Austin Journal of Obstetrics and Gynecology

Open Access

Austin Publishing Group

Research Article

Rescue Cerclage in Multiple Pregnancy: A Case-Series Retrospective Observational Study

Snaifer E, Nader R, Darido J*
Saint Georges University Hospital, Beirut, Lebanon

***Corresponding author:** Darido J, Saint Georges University Hospital, Beirut, Lebanon

Received: May 11, 2018; **Accepted:** June 12, 2018; **Published:** June 19, 2018

Abstract

Background: Rescue cerclage remains controversial concerning its safety and effectiveness in the improvement of neonatal survival and prolongation of multiple pregnancies and the data concerning rescue cerclage over twin pregnancies are very limited.

Objective: Reveal the efficacy of mid trimester cerclage in patients carrying multiple gestations.

Materials and Methods: Patients carrying twin/triplets gestations who underwent cerclage at Saint Georges University hospital starting from 2009 till October 2014 are studied retrospectively, all of them done by the same operator. A total of 132 multiple pregnancies. From the 15 cases of cerclage that were done, 10 cases of rescue cerclage were selected.

Results: rescue cerclage is done in 7.57% of cases around 23 weeks + 5days. The average time interval between cerclage and delivery is 8 weeks + 6 days of gestation. The deliveries occurred around a mean of 32 weeks 3 days. No failure cases were noted: All deliveries occurred after 28 completed weeks. The cervical length assessed by an ultrasound done after the procedure is 23.2 mm ± 7.5 mm.

Conclusion: Our results are promising. However, in order to clarify the effect of rescue cerclage in prolonging the time of delivery till term as well as over the perinatal survival rates in the case of twin pregnancies, randomized control trial studies must be done.

Introduction

Cervical cerclage is not a recent surgical procedure. It ages more than 50 years. First, it was indicated for patients with an obstetrical history of mid trimester painless dilatation of the cervix, but now we have the rescue cerclage which is considered a salvage therapeutic procedure to prolong pregnancy in women in their second trimester of pregnancy, having an advanced cervical dilation and effacement with or without prolapsed membranes. The contraindications of this procedure are: active labor, unexplained bleeding, and signs of infections and premature rupture of membranes.

The cervical cerclage can be done via transvaginal or transabdominal approach. Either McDonald or Shirodkar technique is used during a transvaginal cervical cerclage. Note that it hasn't been established yet the superiority of one of the 2 techniques over the other. The McDonald technique consists of inserting a simple purse-string suture of nonresorbable material at the cervicovaginal junction. On the other hand, in the Shirodkar technique, the bladder and rectum are dissected from the cervix in order to place the suture as close as possible to the cervical internal os [1].

Limited data considered rescue cerclage in patients with singleton gestations may be beneficial. However, based on limited or inconsistent scientific evidence, cerclage is not recommended in a twin pregnancy with a cervical length less than 25 mm because of the fact that it may increase the risk of preterm birth in these pregnancies.

Table 1: (Values as put in SAS).

Cases	Age	Cerclage (days)	Cervix (mm)	Weight (gram)	Delivery (days)	[cerclag delivery
1	39	182	35	-	238	56
2	32	168	16	887	200	32
3	32	168	20	575	179	18
4	37	163	21	331	231	72
5	20	133	36	-	242	109
6	32	169	23	715	254	85
7	30	168	17	805	229	63
8	28	168	23	-	248	80
9	34	183	27	1053.5	240	56
10	31	159	14	-	211	52
mean	31.5	166.1	23.2	727.75	227.2	62.3
SD	5.16	13.81	7.5	252.32	23.55	26.18

Due to the well-defined operative risks (rupture of membranes, chorioamnionitis, cervical lacerations, suture displacement and in the extreme cases uterine rupture, maternal septicemia), it remains a controversial topic concerning its safety and effectiveness in the improvement of neonatal survival and prolongation of multiple pregnancies which consists a necessity in those resulting from *In Vitro* Fertilization.

