

Uterine Compression Suture Technique in the Management of Severe Postpartum Haemorrhage as an Alternative to Hysterectomy

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SUMMARY

Introduction One of the most dramatic conditions in obstetrics is definitely bleeding from the uterus which fails to compress. This condition is known as postpartum atony. When such a condition is diagnosed, the obstetrician has a choice of several conservative methods to stimulate the uterus to contract and several surgical methods to stop the bleeding. The most extreme measure used to save the patient's life and stop the bleeding is hysterectomy. This surgery is characterized by high morbidity, primarily by the loss of woman's fertility. In order to avoid hysterectomy, several authors have introduced the compressive uterine suture technique into gynaecological practice.

Objective The aim of the paper is to demonstrate the technique of applying compressive uterine suture after delivery to stop excessive bleeding, and to present results obtained by this technique.

Methods The paper explains the technique of applying compressive suture to the atonic uterus in cases when all other procedures to stop excessive bleeding after delivery fail. Since uterine atony is the main reason for excessive and uncontrollable bleeding after childbirth, the need to perform such surgery is rather common. Authors demonstrate the technique of applying four compressive sutures which prevent uterus dilation and thus stop the bleeding.

Results Compressive suture technique was used by the authors eight times, seven of which during caesarean section and one after spontaneous delivery. All patients had normal postpartum period and normal involution of the uterus.

Conclusion Although this surgery requires a skilful and experienced obstetrician, the authors find it rather easy to perform and it is suggested to be applied in all cases of uterine atony when excessive bleeding cannot be stopped by other any other method except hysterectomy. This surgical procedure saves the uterus and facilitates quick and easy patient's recovery.

Keywords: uterine atony; compressive suture; postpartum hysterectomy

INTRODUCTION

A massive, uncontrolled haemorrhage after childbirth is the leading cause of maternal mortality and morbidity. Uterine atony is the most common cause (28-90%) of primary postpartum haemorrhage [1, 2]. To avoid hysterectomy and stop haemorrhage the obstetricians should undertake several steps [3, 4]. These steps can be performed by a skilful and experienced obstetrician, who can bring the decision within seconds when faced with such a dramatic situation. If the haemorrhage occurs during spontaneous labour it takes some time to diagnose the atonic uterus. Immediately the obstetrician should attempt to stop bleeding by applying conservative methods in order to stimulate the construction of the uterus. If conservative methods fail (massage, tamponade, and application of oxytocic agents) the abdomen should be opened and the ligation of the uterine artery or even hypogastric artery must be done. If all these steps fail the last solution is hysterectomy. Atony during the caesarean section is more obvious. Blood loss is smaller and the obstetrician immediately applies conservative methods (massage, application of oxytocic agents, ligation of uterine artery).

In order to avoid hysterectomy and preserved fertility, five years ago we started to apply compression uterine suture technique. This technique is only solution when all other haemostatic methods fail.

OBJECTIVE

The aim of this paper is to demonstrate the technique of compression uterine suture after delivery to stop excessive bleeding, and to present the gained results.

METHODS

After we have done everything to stop the bleeding and the uterus is still without contraction we apply four compression sutures. The first one we start at the back wall of the uterus from the right sacrouterine ligament, sowing posterior wall of uterus laterally up to its cornu. We skip the cornu and continue the same suture on the right front lateral wall (Scheme 1). When we reach the isthmus of uterus at the level of sacrouterine ligament, we sow through the uterine wall backwards medially of uterine artery, being careful not to pass through uterine cavity. With the needle we come at the same spot from which we began. When we tie the knot, right side of the uterus shrinks. The second suture is done symmetrically on the left side of uterus. After these two sutures only the central part of uterus is still stretched. Two more sutures are applied to press the central part of uterus and completely stop bleeding. The third suture begins also from the right sacrouterine ligament one centimetre medially of the first one. From that spot suture passes on the back wall

of uterus to the left cornu. On the fundus of uterus it goes medially of the second suture. From the left cornu suture goes to the right anterior part of isthmus and through the uterine wall medially of uterine artery is coming backwards at the spot where it began (Scheme 2). Identically on the other side beginning from the left sacrouterine ligament the fourth suture is done.

