

Audit of Maternal and Fetal Outcome of Cervical Cerclage in Pregnancy

St Michaels Hospital, Bristol. *L Bentham, C Park, J Trinder*

Introduction

Cervical incompetence: defined as painless cervical dilatation after the first trimester with prolapse of the membranes into the vagina. It is difficult to diagnose objectively, and reported incidence varies from 3 - 18 per 1000 live birth. Interventions to prevent progression include non-surgical (modified activity, bed rest and pessaries) and surgical approaches, using cervical cerclage. St Michaels Hospital has local guidelines to ensure appropriate utilization of this procedure due to associated risks including PROM, chorioamnionitis and puerperal pyrexia. This audit looks at maternal & fetal outcomes and compliance with guidelines in three groups – elective, urgent/USS-indicated and emergency cerclage.

Aim:

To look at the maternal and fetal outcome of elective, USS guided/urgent and emergency cervical cerclage in women with suspected cervical incompetence in accordance with local guidelines.

Audit objectives:

1. Gestational age reached in the elective/USS indicated group
2. Gestational prolongation in the emergency group
3. Indication for suture removal
4. Maternal morbidity
5. Fetal morbidity & mortality

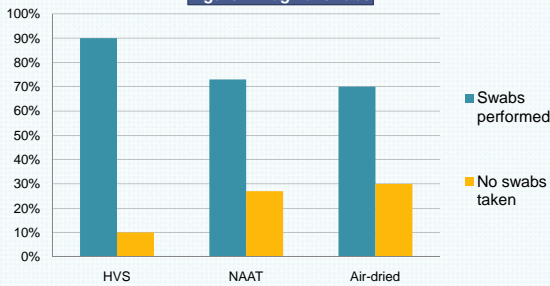
Results

Standard 1: Indication for referral in accordance with local guidelines. 100% compliance.

Standard 2. Figure 1: Vaginal swabs – HVS, NAAT and air-dried (with PRN treatment) prior to surgery.

All patients should have vaginal swabs prior to suture insertion. However documentation was suboptimal with overall compliance of 78% (HVS-90% [54]; NAAT-73% [42]; air-dried-70% [42]).

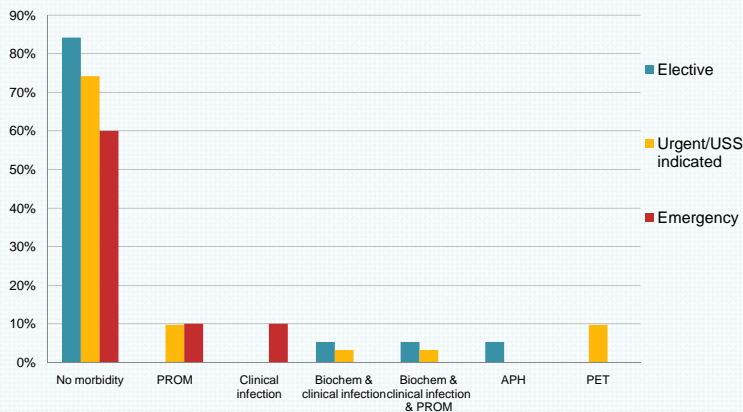
Figure 1: Vaginal swabs



Maternal outcome. Figure 4:

Maternal morbidity was good across cohorts with no cases of maternal mortality. Emergency cerclage was found to have an increased relative proportion of maternal infection with no cases in the elective or USS indicated cohorts.

Figure 4: Maternal outcome



Fetal outcome:

Fetal morbidity (defined as NICU/SCBU admission, respiratory support, neurological support, sepsis, long-term follow-up) was slightly higher in the emergency group-50% [5] (elective-32% [6]; urgent-32% [10]). However, all births with no associated fetal mortality reached 36 weeks gestation.

Conclusion

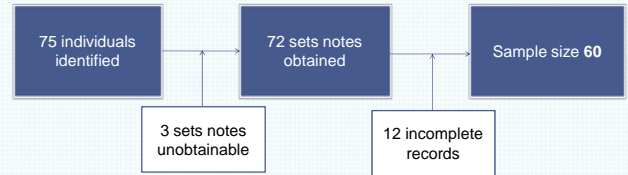
Cervical cerclage is performed 100% in accordance with local guidelines, with the exception of vaginal swab performance/documentation. Outcomes were poorer in women receiving emergency cerclage, especially when associated with a twin pregnancy. However, there is significant evidence to suggest increased length of gestation in all groups, with good outcomes if guidelines are adhered to.

