

## Physical Exam-Indicated Cerclage with Mesh Cap Prolonged Gestation on Average for 9 Weeks and 4 Days: 11 Years of Experience

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**Abstract :** Cervical dilatation and membrane herniation before 26th week of gestation poses very high risk for extremely and very premature childbirth. Cerclage with mesh cap (mesh cerclage, MC) can greatly diminish this risk and provide additional positive effects. Between 2005 and 2014, MC has been performed in 9 patients with singleton pregnancies who had prolapsed membranes beyond external cervical/uterine os before 25th week of pregnancy (one in 29th). With patients in general anaesthesia, lithotomy and Trendelenburg position (about 25°) prolapsed membranes were repositioned in the uterine cavity, using tampon soaked in antiseptic solution (Skinsept<sup>®</sup> mucosa). A circular, a type of purse-string suture (main band) with double string Ethilon 1 was applied at about 1 to 1.5 cm from the border of the external uterine os - 6 to 8 stitches were placed, so the whole external uterine os was encircled (modified McDonald). In the next step additional Ethilon 0 sutures were placed around all exposed parts of the main double circular suture and loosely tightened. On those sutures, round tailored (diameter around 6 cm) mesh (Prolene<sup>®</sup> or Gynemesh\* PS) was attached. In all 9 cases, gestation was prolonged on average for 9 weeks and 4 days (67 days). In four cases maturity was achieved. Mesh was removed in 37th-38th week of pregnancy or if spontaneous labour began. In two cases, a caesarean section was performed because of breech presentation. In the first week after birth in 22nd week one new born died because of immaturity (premature birth was threatening in 18th week and then MC was placed). Ten years after first MC, 8 of 9 women with singleton pregnancy and MC performed have 8 healthy children from these pregnancies. Mesh cerclage successfully closed the opened cervical canal or uterine orifice and prevented further membrane herniation and membrane rupture. MC also provides a similar effect as with occluding the external os with suturing but without interrupting the way for excretion of abundant cervical mucus. The mesh also pulls the main circular band outwards and thus lowers the chance of suture cutting through the remaining cervix. MC prolonged gestation very successfully (mean for 9 weeks and 4 days) and thus increased possibility for survival and diminished the risk for complications in very early preterm delivered survivors in cases with cervical dilatation and membrane herniation before 26th week of gestation. Without action possibility to achieve at least 28th or 32nd week of gestation would be poor.

**Keywords :** cervical insufficiency, mesh cerclage, membrane protrusion, premature birth prevention, physical exam-indicated cerclage, rescue cerclage

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