With these four sutures (Figures 1 and 2) the uterus cannot be stretched and the bleeding stops.

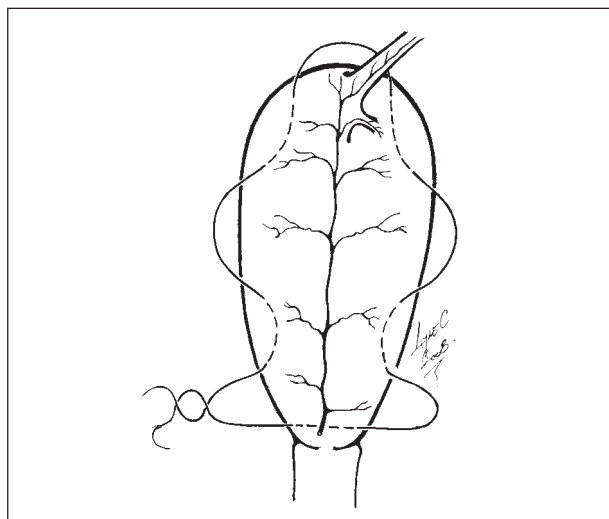
After drainage we close the abdomen.

If the atony occurs during the caesarean section, which is usually the case, we close the opened uterus and then put the four sutures. As the uterus has no contraction, it bleeds all the time, so the assistant should hold it tight in his hands to compress it.

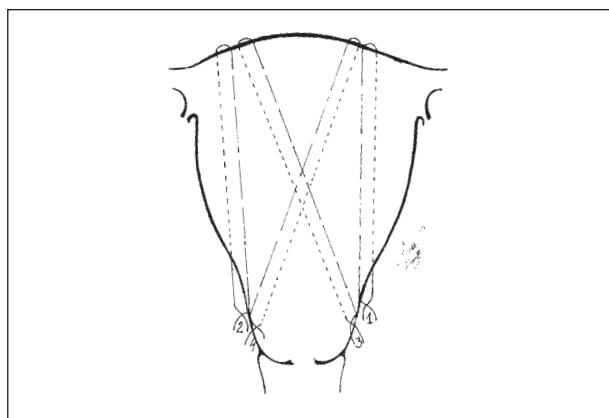
For this surgery we use polyglycolic acid No 2.

RESULTS

From 2004 to 2008, there were 34,229 deliveries. We performed compressive suture eight times, seven during caesarean section and one after spontaneous delivery. All patients had normal postpartum period, and normal involution of uterus. The involution was controlled by ultrasound (Figure 3).



Scheme 1. The method one of four compression suture passes from sacrouterine ligament and finish in the same spot



Scheme 2. Four sutures according to the steps they were applied

DISCUSSION

Heavy haemorrhage after delivery leads to hysterectomy in order to save the life of the mother [2]. This is a high risk surgery for the patient, and there is a loss of fertility. All authors say that the main reason for heavy haemorrhage after delivery is atony [2, 5-8]. As situation is very dramatic and serious and the life of the patient is in danger it is necessary that the most experienced obstetrician performs the surgery. Putting the sutures is not complicated, but it demands a skilful and experienced surgeon [1]. Using this technique the bleeding is stopped at high rate [6, 7]. In our group of patients one became pregnant, but the pregnancy has finished by artificial abortion. As some obstetri-