References:

1. Trinder J. Cervical Incompetence: assessment and management of women with suspected cervical incompetence (Local Guidance). United Bristol Healthcare Trust, St Michael's Hospital. February 2008. 2. Final Report of the Medical Research Council/Royal College of Obstetricians and Gynaecologists Multicentre randomised trial of cervical cerclage. MRC/RCOG Working Party on cervical cerclage. Br J Obstet Gynaecol. 1993;100:516-23. 3. Gibb DM, Salafia DA. Transabdominal cervicoisthmic cerclage in the management of recurrent second trimester miscarriage and preterm delivery. Br J Obstet Gynaecol 1995;102:802-6. 4. Anthony GS, Walker RG, Cameron AD, Price JL, Walker JJ, Calder AA. Transabdominal cervico-isthmic cerclage in the management of cervical incompetence. Eur J Obstet Gynaecol Reprod Biol 1987;72:127-30. 5. Hassan SS, Romero R, Berry SM, Diaz K, Blackwell SC, Treaswell MC, et al. Patients with an ultrasonographic cervical length <15mm have a nearly 50% risk of spontaneous preterm delivery. Am J Obstet Gynaecol 2000; 182:1458-67. 6. Harger JH. Comparison of success and morbidity in cervical cerclage procedures. Obstet Gynaecol 1980;56:543-8. 7. Kunig M, Goldkrand JY. Cervical incompetence: elective, emergent or urgent cerclage. Am J Obstet Gynaecol 1999;181:240-6. 8. Hassan SS, Romero R, Maymon E, Berry SM, Blackwell SC, Treaswell MC et al. Does cervical suture prevent preterm delivery in patients with a short cervix? Am J Obstet Gynaecol 2001;184:1325-9. 9. ACOG Practice Bulletin. Clinical Management Guidelines for Obstetrician-Gynecologists. Cervical Insufficiency. Number 48, Nov 2003. 10. The Investigation and Treatment of Couples with Recurrent Miscarriage. RCOG Green Top Guideline No 17. May 2003.

Methods:

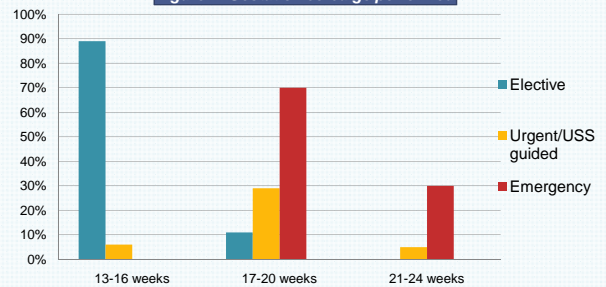
A retrospective case note review of all cervical cerclage procedures conducted at St Michaels Hospital for a 5 year period (July 2005 – July 2009). Final sample size 60 (83% of target sample). 32% [19] elective, 52% [31] urgent and 17% [10] emergency cerclages were performed



Standard 3. Figure 2: Elective cerclage performed at 13-16 weeks in accordance with local guidelines.

Elective cerclages were performed by 16 weeks in 90% [17] (1 late booking; 1 required detailed discussion).

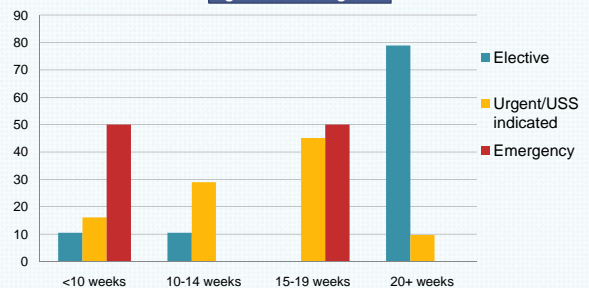
Figure 2: Gestation cerclage performed



Standard 4: Ultrasounds indicated cerclage performed in accordance with local guidelines. 100% compliant.

Standard 5: Emergency cerclage performed in the absence of infection (biochemical/clinical indication). 100% compliant.

Figure 3: Weeks gained



Cerclage outcomes. Figure 3:

Elective cerclage was associated with maximal gestation prolongation of the 3 cohorts and was in general removed at later gestations. Emergency cerclage was associated with earlier removal of suture, with SROM as the main indication, with a greater proportion achieving less than 10 weeks prolongation [5] (this group encompassed 3 twin pregnancies, 1 IUD and 1 case of post cerclage insertion infection).

Fetal mortality:

5 neonatal/fetal deaths occurred within the sample:

1. Delivered at 23 weeks – elective cerclage.
2. Delivered at 33 weeks (IUD PPROM) – urgent/USS guided cerclage.
3. Delivered at 23 weeks – urgent/USS guided cerclage.
4. Delivered at 19 weeks (infection post insertion) – emergency cerclage.
5. Delivered at 20 weeks (IUD SROM) – emergency cerclage.

Recommendations

1. Produce revised local guidance to reflect findings above and imminent release of new RCOG Green Top Guideline.
2. Highlight to the community midwives the importance of early referral and vaginal swab performance prior to referral.