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## BENEFITS OF SHIRODKAR STITCH IN WOMEN WITH FAILED McDONALD STITCH

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## BENEFITS OF SHIRODKAR STITCH IN WOMEN WITH FAILED McDONALD STITCH

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### SUMMARY

**This is a case series presentation of 14 cases where Shirodkar stitch was inserted after failed McDonald stitch. The patients were either self referrals or from Obstetricians in Eastern Africa region. All the patients were able to carry the pregnancies to term and were delivered by Caesarean section. The findings show that Shirodkar stitch has a place in management of patients with recurrent pregnancy loss. There is need to familiarise obstetricians on the insertion of Shirodkar stitch.**

### INTRODUCTION

Cervical cerclage is an age old surgical procedure used to tighten the cervix in cases of cervical insufficiency (1). The decision to insert the stitch is normally made on clinical history, cervical examination and more recently through ultrasonographic evaluation of the internal os of the cervix and the cervical length (1-5). The most common aetiological factor is usually previous trauma to the cervix at cervical dilatation, uterine evacuation and at delivery with cervical tears, these leads to the weakening of the cervical fibres at the level of the internal os and this leads to ease of early cervical effacement and dilatation leading to pregnancy loss or preterm deliveries.

The original cervical cerclage, Shirodkar stitch is currently less applied more so in our country Kenya since very few obstetricians have the capacity to do so. The McDonald stitch is commonly applied since it is much easier to insert and its removal allows for the vaginal delivery as opposed to the Shirodkar stitch which is more difficult to insert usually permanent and delivery is by Caesarean section.

Though varies Meta analysis have shown that there is no difference in the outcome between the two procedures when cervical cerclage is indicated, our experience has been that good outcome is achievable by using the Shirodkar stitch in patients who have had repeated failed McDonald stitch (3).

The indication for cervical cerclage is the prevention of cervical insufficiency (CI). There are three types of cervical cerclage:

- A prophylactic (elective) cerclage is typically placed at the end of the first trimester or in the early second trimester (12 to 16 weeks of gestation).

- An urgent cerclage is performed when the findings on ultrasound evaluation of the cervix is suggestive of cervical Insufficiency. The critical cervical length is 15mm.
- An emergency (rescue) cerclage is placed when advanced cervical changes (dilatation) are present on visual (speculum) and digital examination.

In this paper we are reporting on 14 patients in whom we inserted Shirodkar stitch. There are no reports on patients who have had Shirodkar stitch inserted and their outcome in East Africa. This information will be useful to practicing obstetricians in the region.

### CASE REPORT

This is a consecutive case series report on 14 patients in whom we inserted Shirodkar stitch following failed McDonald stitch. All the cases had a previous history of one or more failed McDonald stitch all these cases were hospitalised and done at The Nairobi hospital. A failed McDonald stitch was defined as pregnancy loss before a gestation of 20 weeks/weight of <500g which is the WHO criteria for foetal viability. This cut off was used since in our experience the survival of babies at this gestation is achievable in the New Born unit of the Nairobi hospital. All these patients had the failed McDonald stitch previous inserted by the attending obstetrician who then referred the patients while others were self referrals. The number of the previous McDonald stitch insertion varied from two to four. All these procedures were carried out by the authors at the Nairobi hospital maternity unit theatre.

The patients were admitted to hospital a day prior

to surgery. Routine assessments included the patients' antenatal profiles and an obstetric ultrasound. The procedure was fully explained to the patients before informed consent was obtained. The anaesthesiologist had the opportunity to review the patient prior to surgery. In theatre general anaesthesia was utilised, the patient was placed in the lithotomy position and in exaggerated Trendelenburgs position. In this position the membranes are pushed away from the level of the internal os therefore making it less likely to injure the membranes. The bladder was catheterised and its margins on the cervix was noted. Jungle juice mixture of 50 mls was used and was prepared as follows:

In 25mls of 2% lignocaine, add 22.5mls sterile water for injection then add hyalase powder one ampoule and dissolve in the mixture. One mg adrenaline (1 ml of 1:1000) and dilute to 10mls with water for injection. Then 2.5mls of this diluted adrenaline and add to the solution of lignocaine. This gave a final mixture of lignocaine 1% with adrenaline 1:200,000. This solution provides cardiovascular stability even if some of it got into the circulation. It can safely be used during halothane or enflurane anaesthesia with minimal risk of cardiac

arrhythmias.