Figure 1. Uterus with sutures – anterior wall



Figure 2. Uterus with sutures – posterior wall

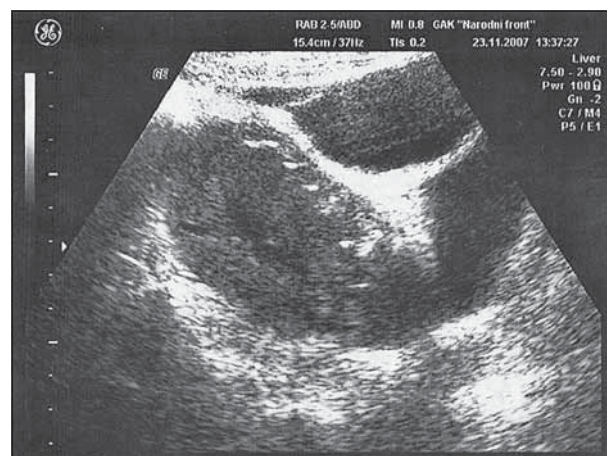


Figure 3. Ultrasound checking seven days after surgery

cians use compression suture when atony occurs, placenta accrete is becoming a leading cause of emergency hysterectomy postpartum [2].

There are different ways of compression suture techniques. It varies from author to author, from three transversal sutures [7] to different number of longitudinal sutures, but all techniques have the same goal, the uterus with compressive sutures that is not bleeding any more. Some authors said that they succeeded to stop bleeding, in atonic uterus, only by suturing uterine artery [5], but we had such experience in small rate.

With this procedure the uterus is saved as well as menstrual function and fertility [8].

Many authors point out that atony occurs during caesarean section [5-8]. That happened with our patients. Although the caesarean section rate is increasing lately, it is not the

caesarean section itself that leads to atony, but the causes that lead to caesarean section. In further clinical investigations the risk factors that lead to caesarean section and atony should be defined. By preventing risk factors the caesarean section rate should decrease as well as the atony and the number of this type of surgery.

CONCLUSION

Although this surgery needs skilful and experienced obstetrician we find it rather easy to perform and it should be applied in each case of uterus with atony when excessive bleeding cannot be stopped otherwise than performing hysterectomy. With this surgical procedure we save the uterus and the patient is recovering quickly and easily.

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Компресивни шав на материци којим се спречава обилно крварење код њене атоније и избегава хистеректомија после порођаја

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КРАТАК САДРЖАЈ

Увод Једно од најтежих стања у акушерству је крварење из материце која се не стеже, познато под именом „атонија после порођаја“. Када се дијагностикује, акушеру је на располагању неколико конзервативних метода којима се материца подстиче на контракцију и неколико хируршких метода за заустављање крварења. Крајња мера којом се спасава живот жене и зауставља крварење је хистеректомија. Ова операција је повезана с великим морбидитетом, првенствено губитком фертилне способности жене. Да би се избегла хистеректомија, неколицина аутора је у гинеколошкој пракси почела да примењује компресивни шав на материци.

Циљ рада Циљ рада је био да се прикажу техника стављања компресивног шав на атоничну материцу после порођаја, како би се зауставило обилно крварење, и постигнути резултати лечења.

Методе рада Компресивни шав на атоничној материци је примењен када су све расположиве могућности заустављања обилног крварења после рођења детета остале без резулта-

та. Како је атонија материце водећи разлог неконтролисаног крварења након порођаја, то је потреба за оваквом операцијом код ових стања релативно честа. Приказана је техника стављања четири компресивна шавова којом се онемогућава растезање материце, чиме се зауставља крварење.

Резултати У периоду 2004-2008. године компресивни шав је постављен код осам породиља: седам пута током царског реза и једанпут након спонтаног порођаја. Код свих испитаница постоперациони ток је протекао нормално, а инволуција материце је била уобичајена.

Закључак Иако примена ове операције захтева увежбаног и искусног акушера, сматрамо да је релативно лака за извођење и треба је примењивати у сваком случају атоније материце када као последње средство заустављања крварења остаје хистеректомија. Овим хируршким поступком се спасава материца, а жени омогућава нормалан и брз опоравак.

Кључне речи: атонија материце; компресивни шав; хистеректомија после порођаја