Mode and Complications of Delivery in Pregnant Women Who Had Used Cervical Cerclage

Assist prof. Dr. Nabella K. yakoob[*1] Sammar Mounther Jamal[*2] Assist prof Dr. Nihad Khalawe Tektook [*3] and Assist prof Dr.Ali Abdul Hussein Mahdi[*4]

[*1&2] Department of obstetriCesarean section and Gynaecology,College of Medicine,Tikrit University-[*3&4] Middle Technical University- Collage of Medical & Health - Baghdad- iraq.

Gmail : drnihadkhalawe@gmail.com

Abstract

Background: A cerclage is used to prevent early changes in a woman's cervix, thus preventing premature labor, but many complications of cerclage may occur such as infections as vaginal discharge due to vulvovaginitis, bleeding, and abortion.aim of study: study the Complications of delivery in pregnant women who had used cervical cerclage.

Subject and method: This A cross sectional study conducted in Obstetri Cesarean section and Gynecology ward and outpatient clinic in Salah Al-Din Teaching Hospital at the period from the first of March 2018 to the end of August 2018. Convenience sample of (120) women in different ages.

Results: The mean abortions number of pregnant women was (2±1); 10% of them had no abortion and 66.7% of them had 1-2 abortions Diabetes mellitus was recorded for one pregnant woman only and hypertension was observed in 10 pregnant women. The venous thromboembolic disease was found in 3 women, while 13.3% of pregnant women were taking drugs in pregnancy53.2% of surgical operations were CSs, cervical surgery or tear 46.8, In previous pregnancy, the GESTATIONAL AGE was less than 37 weeks was observed in 24.4% of pregnant women. Cesarean section was done in 31.7% of previous pregnancies and home delivery was done in 4.2% of previous pregnancies. The current pregnancy outcomes of women were term birth (74.2%), late preterm birth (16.6%), unknown (loss of follow up) (6.7%), miscarriage (1.7%) and early preterm (0.8%. Mode of delivery for current pregnancy was distributed as following; normal vaginal delivery (65%), elective Cesarean section (30.8%) and emergency Cesarean section (4.2%). Maternal complications of pregnant women were none in 17.5%, while the main maternal complications were infection (54.2%), infection and bleeding (11.7%), infection, laceration of cervix and bleeding (3.3%), abortion and infection (2.5%), infection and trauma of cervix (2.5%), infection and slipping or premature rupture of membrane (2.5%), abortion (1.7%).

conclusion: The infection is the common maternal complication after cervical cerclage.

Keywords: Complications; pregnant women; cervical cerclage.

طريقة و مضاعفات الولادة للنساء الحوامل اللاتي خضعن لعملية ربط عنق الرحم

أ.م.د. نبيلة كامل يعقوب ، أ.م.د. سمر منذر جمال ، أ.م.د. نهاد خلاوي تكتوك و أ.م.د. علي عبدالحسين مهدي

الخلاصة

يستخدم التطويق لمنع التغيرات المبكرة في عنق الرحم ، وبالتالي منع الولادة المبكرة ، ولكن قد تحدث العديد من مضاعفات تطويق مثل التهابات و إفرازات مهبلية بسبب التهاب الفرج ، والنزيف ، والإجهاض. تضمنت الدراسة مضاعفات الولادة في النساء الحوامل اللواتي استخدمن تطويق عنق الرحم. المرضى وطريقة العمل : هذه دراسة مقطعية أجريت في قسم التوليد القيصري وجناح أمراض النساء والعيادة الخارجية في مستشفى صلاح الدين التعليمي في الفترة من الأول من مارس 2018 إلى نهاية أغسطس 2018. شملت عينة الدراسة (120) امرأة في مختلف الاعمار. النتائج: كان متوسط عدد حالات الإجهاض للنساء الحوامل (2 ± 1) ؛ 10٪ منهم ليس لديهن إجهاض و 66.7٪ عانين من الاجهاض 1-2 تم تسجيل داء السكري للمرأة الحامل فقط ولوحظ ارتفاع ضغط الدم في 10 نساء حوامل. وقد وجد مرض الانسداد التجلطي الوريدي في 3 نساء ، في حين أن 13.3 ٪ من النساء الحوامل يتناولن العقاقير في فترة الحمل 53.2 ٪ من العمليات الجراحية كانت CSs ، جراحة عنق الرحم 46.8 ، في فترة الحمل السابقة ، كان عمر الحمل أقل من 37 أسبوعا في 24.4 ٪ من النساء الحوامل. تم إجراء العملية القيصرية في 31.7٪ من حالات الحمل السابقة وكانت نتائج للدراسة الحالية هي الولادة (74.2 ٪) ، والولادة المبكرة بنسبة (16.6 ٪) ، غير معروفة (فقدان المتابعة) (6.7 ٪) ، والإجهاض (1.7 ٪) والخدج المبكر (0.8 ٪). تم توزيع الحمل الحالي على النحو التالي: الولادة الطبيعية (65٪) ، العملية القيصرية الاختيارية (30.8٪) والقسم القيصري في حالات الطوارئ (4.2٪). لم تكن المضاعفات للنساء الحوامل سوى في 17.5٪ ، بينما كانت المضاعفات هي العدوى (54.2 ٪) ، والعدوى والنزيف (11.7 ٪) ، وتهتك عنق الرحم والنزيف (3.3 ٪) ، والإجهاض والعدوى (2.5 ٪) ، اما العدوى فقد كانت بنسبة (2.5 ٪) ، والعدوى أو تمزق غشاء بنسبة (2.5 ٪) ، والإجهاض (1.7 ٪). الاستنتاجات بينت الدراسة ان العدوى هي المضاعفات الشائعة للأمهات بعد تطويق عنق الرحم.