This was then infiltrated around the cervix. It served two purposes 1) ease of identification of the tissue planes (2) minimises bleeding when reflecting the bladder away. Thereafter an incision was made on the anterior cervical fold, the tissue planes were used to push the bladder anterior till the full length of the cervix was determined. A 0.5cm incision was then made anteriorly and through the incision. A mersilene 50 tape suture was inserted through the cervical stroma in one sweep to come out at the same point of the previous insertion. This technique is different from the classical Shirodkar stitch where the stitch is pulled out at the posterior cervix and brought up then inserted to the point of previous insertion. I found the one sweep technique much easier and less likely to cause any trauma to the membranes and also later on there is no associated dyspareunia. The knot was made three times to ensure that there was no knot laxity. Thereafter the bladder was brought back to its original position and repaired using 40 vicryl suture.

The table 1 is a summary of the patients and the foetal outcome.

**Table 1**  
*Summary of the patients and the foetal outcome*

Age	Parity	No. of failed McDonald Stitches	Outcome after Shirodkar
27	0+5	4	Baby alive
29	0+3	2	Baby alive
30	0+3	2	Baby alive
34	0+2	1	Baby alive
30	0+4	2	Baby alive
24	0+4	3	Baby alive
35	0+3	2	Baby alive
30	0+3	2	Baby alive
34	2+2	2	Baby alive
27	1+2	2	Baby alive
34	0+3	2	Baby alive
34	0+3	3	Baby alive
30	2+2	2	Baby alive
35	1+5	3	Baby alive
27	2+2	1	Baby alive

The patients had a mean age of 30 years. The mean number of previous pregnancy wastage was 3. All the patients had the cerclage at between 12 to 14 weeks of gestation. No patient developed any complications either intra operatively or post operatively. The average stay in the hospital was three days. All had caesarean deliveries with good foetal outcome. The patients were either delivered by the referring Obstetrician or the authors.

## DISCUSSION

Cervical cerclage choice by using the Shirodkar was made since the patients had repeated McDonald stitch insertion which failed. A failed McDonald stitch was described as a pregnancy loss prior to the attainment of the age of viability in a patient who had the stitch inserted. There was no report on the use of Shirodkar stitch in the management of patients requiring cervical cerclage in our region. All the patients who benefited from this technique were all selected from their previous history alone, although many studies and reports have depended more on presence of the shortened cervix or multiple gestations as a criterion(1,5), but in the patients reported here the indications were varied. In some centres prophylactic cerclage is recommended for patients with multiple pregnancies (5).

The outcome in all the cases was good. All had term gestation and were delivered by elective Caesarean section either by the authors or by the primary obstetrician who had referred the patient.

These findings show that Shirodkar stitch still has a place in management of patients with cervical insufficiency/ weakness to prevent preterm births and recurrent pregnancy wastage. Higgs *et al* in 1996 in a cohort study found that there was no difference in outcome in the group on risk assessment surveillance and those patients who had cervical cerclage done (1). There are many conflicting report in practice if indeed cervical cerclage is of benefit in prevention of preterm delivery (2,3). In a Meta analysis looking at cervical length screening as an indicator for cervical cerclage compared to ultrasound-indicated cerclage compared with history-indicated cerclage for prevention of preterm birth. The findings were that the use of the ultrasound as a determinant to cervical cerclage was a more reliable indicator than historical indication. The conclusions drawn from this study was that singleton gestations in women with prior preterm birth may be monitored safely with transvaginal ultrasound cervical length screening as compared to a policy of routine history-indicated cerclage. Cerclage can be reserved only for the minority of women who develop a short

cervical length (3). Our experience is that the place of cervical cerclage in obstetric practice is here to stay. In the cases presented McDonald stitch insertion was done but the women still did lose the pregnancies before the age of viability and on insertion of the Shirodkar stitch we had a good outcome in all the patients. The cervical cerclage indications were historical based in the second trimester. Those patients with historical pregnancy loss wastage in the second trimester there is a strong advocacy for the insertion of the stitch (7). Insertion of rescue Shirodkar stitch has been shown be beneficial in some patients with mid second trimester painless cervical dilatation (8).

The choice of the type of cerclage is important. In most patients diagnosis is made through transvaginal ultrasound assessment, with evidence of cervical shortening and in some cases the presence of internal os opening. McDonald stitch has become quite popular in clinical practice since it is easy to insert and relatively easy to remove. This has made the use of Shirodkar cerclage which was first described in 1955 Dr Shirodkar in Bombay (6) to be less popular in clinical practice. There is need to have skills in the insertion of the Shirodkar stitch since as the cases presented above would attest that it is still a very useful tool in the management of patients with cervical insufficiency or weakness.

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