

Modified B-Lynch technique for the control of massive postpartum hemorrhage

An alternative to hysterectomy

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ABSTRACT

The B-Lynch, brace suture technique is a life saving procedure. It is a simple and safe procedure, which has the advantage of preserving the uterus and thus fertility. The efficacy of the procedure can be assessed immediately and complete hemostasis is obtained in most cases. The special advantage of the B-Lynch technique is that it is an alternative to major surgical procedures such as hysterectomy and internal iliac artery ligation. A modified technique of the B-Lynch embracing suture has been performed in the case reported without any apparent complications.

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Postpartum hemorrhage is a life-threatening emergency in obstetrics.¹ Immediate diagnosis, proper assessment and prompt action are the key to success in dealing with this major problem. Uncontrollable postpartum hemorrhage and its management require a team effort, and for that matter, the whole department needs to be mobilized.^{2,3} Massive blood transfusion and surgical skills are also required. Five percent of vaginal deliveries may lead to life threatening postpartum hemorrhage with a loss of more than one litre.¹ The common causes of severe postpartum hemorrhage include: uterine atony, lower genital tract lacerations, retained placenta and placental fragments, coagulopathy, uterine inversion and ruptured uterus. Available methods of management range from bimanual compression, pharmacological preparations such as oxytocin, and the use of prostaglandin analogues.⁴ The surgical method varies depending on the site of bleeding, the severity of the condition and the cardiovascular stability of

the patient.^{5,6} Various surgical methods have been described: such as surgical ligation of uterine arteries and internal iliac artery ligation.⁷⁻¹⁰ The B-Lynch technique has elaborately been described.¹¹ B-Lynch in this technique, applied 2 embracing sutures connected together at the lower end of the uterus. In the modified technique adopted in this case, 4 embracing sutures, 2 centimeters apart were tied separately at the lower end of uterus.

Case Report. A 35-year-old patient was admitted to the emergency room of King Faisal Armed Forces Hospital Programme with vaginal bleeding and retained placenta. She had an unassisted spontaneous vaginal delivery at home. This was her seventh delivery; the previous 6 deliveries were normal hospital deliveries. On arrival to the Emergency Room she was stable with minimal bleeding and her hemoglobin was 11.5 g/dl. She was transferred to the labor and delivery suite and attempts were made to deliver the placenta

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Figure 1 - Anterior view of uterus showing modified B-Lynch technique with 4 embracing compressing sutures.

by continuous cord traction, which failed. Manual removal of the placenta under general anesthesia was planned. Two units of whole blood were prepared before the procedure. Under general anesthesia, manual removal of the placenta was performed and the placenta and membranes were delivered complete. The uterus remained relaxed with continuous bleeding which prompted whole blood transfusion. A modified B-Lynch procedure was performed in which 4 brace sutures were applied, two centimeters apart. This was a modification from the procedure described by B-Lynch et al¹² in which only 2 brace sutures were applied. The four brace sutures maintained good compression, which successfully controlled the bleeding (Figure 1).

Discussion. Massive postpartum hemorrhage is an important cause of maternal mortality.^{1,2,8,9} In England and Wales, out of the 277 deaths occurring during pregnancy or before 42 days postpartum, 22 were attributable to postpartum hemorrhage.^{2,9,10} In most cases of uterine hypotonia with massive postpartum hemorrhage and failure of other methods, hysterectomy or ligation of the internal iliac arteries is recommended.^{3,5,7} The use of uterine tamponade in the management of severe postpartum hemorrhage is debatable.^{4,6} Bilateral ligation of the internal iliac arteries may have serious complications resulting from injury of the internal iliac veins or accidental ligation of the external iliac artery. The B-Lynch technique and its modified version used here, is a simple and effective

procedure with conservation of the uterus for future fertility in the childbearing age group of patients. The modified technique also has the advantage of avoiding overlapping of the sutures and strangulation of the intestines. Successful pregnancy has been reported by B-Lynch. When advanced surgical techniques are not available, the choice will be for B-Lynch or its modified version used here. The brace sutures and compression in this technique will succeed in complete control of the hemorrhage especially in cases of the uterine hypotonia, with no evidence of blood accumulation within the uterine cavity as detected by ultrasound postoperatively.

In conclusion, the B-Lynch and its modified brace or compression technique, is a simple procedure, which requires basic surgical skills. In the child bearing age group of patients, fertility is preserved by avoiding hysterectomy. The procedure is most successful in postpartum hemorrhage resulting from uterine hypotonia when local procedures fail to control the bleeding.

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