PPROM after Cerclage: To Remove The Stitch or Not to Remove

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Introduction

Preterm premature rupture of membranes (PPROM) complicates about 38% of all pregnancies with cerclage.[1] This translates into an increased maternal, perinatal and neonatal risks in terms of infection and preterm birth. Now whether to remove the cerclage stitch or to retain it remains the most controversial aspect of this topic.

Case

32 year, G2A1, with history of previous spontaneous painless abortion at 25 weeks, registered in our antenatal clinic at 26 weeks of gestation. All routine investigations were normal. Ultrasound was done which showed a single live intrauterine gestation of 25 weeks with normal amniotic fluid index and appropriate estimated foetal weight. Cervical length on transvaginal sonography was 2.5 cm.

Patient underwent McDonald's cervical cerclage at 26 weeks and 1 day in view of previous preterm vaginal delivery with short cervix. On day 1 of surgery, patient complained of watery leaking per vaginum. On examination vitals were stable, FHS present, uterus relaxed and cervical os closed with knot in situ but litmus test was positive. Patient was intensively monitored thereafter for signs of labour, chorioamnionitis and for foetal well being, undercover of antibiotics and tocolysis, while retaining the cervical stitch. Injection betamethasone was given for foetal lung maturity with progesterone support.

Intensively monitoring for signs of maternal chorioamnionitis, sepsis as well tests for foetal well being like weekly ultrasound for amniotic fluid index and colour doppler were done, all of which were normal. Conservative management was continued till 33 weeks of gestation when patient went into labour, cerclage was removed and labour was allowed to progress spontaneously.

Patient delivered a male child of 2.2 kg with an APGAR of 9/10. Baby was transferred to NICU in view of preterm with PPROM. All neonatal investigations were normal, with no signs of any perinatal infection. Baby was given prophylactic antibiotics for 5 days. Mother and baby were discharged on day 6 of delivery.

Discussion

Cervical cerclage may be indicated in specific clinical situations to reduce the risk of preterm delivery in pregnancies already considered to be high risk for maternal and foetal interests. Onset of PPROM in such a scenario complicates it further by adding to the risk of infection both maternal and foetal. We would like to discuss some important factors which affected our decision making process while managing this case.

One of the major considerations in our case was the decision for a late cerclage at 26 weeks of gestation. Earlier studies done by Rust, et al did not find cerclage therapy to alter the perinatal outcome variables and also added that the increased neonatal morbidity in these patients could be attributed to subclinical infection, preterm labour and abruption.[1] A systematic review done by Conde-Agudelo recommends that both vaginal progesterone and cerclage are effective in

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the prevention of preterm birth in women with sonographic short cervix in second trimester, singleton pregnancy and previous preterm. However the selection of optimum treatment needs to consider adverse events, cost and patient and physician preferences.[2] Recent studies by Egbe et al, Siestke M concluded that in experienced hands and in the absence of other risk factors like infection, the success rates of cerclage are encouraging with improved prognosis, as it decreases the rates of preterm delivery (< 34 weeks) without an increase in the compound neonatal morbidity.[3,4]

Another crucial decision was whether to administer extended tocolysis. This is still an area of grey zone in the management of preterm premature rupture of membranes. A cochrane database review suggested that the role of tocolytic therapy for women with PPROM is of no benefit, as there was an increase in maternal chorioamnionitis without significant benefits with regards to maternal and infant morbidity and mortality. However, the studies included in the review did not consistently administer latency antibiotics and corticosteroids, both of which are now considered standard of care.[5] Hence further evaluation of tocolysis is required in women with PPROM who are treated with antibiotics and corticosteroids as is currently the standard of care.

PPROM is known to complicate 38% of pregnancies with elective and 20-72% emergency cervical cerclage procedures.[6] While some advocate that early removal of the cerclage stitch negates the risk of infection and chorioamnionitis,[7,8] it may not improve foetal outcome in terms of prematurity.

While most studies[7-9] support that retention of the cervical stitch after PPROM improves the latency period, whether this increased intrauterine time actually translates into improved neonatal outcomes is not supported by all.

Among the various studies done on this topic, some of them compared pregnancies complicated with PPROM and cerclage with controlled pregnancies with PPROM alone, and found that PPROM with cerclage did have an additional adversities, provided the cerclage was removed immediately.[10] But the issue of timing of cerclage removal was not addressed, as to cerclage should be removed immediately or whether it should be removed with onset of labour or clinical or laboratory evidence of infection or with the onset of foetal distress.

Again among the group of studies which evaluated immediate cerclage removal versus in situ management, administration of corticosteroids and antibiotics formed the determining factor for favourable maternal and neonatal outcome in terms of no increased risk of infection and neonatal morbidity.[9-11]

A review analysis by Ramont FR,[12] suggests that management of patients with PPROM with cerclage needs to be individualised. At either extremes of gestational age (<20 weeks or >28 weeks), in pregnancies with PPROM associated with cerclage, the cervical stitch should be removed. However between 20 and 28 weeks gestation,

particularly 24 to 26 weeks, caution needs to be exercised. A more conservative approach can be offered after ensuring maternal and foetal well being. Maternal infection especially chorioamnionitis needs to be ruled out. Foetal well being should also be monitored with foetal heart monitoring and ultrasound monitoring for amniotic fluid volume. When all these are normal, it is deemed appropriate to retain the stitch.

Also administration of glucocorticoids for foetal lung maturity and broad spectrum antibiotics to cover both aerobic and anaerobic infection (including mycoplasma), is important.

Conclusion

While the debate on cervical stitch removal or retention continues, in the absence of randomised clinical trials and management protocols for the same, it is best to individualise treatment of PPROM with cerclage in the best maternal and foetal interests.

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