الكلمات المفتاحية: المضاعفات ؛ النساء الحوامل ؛ تطويق عنق الرحم

Introduction

Cervical incompetence is defined as the painless dilation of the cervix during the second trimester of pregnancy leading to spontaneous Preterm birth [or late miscarriage) of a live and otherwise healthy fetus. Cervical incompetence affects 0.1 - 2.0% of the global obstetric population and 8% of women with recurrent 2nd trimester losses4,While Cervical cerclage is generally a safe procedure there are a number of potential complications, including:[1]Cervical laceration if labour happens before the cerclage is removed, cervical infection and infection of

amniotic sac (chorioamnionitis), vaginal bleeding and injury to the cervix or bladder, fever and some risk associated with general anesthesia or with regional include vomiting and nausea, cervical dystocia-an inability of the cervix to dilate properly when the time comes (dilate normally in labor) require c-section, cervical stenosis-permanent narrowing of the cervix and displacement of the cervix. premature breakage of the amniotic sac Premature contractions and cervical rupture [may occur if the stitch is not removed before e onset of labor [1].

Patients and methods

Ethical consideration: The study was approved by the ethical committee of the Ministry of health scientific council and Tikrit Medical College. The purpose and procedures explain to all participants and were give the right to participate or not, verbal consent was taken with reassurance that interpret gained will be kept confidentially and not to be used for other research object

Study design and setting: A cross sectional study (convenience sampling) conducted in department of obstetri cesarean section and Gynecology in Salah El-Din teaching hospital at the period from the first of March 2018 to the end of August 2018.

Study subjects

The Study included (120) married women in different ages, with mean age of (31±6) years attending Salah Al-Din Teaching hospital obstetrical ward and gynecological and obstetrical out patients clinic who are willing to participate in this study and available at the time of data collection selected convenience sampling method.

Inclusion criteria: The study included 120 married women in their reproductive age with mean age of (31±6 years) and their parity between 1-6.

Exclusion criteria Pregnant women who did not do cervical Cerclage did not included in this study.

Data collections: - Data was collected from subjects via modifiable questionnaire form put it and modified by assistance of supervisor senior. Questionnaire Iasked the women about their information [socio-demographic, obstetricalhistory indication for cerclage, pregnancy outcome, maternal complications, neonatal outcome and complications, medical and surgical history, and drug history) and their phone number and ask about timing of cerclage[gestational age) , done by who by direct interview between researcher and women after that clinical examination done first I take apermission from the women to do the vaginal examination after explain nature and the cause of the examination. Then women laydown in lithotomy position, by use good light and vaginal speculum to visually inspect the cervix for previous scarring, deformity and length to

ascertain the feasibility of placing atransvaginalcerclage and send to informed ultrasound to confirm viability of fetus and gestation and cervical length. And to ruleout major congenital anomalies and the results recorded.

Statistical analysis:-Data presented by simple tables, the analysed to test significance by using manual statistical analytic methods.

Results: The mean abortions number of pregnant women was (2±1); 10% of them had no abortionand 66.7% of them had 1-2 abortions, these findings were shown in table1

Table 1: The Abortion Distribution among Study sample

Variable	**Number**	**%**
Abortion mean±SD (2 ±1**)**		
No	12	10.0
1-2	80	66.7
≥3	28	23.3
Total	120	100.0

Mean gestational age of pregnant women was (35±8) weeks; 10% of them had gestational age of less than 28 weeks and 70% of them had gestational age of 37 weeks and more, these findings were shown in table2.

Table 2: The Date of delivery according to the Gestational age among study sample

Gestational age	**Number**	**%**
Mean ± SD [35± 8 **weeks)**		
<28 weeks	12	10.0
28-36 weeks	24	20.0
≥37 weeks	84	70.0
Total	120	100.0

Diabetes mellitus was recorded for one pregnant woman only and hypertension was observed in 10 pregnant women. The venous thromboembolic disease was found in 3 women; these findings were shown in table 3.

Table 3: Distribution of past medical among study sample.