Citation: Snaifer E, Nader R, Darido J. Rescue Cerclage in Multiple Pregnancy: A Case-Series Retrospective Observational Study. Austin J Obstet Gynecol. 2018; 5(6): 1118.

The data concerning rescue cerclage over twin pregnancies are very limited. Therefore, through the following case series of 10 multiple pregnancies, our main objective through this study is to reveal the efficacy of mid trimester cerclage in patients carrying multiple gestations.

Materials and Methods

We retrospectively studied Patients carrying twin triplets gestations who underwent cerclage at Saint Georges University hospital starting from 2009 till October 2014, all of them done by the same operator.

First, multiple (twin, triplets, quadruplets) pregnancies were selected from the delivery unit book. It is a total of 132 multiple pregnancies. All the cerclage cases (prophylactic or rescue) during the same period were also selected. It is a total of 15 cases of cerclage. 10 cases of rescue cerclage were selected after studying at the medical records department the file including the operative note of each one of the 15 cases of cerclage. Then, their clinical characteristics were noted: age, history, gravidity, parity, timing of cerclage, time frame between cerclage and delivery, etc.

This surgical procedure was performed as inpatient by the same operator using the same technique of McDonald cerclage for all the cases under general anesthesia and in the absence of regular uterine contractions, as assessed by clinical examination and monitoring. Note that there is no betadine solution used in these cases, only serum because betadine may irritate the membranes. Before the procedure, a 24 hours observation was performed for each one of the cases in order to rule out a starting infectious process. No clinical signs of infection were detected in all of them. Intravenous antibiotics & indomethacine were administrated. Transvaginal ultrasound is performed after the operation in order to assess the cervical length.

SAS, statistical analysis software was also used as a tool in this study.

Results

We expose the 10 cases in Table 2 of rescue cerclage with bulging membranes at or beyond cervical os. Considering the population of 132 multiple pregnancies, rescue cerclage is done in 7.57% of cases around 23 weeks + 5days. The average time interval between cerclage and delivery is 62 days overall (around 8 weeks + 6 days of gestation) with a minimum of 18 days and a maximum of 109 days. The deliveries occurred around a mean of 32 weeks 3 days (± 24 days) (Table 1). No failure cases were noted: All deliveries occurred after 28 completed weeks. The cervical length assessed by an ultrasound done after the procedure is 23.2 mm ± 7.5 mm. All cases except one have history of primary infertility with a current pregnancy that is the result of *in vitro* fertilization.

Discussion

This is an observational retrospective case series study of 10 cases of multiple pregnancies (including twins and triplets) with bulging membranes at or beyond cercical os that underwent rescue cerclage.

Through several studies rescue cerclage confirmed its efficacy over singleton pregnancies but the procedure is still controversial concerning multiple pregnancies. Abu Hashim H et al, performed a review of literature concerning rescue cervical cerclage. This study revealed the benefit of rescue cervical cerclage through many retrospective studies and few prospective nonrandomized studies with limited data supporting the improvement in neonatal morbidity and mortality. Rescue cerclage may reduce preterm birth before 34 weeks up to 2 folds and prolong pregnancy around 4 to 5 weeks. The risk of failure is increased if cervical dilation exceeds 4 cms or if membranes are bulging into the vagina [2]. The most important studies included in this review were the following:

3 retrospective case control studies over SINGLETON pregnancies with a number of cases of rescue cervical cerclage varying between 32 and 89 patients that were compared to control patients that underwent either a conservative management that consists of bed rest, tocolysis and antibiotics or expectant management or asymptomatic ultrasound indicated cerclage [3]; Rescue cerclage prolonged the pregnancy more with a time frame between cerclage and delivery around 7 to 12 weeks, only 50% of premature deliveries before 34 weeks and a better neonatal survival 60% to 96% [4].

