they had used 2 Cho and 1 B-Lynch sutures. Subsequently, they identified a large triangular myometrial defect and two smaller defects respectively in the mid-anterior and in the posterior uterine wall(12). Also in the study of Gottlieb et al a 33-year gravida 2, due to uterine atony, received two compression sutures. On the 8th day of postoperative, patient was sent to the operating room for a second time because of high fever antibiotic-resistant. During the laparotomy, they found fundal uterine necrosis in suture place(13). Reyftmann et al has noted a partial uterine necrosis after placement of four Cho sutures to control PPH(14). However, our patient underwent surgery again due to severe fever, infection and necrotic mass in the uterine cavity. During operation, we removed the necrotic mass.

Various materials are used for sutures like Vicryl, PDS (polydioxanone) and nylon. Studies have emphasized on avoiding the use of none or slowly absorbable sutures. (15) Wu et al in

their study have placed multiple square sutures for a primigravida with severe PPH.Consequently, they realized partial obstruction of menstrual flow with uterine synechiae. Hysteroscopy revealed unabsorbed sutures in uterine.(16) In our study, for a primigravida woman we used absorbable sutures. So, experts should use the soluble suture material to reduce the risk of uterine rupture and necrosis in this procedure; however, uterine rupture has been reported during manual compression sutures.(17)

Sentilhes et al observed a case of Asherman syndrome with obliteration of the uterine cavity after placement of B- Lynch sutures, which may lead to temporary or permanent infertility(18).Several cases of successful pregnancy after compression sutures techniques have been reported (19). It is necessary that physicians and patients be aware of the possible complications of using this technique(12).

So, we suggest the postoperative follow-up to establish a national registry of cases with placement of compression sutures. Then we can document the effect of this method on potential fertility, infertility, and menstrual flow, and evaluate the long and short-term complications of this procedure.

However, it is difficult to observe the fertility outcomes of women with compression sutures, because some of them avoid pregnancy due to fear of recurring PPH(19, 20).There is also limited data on women's menstrual period. These defects reveal the need of a database to register the success or failure of the results. Moreover, possible complications of compression suture such as B-Lynch suture will be recorded. (9)

In summary, most studies have pointed the high efficiency and absence of side effects in compression suture such as B-Lynch suture. While in our study and some other similar studies more side effects such as high fever resistant to antibiotics, ischemia and necrosis of the uterus, uterine adhesions, etc**.** has been shown.

According to inconsistencies, it is necessary to follow the women who were underwent compression sutures. Besides,prospective studies are recommended. Therefore, we can collect reliable data in order to assess the short and long term effects of this technique, and then to answer critical questions that whether it affects the future potential fertility?

Conclusion

Although uterine compression suture is an effective method for the treatment of PPH, the surgeon must consider the side effects of this technique.

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