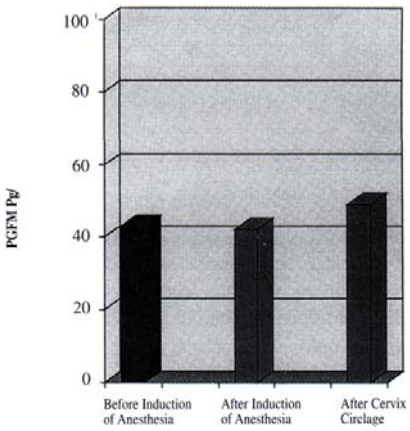

Fig.2. Plasma PGFM concentration (Mean ± SEM) before and after cervical cerclage

Figure 2 shows the cervical cerclage group where PGFM concentration was not significantly changed by induction of general anesthesia being 43.3 ± 5.4 pg/ml before and 42.9 ± 4.3 pg/ml after induction ($P > 0.1$). However, PGFM rose significantly to 67.6 ± 13.4 pg/ml which was greater than the level either before ($P<0.05$) or after induction of GA ($P<0.01$). Also, it has been noticed that the magnitude of rise in the PGFM level was more in patients with difficult insertion and longer duration of the procedure. The level of operator also had some influence on the magnitude of the rise (see Tables 2, 3 and 4). What is more interesting in this study is that despite this elevation in PGFM in cerclage group, there were no significant uterine contractions to justify using tocolytic drugs.

DISCUSSION

So far, we are not aware of any systematic attempt to estimate the extent to which variation exists in making the diagnosis of cervical incompetence. Most women who deliver prematurely have no identifiable risk factor[17]. This is disturbing in light of considerable individual variation in the pattern of cervical dilation and shortening[18]. The wide variation in the extent to which individual obstetrician perform cervical cerclage may be partly a reflection of difference in their interpretation of physical signs[19, 20]. The effect of elective McDonald suture on gestational length may have deleterious effect as reported before in randomized trial[16]. However, we were looking for the risk of uterine contractility after insertion of cerclage and we compared it with other cervical stimulating procedure, ie. transvaginal ultrasound examination. Our data showed that transvaginal ultrasound examination during pregnancy is not associated with significant elevation of PGFM, a finding which was supported by a similar study using digital vaginal examination[11]. However, PGFM was significantly elevated in circulation after insertion of cervical cerclage. This elevation of PGFM almost certainly reflects an increase in intrauterine production and release of PGFM. The other observation was that the mean basal level of PGFM in patients undergoing cerclage procedures was lower than those who had transvaginal ultrasound examination. This could be explained by the fact that the cerclage group had been in the hospital with bed rest for a day and were given pre-medication of narcotic before blood sampling. However, each patient acted as her own control and paired samples were always analyzed in the same assay.

Table 2. **Clinical and operative data on cerclage group from patient No.1 to No.10**

Patient	*Age (yrs)*	*Gravidity*	*Parity*	*Duration of operation (min.)*	*Estimated blood loss (ml)*	*Difficulty encountered*	*Level of operator*	*PGFM level after cerclage pg/ml*
1	22	5	1	7	25	No	R4	66.2
2	25	4	0	15	20	No	R3	69.3
3	36	4	0	8	15	No	R3	67.2
4	28	5	0	7	15	No	R3	63.4
5	22	4	1	15	45	Yes	R2	75.3
6	28	5	0	15	20	No	C	73.2
7	19	4	1	8	35	No	R4	63.1
8	22	5	0	9	20	Yes	C	68.2
9	27	7	0	8	25	No	R3	67.3
10	35	11	2	7	15	No	R1	66.4

R1 = first year resident, R2 = second year resident, R3 = third year resident
R4 = fourth year resident, C = Consultant

Table 3. **Clinical and operative data on cerclage group from patient No.11 to No.20**

Patient	*Age (yrs)*	*Gravidity*	*Parity*	*Duration of operation (min.)*	*Estimated blood loss (ml)*	*Difficulty encountered*	*Level of operator*	*PGFM level after cerclage pg/ml*
11	26	4	0	15	35	Yes	R1	69.2
12	24	5	0	10	20	No	R2	65.4
13	28	7	2	7	15	No	R4	63.2
14	22	4	0	10	25	Yes	R1	68.1
15	35	13	5	12	50	Yes	R3	70.6
16	27	5	0	10	30	No	C	66.2
17	29	6	1	15	15	No	R4	65.5
18	33	8	2	13	35	Yes	R2	68.9
19	24	4	0	7	15	No	R3	68.2
20	22	4	0	7	45	No	R3	68.3

R1 = first year resident, R2 = second year resident, R3 = third year resident
R4 = fourth year resident, C = Consultant

Table 4. **Clinical and operative data on cerclage group from patient No.11 to No.35**

Patient	*Age (yrs)*	*Gravidity*	*Parity*	*Duration of operation (min.)*	*Estimated blood loss (ml)*	*Difficulty encountered*	*Level of operator*	*PGFM level after cerclage pg/ml*
21	33	6	1	10	20	Yes	R1	68.2
22	28	5	1	6	15	No	R4	66.6
23	26	4	0	15	30	Yes	R4	69.3
24	28	4	1	7	15	No	R1	72.6
25	24	3	0	10	0	No	R2	66.2
26	29	4	0	10	20	Yes	R1	70.3
27	33	5	0	7	15	No	R1	63.8
28	36	10	1	15	45	Yes	C	70.5
29	27	4	4	7	20	No	R4	66.2
30	28	4	0	8	15	No	R3	65.4
31	22	3	1	9	30	No	R1	66.5
32	28	4	0	15	25	No	R1	69.5
33	26	5	0	8	30	No	R2	67.2
34	20	3	0	10	45	No	R2	66.3
35	24	3	0	5	25	No	R3	64.5

R1 = first year resident, R2 = second year resident, R3 = third year resident
R4 = fourth year resident, C = Consultant

The magnitude of the rise in PGFM concentration in cerclage group seems to be related to the operative difficulties, level of operator, and duration of procedure (see Tables 2, 3 and 4).

CONCLUSIONS

From this study we can conclude the following:

1. **Insertion of cervical cerclage may cause significant elevation of peripheral level of PGFM but it does not have a significant effect on uterine contractility to justify the routine use of tocolytic drugs.**

2. **Difficulties in insertion of cerclage and the duration of procedure has shown a positive correlation with the level of PGFM.**

2. **There is no risk of doing transvaginal ultrasound examination during pregnancy because there was no significant elevation of PGFM levels.**