There are several retrospective studies and retrospective cohort studies. The results of these studies mainly revealed that the duration of cerclage in situ was significantly longer if it was done at or before 20 weeks or if there was no prolapsed membranes at the time of presentation. In addition, the presences of infection or bulging membranes through the cervix are associated with poor outcome.

As for multiple pregnancies, the use of cervical cerclage to prolong the multiple pregnancies is still a controversial subject especially if it occurs as an urgent, salvage procedure. Some researchers failed to demonstrate a lower incidence of spontaneous preterm delivery with cerclage in twin and triplet pregnancies in comparison with conservative treatment [5]. In addition to our study, Levin I et al and Zanardini C et al indicated that rescue cervical cerclage might be beneficial which contradicts recommendations [6,7], aimed to evaluate in their study the outcomes of cervical cerclage performed in twin pregnancies for an ultrasound cervical length ≤ 20 mm (ultrasound indicated CC) or for cervical dilatation with bulging membranes at or beyond the external cervical os (physical examination indicated CC, or emergency cerclage). Over the 42 twin pregnancies that underwent cervical cerclage, 14 were physical examination indicated. They noted 50% of preterm delivery < 34 weeks, 86% rate of perinatal survival with a median gestational age at delivery of 32 weeks and a cerclage to delivery interval of 9 weeks + 6d. Zanardini C considered the outcomes in the physical examination-indicated cervical cerclage group encouraging especially that this kind of presentation is extreme. Levin et al reported a case series with the results with emergency placement in patients with twin gestations. Over the 14 patients, only 4 patients had cervical dilatation with bulging membranes through the external os to the vagina. The time frame between cerclage and delivery was an average of 48.5 days despite the fact that of these 4 patients, 1 chorioamnionitis with delivery at 24 weeks (survived) 19 days after cerclage placement and 1 chorioamnionitis with late abortion at 22 weeks 4 days after cerclage [6]. One retrospective cohort study done by Gupta et al included 11 TWIN pregnancies in a total of 45 rescue cervical cerclage cases. It resulted in 21 pregnancies including only 2 twin pregnancies that had a good outcome delivering after 32 weeks [8].

Table 2:

Table 2	Age (yrs)	Past hx	Infertility	IVF	Pregnancies	Cerclag	Obstetrcal US POST Cerclage	Delivery	Time frame Cerclage-delivery
Case 1	39	-	-	-	G3P2002 TWINS	26 weeks Cervical incompetence with **bulging of membranes beyond cervical os** Double cerclage	26 weeks+ 1 day Cervixà →35mm	C-section 34 Weeks	56 days
Case 2	32	HSC+ laparoà → septated Uterus	Primary	+	G1P0000 TRIPLETS	24 weeks Cervical incompetence with **bulging of membranes beyond cervical os** Double cerclage Mcdonald	25 weeks+6d A → 945g B →1046g C → 22 weeks+3d; 670g Cervix → 15mm-17mm	Preterm contractions 28 weeks +4 days	32 days
Case 3	32	HSC → polyp D&C	Primary	+	G2P0010 TWINS	24 weeks Cervical incompetence with **bulging of membranes beyond cervical os** Cerclage Mcdonald	A → 480g; 21wks+ 6d B → 670g; 23wks+ 1d Cervix → 20mm	25 weeks+4 Labor 1st baby à NVD 2nd babyà c/s	18 days
Case 4	37	HSCà normal	Primary	+	G1P0000 TWINS	23 weeks+2 days Bulging membranes Mc Donald	19 weeks+ 6d A → 330g B → 332g Cervix : 21 mm	C section after PPROM with preterm contractions 33 weeks	72 days
Case 5	20	HSC → hypertrophie endometriale	Primary	+	G1P0000 Tripletsà expulsion of 1 of the sacs at 17wks & preg continued with TWINS	19 weeks Double cerclage Mcdonald With **bulging of membranes beyond cervical os**	19 weeks Cervix → 36mm	34 weeks+4	109 days
Case 6	32	Sleeve HSC/laparoà polyps	Primary	+	G1P0000 TWINS	24 weeks+1 d Bulging membranes Double cerclage	24 weeks+2d A → 671g B → 759g Cervix → 23 mm	36 weeks+2	85 days
Case 7	30	HSC/laparoà adhesions/polyp	Primary	+	G1P0000 TWINS	24 Weeks Bulging membranes cervical incompetence double cerclage	A → 25 weeks+4d; 840g B → 24 weeks+ 4 d; 770g Cervix → 17mm	32 weeks + 5 days	63 days
Case 8	28	Laparotomy for ectopic pregnancy at 12 weeks (this preg) Hystero/lapar	primary	+	G2P0010 TWINS	24 weeks Bulging membranes	22 weeks+5d Cervix → 23 mm	35 weeks +3 days	80 days
Case 9	34	-	Primary	+	G1p0 TWINS	26 WEEKS+1 **Bulging of membranes beyond cervical os** Double cerclage	A → 27 weeks+7 days; 1144g B → 26 weeks+1d; 963g Cervix → 27mm	34 weeks+ 2 days	56 days
Case 10	31	-	Primary	+	G1P0 TWINS	22+5 weeks Bulging membranes	Cervix → 14mm	30 weeks+ 1 day	52 days

