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CERVICAL INCOMPETENCE;
ROLE OF CERVICAL CERCLAGE IN CERVICAL INCOMPETENCE.

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ABSTRACT… Objectives: The objective of the study was to determine the effectiveness of cervical cerclage applied in 2nd trimester for cervical incompetence to prevent pregnancy loss. **Settings:** This study was carried out in the Department of Obstetrics & Gynaecology Unit-I & II, Jinnah Hospital, Lahore. **Duration of Study:** This study was carried out from June 2015 to May 2016. **Study Design:** Descriptive case series. **Results:** The mean age of the patients was 27.33+4.21 years. Most of the patients (66%, n=33) were between 25-30 years while 34% (n=17) were between 31-35 years. Gestational age of 70% patients (n=35) was between 13-18 weeks. Dilated cervix up to 3 cm was present in 44% (n=22) patients. Cervical length, 2.5cm, was present in 52% (n=26) patients while 36% (n=18) subjects showed membrane prolapse (beyondinternal os) and 64% (n=32) subjects had continuation of pregnancy up till 28 weeks. **Conclusion:** Cervical cerclage applied in 2nd trimester for cervical incompetence is effective in majority of the patients.

Key words: Cervical Incompetence, 2nd Trimester, Miscarriage, Cervical Cerclage.

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INTRODUCTION

Neonatal deaths and neonatal morbidity are common consequence of preterm births. The incidence of preterm births among all pregnant women is 7 to 10 %. These preterm births are responsible for 75% of all neonatal morbidity and mortality.[1,2] The cause of preterm birth is considered to be multifactorial.[3] Young age, black race, history of previous preterm birth, low socioeconomic status, drug abuse, polyhydramnios smoking and multiple gestations are considered common causative factors. Uterine anomalies and possible infectious agents have also been suspected as possible associations.[4] Cervical incompetence also has been included as one of important factor responsible for preterm labor.

Painless cervical dilatation in the second trimester is defined as cervical incompetence. It is a condition where the cervi becomes slightly open and there is a risk of miscarriage as it may not remain closed throughout pregnancy. It is associated with prolapse and ballooning of the membranes into vagina. Thus, rupture of membranes occurs followed by birth of an immature fetus. Diagnosis of cervical incompetence is based on history and clinical examination.[5] Hysterography, pull-through techniques with catheter balloons or cervical dilators, and ultrasound scanning are the tests which help in diagnosis.[6] Treatment of choice for patients with cervical incompetence is Cervical cerclage (cervical stitch).[7] Cervical cerclage is, usually, used for women who had one or more miscarriages in the second trimester of their pregnancy.[8]

Cervical cerclage is a technique in which a strong suture is encircled into and around cervix early in pregnancy, commonly around 12 to 14 weeks. This suture is removed towards the end of the pregnancy. At this stage of pregnancy, risk of miscarriage has already significantly decreased.[7] Since it was first discovered by Shirodker and McDonald in 1950, cervical cerclage has always been as the main treatment option and can be performed prophylactically or therapeutically.[9] Success of Cerclage depends on degree of cervical dilatation, cervical length, membranes

prolapse and gestational age at the time of cerclage application. The aim of our study was to determine the effectiveness of cervical cerclage in preventing miscarriages in the mid trimester of pregnancy.

PATIENTS AND METHODS

This descriptive case series was carried out in Department of Obstetrics & Gynaecology Unit-I & II, Jinnah Hospital, Lahore from June 2015 to May 2016. This study was done on 50 patients and Non-probability purposive sampling was used to select the patients. Approval of Hospital Ethical Committee was sought to carry out this study in our department. All patients with 25-35 years of age at 12 to 24 weeks of gestation (confirmed by dating scan) were included in the study who had history of at least three 2nd trimester miscarriages due to cervical incompetence as diagnosed by history and ultrasonographically (shortening of cervix i.e. <2.5cm).

Patients were excluded from the study who had history of abortions due to causes other than cervical incompetence such as vaginal infections, uterine malformations, Diabetes mellitus, Hypertension and antiphospholipid syndrome. Fifty patients were selected from OPD and Antenatal Ward of obstetrics and Gynaecology Department (Unit I & II) of Jinnah Hospital, Lahore. Patients fulfilling the inclusion criteria, were registered and an informed consent was obtained after explaining the patients the study and procedure involved in the study and its pros and cons. Demographic information (name, age) was recorded in a predesigned proforma. On admission obstetric ward, a detailed history was taken and previous antenatal record, if available, was reviewed to detect any antenatal complications or issues.

Detailed general physical examination and local examination was done and all baseline investigations were carried out. Ultrasonography was done to confirm cervical incompetence in all cases. Under general anesthesia, patients were placed in lithotomy position and after aseptic measures cervical cerclage was applied. Follow up was done till 28 weeks of gestation. During procedure, patients were managed according to ward protocols. Antibiotics were administrated to all patients in postop period. Any complications during procedure, post procedure, if encountered were recorded. After procedure, patients were monitored for the first 24 hours for any postpartum haemorrhage which was taken as blood loss more than 500ml. All the data was entered into SPSS (version 12) and analyzed. Quantitative variables (age, duration of pregnancy) were presented as mean and standard deviation. Outcome variable i.e. continuation of pregnancy (yes, no) was presented as frequency. Effect modifiers such as cervical dilatation, cervical length, and membranes prolapsed and gestational age was studied through stratification.