	Yes		No		Total
	Number	%	Number	%	Number %
Diabetes Mellitus	1	0.8	119	99.2	120 100.0%
Hypertension [pre-eclampsia)	10	8.3	110	91.7	120 100.0%
Venous Thrombo-embolic disease	3	2.5	117	97.5	120 100.0%

while 13.3% of pregnant women were taking drugs in pregnancy53.2% of surgical operations were CSs, cervical surgery or tear 46.8, these findings were shown in table4.

Table 4: Past Drugs taken history and surgical history of the sample.

Variable	**Number**	**%**
Drugs taken in pregnancy		
Yes [Tocolytic)	16	13.3
No [non Tocolytic)	104	86.7
Total	120	100.0
Previous operation		
CS	25	53.2
cervical surgery or tear	22	46.8
Total	47	100.0

In previous pregnancy, the Gestation age was less than 37 weeks was observed in 24.4% of pregnant women. Cesarean section was done in 31.7% of previous pregnancies and home delivery was done in 4.2% of previous pregnancies. The antenatal care more than three visit meanantenatal care to PHCC was done in 82.5% of previous pregnancies. All these findings were shown in table 5.

Table 5: Past obstetrical history of among study sample.

Variable	Number	%
Previous pregnancy duration		
<28 weeks	5	4.2
28-36 weeks	24	20.0
≥37 weeks	91	75.8
Total	120	100.0
Mode of delivery		
NVD	82	68.3
CS	38	31.7
Total	120	100.0
Site of delivery		
Hospital	115	95.8
Home	5	4.2
Total	120	100.0
ANC		
Yes	99	82.5
No	21	17.5
Total	120	100.0

The current pregnancy outcomes of women were term birth [74.2%), late preterm birth (16.6%), unknown [loss of follow up) (6.7%), miscarriage [1.7%) and early preterm [0.8%]. Mode of delivery for current pregnancy was distributed as following; normal vaginal delivery (65%), elective CESAREAN SECTION (30.8%) and emergency CESAREAN SECTION (4.2%]. Maternal complications of pregnant women were none in 17.5%, while the main maternal complications were infection (54.2%), infection and bleeding (11.7%), infection, laceration of cervix and bleeding (3.3%), abortion and infection (2.5%), infection and trauma of cervix (2.5%), infection and slipping or premature rupture of membrane (2.5%), abortion (1.7%), etc. All these findings were shown in table 6.

Table 6: Current pregnancy outcome and complications among study sample.

Variable	Number	%
Pregnancy outcome		
Miscarriage ≤24 weeks	2	1.7
Early preterm [28-33 ^{6} weeks)	1	0.8
Late preterm [34-36 ^{6} weeks)	20	16.6
Term >37 weeks	89	74.2
Not known [loss of follow up)	8	6.7
Total	120	100.0
Mode of delivery		
Normal vaginal delivery	78	65.0
Elective Cesarean section	37	30.8
Emergency Cesarean section	5	4.2
Total	120	100.0
Maternal complications		
None	21	17.5
Abortion	2	1.7
Infection	65	54.2
Slipping or premature rupture of membrane	2	1.7
Laceration of cervix	1	0.8
Bleeding	1	0.8
Infection and bleeding	14	11.7
Infection, laceration of cervix and bleeding	4	3.3
Abortion and infection	3	2.5
Abortion, infection and bleeding	1	0.8
Infection and laceration of cervix	3	2.5
Infection and slipping or premature rupture of membrane	3	2.5
Total	120	100.0

Discussion

In current study, the main maternal complication after cerclage was the infection (54.2%]. This finding is consistent with results of Kindinger *etal.,* [54] study in UK which reported higher infection rates after cervical cerclage and found that cerclage induced shift to vaginal dyspiosis that predispose to preterm labour.

Present study revealed that high gravidity, parity and abortion history is significantly related to recurrent cervical cerclage. This finding is similar to results of Tamrakar *etal.,* [3] study in Nepal which documented that increased parity history and abortion history are risk factors for recurrent cervical incompetence. Younger gestational age of pregnant women in this study was a significant risk factor for 1st time cervical cerclage. This finding coincides with results of Chan *etal.,* [4] study in Hong Kong which found that cervical cerclage in first time is correlated directly with mid-trimester pregnancy. The 1st time cervical cerclage is associated significantly with rural residency and husband smoking. Similarly, Karau *etal.,* [5] study in Kenya found a positive relationship between smoking behaviour of women and/or their husbands with high rates and poor outcomes of cervical cerclage.

Preterm labour and rescue indications were significantly related to 1st time cervical cerclage in current study. This finding is similar to results of Prasad *etal.,* [6] study in India which revealed that cervical cerclage applied emergently for pregnant women is associated with high rates of preterm labour and maternal infection in comparison to elective cervical cerclage subgroups.

Present study showed relation between infection complication and 1st cerclage [p=0.01]. Simcox *etal.,* [7] in their systematic review documented that the infection and sepsis are the main complications of cervical cerclage specifically in first time use. A relation was observed between women with preterm labour and 1stcerclage [p=0.01]. This finding is in agreement with results of Lu *etal.,* [9]. study in Australia which reported higher preterm labour in women with first time cerclage.

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