In comparison to the data figuring in the review of literature, our study showed better outcomes. In fact, only 5 cases over 10 (50%) are preterm deliveries < 34 weeks (between 28 and 34 weeks) with a 100% perinatal survival rate and a mean gestational age at delivery of 32 weeks + 3 days. Note that there were no cases of chorioamnionitis reported. However, the time frame between cerclage and delivery (8weeks + 6 days) is minor in comparison to the study of Zanardini et al (9 weeks + 6 days).

The main limitations of our study consist of its retrospective nature and the absence of comparison with a control group was the rescue cerclage procedure was not used.

Conclusion

Multiple gestations presenting with painless dilatation and bulging membranes remain a controversial subject with limited evidenced-based data. In order to clarify the effect of rescue cerclage in prolonging the time of delivery till term as well as over the perinatal survival rates in the case of twin pregnancies, randomized control trial studies must be done.

References

1. ACOG practice bulletin, number 142: Cerclage for the management of cervical insufficiency. Obstet Gynecol. 2014; 123: 372-379.
2. Abu HashimH, Al-Inany H, Kilani Z. A review of the contemporary evidence on rescue cervical cerclage. Int J Gynaecol Obstet. 2014; 124: 198-203.
3. Stupin JH, David M, Siedentopf JP, Dudenhausen JW. Emergency cerclage versus bed rest for amniotic sac prolapse before 27 gestational weeks. A retrospective, comparative study of 161 women. Eur J Obstet Gynecol Reprod Biol. 2008; 139: 32-37.
4. F. Fuchs, X Deffieux, MV Senat, A Gervaise, E Faivre, R Frydman, et al. Techniques chirurgicales de cerclage du col utérin, EMC. 2011: 41-895.

5. Newman RB, Krombach RS, Myers MC, McGee DL. Effect of cerclage on obstetrical outcome in twin gestations with a shortened cervical length. Am J Obstet Gynecol. 2002; 186: 634-640.

6. Levin I, Salzer L, Maslovitz S, Avni A, Lessing JB, Groutz A, et al. Outcomes of mid-trimester Emergency cerclage in twin pregnancies. Fetal Diagn Ther. 2012; 32: 246-250.

7. Zanardini C, Pagani G, Fichera A, Prefumo F, and Frusca T. Cervical cerclage in twin pregnancies. Arch Gynecol Obstet. 2013; 288: 267–271.

8. Gupta M, Emary K, Impey L, Emergency cervical cerclage: predictors of success. J Matern Fetal Neonatal Med. 2010; 23: 670-674.

Citation: Snaifer E, Nader R, Darido J. Rescue Cerclage in Multiple Pregnancy: A Case-Series Retrospective Observational Study. Austin J Obstet Gynecol. 2018; 5(6): 1118.