RESULTS

In our study, we studied 50 patients were who fulfilled the inclusion criteria laid down before study was launched. This study determined the effectiveness of cervical cerclage applied in 2nd trimester for cervical incompetence.

The age distribution of the patients, most of the patients were found between 25-30 years i.e. 66%(n=33) while 34%(n=17) of the patients were of age 31-35 years (Table-I). Mean age was 27.33+4.21years.Gestational age in most of the patients i.e. 70%(n=35) were between 13-18 weeks, while 30%(n=15) were found between 19-22 weeks of gestation. (Table-II). Status of cervical dilatation shows 44%(n=22) patients with 3cm while 56%(n=28) were recorded <3cm. (Table-III). Table-IV shows 52%(n=26) subjects were having cervical length 2.5cm while 48%(n=24) were with <2.5cm.

Thirty six, 36%(n=18) subjects showed membrane prolapse (beyond internal os) while in 64%(n=32) with no membrane prolapse (beyond internal os). (Table-V)

Sixty Four 64%(n=32) patients had continuation of pregnancy till 28 weeks of gestation while in 36%(n=18), pregnancy could not be continued. (Table-VI)

Age in Years	No. of Cases	Percentage
25-30	33	66
31-35	17	34
Mean and S.D.	27.33+4.21	
Total	50	100

Table-I. Age distribution of the subjects

Gestational Age (in Weeks)	No. of Cases	Percentage
13-18	35	70
19-22	15	30
Total	50	100

Table-II. Gestational age of the subjects

Cervical Dilatation	No. of Cases	Percentage
3cm	22	44
<3cm	28	56
Total	50	100

Table-III. Status of cervical dilatation

Cervical Lengths	No. of cases	Percentage
2.5cm	26	52
<2.5 cm	24	48
Total	50	100

Table-IV. Cervical length

Membrane Prolapse (beyond internal os)	No. of cases	Percentage
Yes	18	36
No	32	64
Total	50	100

Table-V. Status of membranes prolapse

Continuation of pregnancy	No. of Cases	Percentage
Yes	32	64
No	18	36
Total	50	100

Table-VI. Status of continuation of pregnancy till 28 weeks of gestation

DISCUSSION

The incidence and prevalence of cervical incompetence has got a great variation across the globe, as a lack of maternity care and diagnostic difficulties make accurate diagnosis a little difficult. Cervical incompetence is considered as causative factor contributing to pregnancy loss in second and early third trimester. It is also considered responsible for preterm/prelabour rupture of membranes leading to preterm labor. Many options and therapeutic interventions are proposed to keep the cervix closed until birth. With availability of ultrasonography, we can always measure cervical length, thus can apply cerclage as a prophylactic measure. It has been proved useful in treating the cases of cervical incompetence. In single gestations with history of preterm birth, application of cerclage in cases of short cervix (diagnosed by ultrasound) diminishes preterm births rate. While in cases of twin pregnancies, a significant increase in preterm births at less than 35 weeks of gestation was observed.[10] In Patients who require cerclage in emergency situations, detection for infection, antibiotics and sonographic monitoring do improve the success rate of this useful intervention.

According to the PRAMS study,[10] majority of the women who had cervical cerclage were under 20-30 years of age. This disparity may partly be explained by ethnic and lifestyle differences. The mean age of our patients was27.33, which is in keeping with 29.28 reported previously by Rodrigues LC.[11]

The gestation period in our population ranged from 13 to 22 weeks, with majority falling between 13-18 weeks as the cervical incompetence is mostly diagnosed in the second trimester when the amniotic sac fills the uterine cavity. Rodrigues has reported an average gestational period of 18.29 weeks, which compares well with our findings.

The role of emergency cerclage in women presenting with a dilated external cervical os and bulging/hour-glassing membranes was evaluated by Cock well and Smith.[12] They have found that emergency cerclage increases the chances of viable pregnancy, by significantly prolonging pregnancy duration and thus bringing a viable pregnancy outcome. Our results are in agreement with this study.

In one study Khan and colleagues studied efficacy of cerlage in elective, urgent and emergency groups.[13] Cerclage was placed in 145 patients, 112 elective, 16 urgent, and 17 emergency. Delivery beyond 36 weeks occurred 79.4, 73.3,

and 47.1%in the elective, urgent and emergency group. There were five neonatal deaths.

To assess efficacy and safety of prophylactic cerclage (before the cervix is actually dilated), and emergency cerclage (when cervix have started to shorten and dilate), was carried out by Drakeley and colleagues.[14] They commented that in women who had short cervix on ultrasound, the role of cervical cerclage is uncertain as number of patients studied were few to draw any definite conclusions. Thus in women at low or medium risk of mid trimester loss, a cervical stitch should not be applied, regardless of cervical length by ultrasound, as its efficacy and benefits remains unclear.

While in another study by Kurup and Goldkrand t was clearly recommended that emergency cerclage provides benefits to the patients with an evidence of cervical incompetence.[15] They have further argued that subtle ultra sonographic changes in the cervix in one subgroup of patients need cerclage on an urgent basis as it is clearly beneficial.

The limitation of the study was that we did not include the frequency of complications of this procedure, but during this trial, however no significant postoperative complications were observed during this short follow up period. Further studies are required to investigate the frequency of post procedure complications on a long follow up.

CONCLUSION

The results of this study and other studies conclude that cervical cerclage applied in 2nd trimester for cervical incompetence is effective in majority of the patients.

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Memories take us back,
Dreams take us forward.

"Unknown"

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