

# EVALUATION OF PREGNANCY OUTCOME FOLLOWING ENCKERCLAGE OPERATION USING USG & SCORING SYSTEM

By

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## SUMMARY

The current awareness of cervical incompetence as a potential cause for recurrent pregnancy losses dates to 1940's, though the problem was merely rediscovered and publicised in that decade. Diagnosis can be made only by exclusion, as there is no certain method to diagnose incompetent os. During pregnancy, ultrasonography is one of the most important investigative method for diagnosis of the condition. The diagnostic and prognostic system of Block and Rahhal is another valuable tool in the diagnosis of incompetent os. In this study 100 cases of cervical encercilage operations were analysed.

### *Introduction*

The incompetent cervix as a cause of second trimester abortion and premature labour has attracted much attention from obstetric fraternity over the past 25 years. Today, encercilage operations offer a ray of hope to women previously denied children because of incompetent cervix.

### *Material and Methods*

A study on pregnancy outcome of 100 cases of cervical encercilage operations was carried out in Department of Obstetrics and Gynaecology, Grant Medical College, for period of one year. McDonald's method of encercilage was carried out in 85 cases, Shirodkar's in 14 cases and Wurm's technique in one case. The pregnancy outcome was evaluated

according to the scoring system of Block and Rahhal and USG diagnosis.

### *Observation*

*Age:* Maximum number of cases was in age group of 21-30 years (83%), while only 3 cases were above 30 years of age.

### *Obstetric History*

Total number of pregnancies was 318 in 100 patients, prior to cerclage and foetal survival was 150 i.e. 47%, foetal wastage was 168 i.e. 52.9%.

Thirty seven patients gave h/o D & C done in past, two patients gave h/o 1st trimester MTP. One patient was a diagnosed case of double uterus and two patients gave h/o Fothergill's operation.

### *Score Distribution of the Patients*

Patients were scored according to scoring system of Block and Rahhal

(1976). They considered following points for diagnosis of a case of incompetent os:

Previous premature deliveries or mid-trimester abortion without obvious cause, visual evidence of previous surgical or obstetric trauma to the cervix, history of painless premature labour and short labour, progressive dilatation and dilatation greater than two cms on initial examination, previous diagnosis of cervical incompetence with previous cerclage. Each of the above criteria is given a score of one. Usually greater the score the more accurate the diagnosis of incompetent os. As seen in Table I, 47 patients had scores of 3 or more, 53 patients had 2 or less.

TABLE I  
Score Distribution of the Patients

Score	Number of cases
0	5
1	22
2	26
3	35
4	12
5	00

#### Gestational Age at the Time of Cerclage

As observed in Table II maximum cases were operated upon around 16 weeks of gestation.

TABLE II

Stage of gestation in weeks	No. of cases	Stage of gestation in weeks	No. of cases
Abortions	00	24	14
14	16	26	06
16	27	28	07
18	06	30	01
20	13	32	01
22	09	—	—

Routine laboratory and cytological investigations were carried out in all patients, while ultrasonography for diameter of internal os was carried out in 48 of the 100 cases. All patients had diameter of 14 mm or more and all except one went to term. As shown in Table III evaluation of the cases by Block and Rahhal scoring system justified tightening of the incompetent cervixes as diagnosed by USG.

TABLE III  
Pregnancy Outcome in 100 Cases of Cervical Encerclage

Outcome	No. of cases
Abortions	4
Preterm Normal Deliveries	18
Preterm still births	2
Full term normal deliveries	58
Full term still births	1
Full term Breech delivery	1
Full term LSCS	13
Full term forceps	3

#### Pregnancy Out-come

As seen in Table IV, 76 patients went to term. Twenty patients had preterm deliveries while 4 patients aborted. Arcuate uterus was detected in one case at the time of LSCS.

Cushner (1963), Seppala and Vera (1971) realised the need for standardization in selection of patients however, it was Block and Rahhal (1976) who introduced the diagnostic and prognostic scoring system based on clinical findings and obstetric History.

**Success Rates:** Table V shows that success rates rose significantly in present study as well as that of various authors, after encerclage operation. Success rate in this series rose from 17.5% to 86.0% and there was a decline in foetal wastage

TABLE IV  
USG Findings in 48 Patients

Diameter of interval os in mm.	No. of cases	Score	Outcome
20	4	3	4 FTND
18	4	3	4 FTND
17	8	2	1 FTLSCS
		3	7 FTND
16	4	3	4 FTND
15	16	3	1 FTLSCS
		3	1 PRND
		3	14 FTND
14	12	3	10 FTND
		2	1 PRND (died)

TABLE VI  
Success Rates of the Different Series

Name and Year of Series	No. of cases	Success rates	
		Before Cerclage	After Cerclage
Barter, 1958	110	11.0%	76.0%
Gans, 1966	250	13.0%	82.0%
Seppala, 1971	125	—	83.0%
Lauersen, 1973	143	—	83.0%
Kuhn, 1977	248	28.0%	81.0%
Block, 1976	31	21.0%	80.0%
Menjoge and Vijayker, 1979	40	8.1%	87.5%
Harger 1980	251	17.5%	81.0%
Present series	100	23.0%	86.0%

after cerclage operations, from 82.7% to 14.0%.

Low birth weight played a major role in 7 of the 10 perinatal losses. In present study, the incidence of preterm births was 15% in the indicated group (scores > 3) whereas it was 28.6% in Prophylactic group (scores < 3).

Foetal salvage ration in present study and that of other authors is shown in Table VI. Menjoge and Vijaykar reported best salvage ratio as the majority of the patients had score of 3 or more. In present study, foetal salvage ratio in in-

TABLE VII  
Foetal Salvage Ratios by Various Authors

Author	Foetal salvage ratio %
Easterdy 1959	5.9
Barter, 1958	6.9
Seppala <i>et al</i> 1971	2.7
Merk S. Robboy, 1973	2.7
Block and Rahhal, 1976	3.8
Menjoge and Vijaykar, 1979	10.93
Present study	4.91

icated group (scores > 3) was 6.45% whereas in prophylactic group (scores < 3) it was 2.78%.

Ultrasound scanning is an objective method of an early diagnosis of incompetent os, and may enable the patient to save a wanted pregnancy.

Mehran (1980) stated that if measured diameter was 15 mm during 1st trimester and 20 mm or more during 2nd trimester, it was diagnostic of incompetent os. In our study, cerclage was beneficial to almost all the patients, in whom scanning was done. 47 of the 48 patients went to term.

### Conclusions

Various methods for diagnosis of incompetent os in between pregnancies or during pregnancy are available. Today USG forms one of the most reliable tool for an early and accurate diagnosis of the condition. The main advantage is that it can be used during pregnancy without any risk to foetus or mother.

Standardization of criteria for patient selection as devised by Block and Rahhal (1976) also by Lazer *et al* (1984) is essential.

Cervical encercilage is traditional but unproven treatment for recurrent preg-

nancy loss. Its empirical use may obscure the other important causes of recurrent pregnancy loss and thus it should be preceded by comprehensive diagnostic evaluation.

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