

Cervical cerclage for the treatment of patients with placenta previa

M. TESSAROLO - R. BELLINO - S. ARDUINO - L. LEO
T. WIERDIS - A. LANZA

Summary: Over a ten year period, placenta previa occurred in 103 instances among 12,965 deliveries.

In six of these, cervical cerclage was undertaken to prevent severe bleeding while prolonging pregnancy between the 24th and the 30th weeks of gestation, according to the McDonald technique. We performed cesarean section delivery in all cases.

The medium prolongation of the pregnancy was of 8.2 weeks and the foetus weighed from 1,820 to 3,360 g.

No complications due to fetal respiratory distress were observed. No patients needed transfusions. Postpartum and the puerperium were regular. These results support the use of cervical cerclage for the treatment of patients with symptomatic placenta previa early in gestation.

Key words: Placenta previa; Cervical cerclage.

INTRODUCTION

Placenta previa has an incidence of between 0.4% and 0.6% ^(1,2).

However, ultrasonographic examination allows for the identification of 5-28% of patients having a low placenta implantation, 90% of which show a normal position at delivery at term ⁽³⁾.

There seems to be a higher risk of abortion, bleeding, anemia, intrauterine growth retardation, premature delivery,

cesarean section delivery and perinatal mortality in these patients ^(4,5).

The placenta may, at times, be located on the lower part of the front walls of the uterus without being previa, in which case cesarean section delivery is performed for other reasons. In this case the placenta must be stripped and/or cut before extracting the foetus, which may cause serious haemorrhage. Perinatal mortality in women with placenta previa has gradually decreased and is now 8-12% ⁽⁶⁾. This decrease may be ascribed more to better neonatal care rather than to satisfactory obstetrical treatment ⁽¹⁾. Since 1959 Lovest, and other Authors, have suggested the use of cervical cerclage in patients with placenta previa ⁽⁷⁾. He proposed that the mechanism responsible for bleeding is the partial detachment of the placenta due to the progressive formation

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of the lower uterine segment and the dilatation of the lower uterine orifice.

Our experience of the use of the cervical cerclage in six patients with placenta previa is reported.

MATERIALS AND METHODS

One hundred and three patients with placenta previa underwent cesarean section delivery in Department B of the Gynaecology and Obstetrics Institute of the University of Turin, Italy, from January 1983 to December 1992. During this period there were 12,965 deliveries in our department.

Asymptomatic patients with placenta previa diagnosed by means of ultrasonic examination before the 28th week of gestation attended the outpatient department regularly for ultrasound and blood tests. After informed consent was obtained from these patients they were hospitalized and treated with absolute bed rest and tocolitics.

In case of vaginal bleeding, an « expectant management » was carried out with tocolytic therapy, check-ups and blood tests to keep hemoglobin > 11 g/dl and the hematocrit at 30-32%.

If there was no bleeding or contractions for four or five days the patients were allowed to go home, provided they agreed to periodic ultrasound and blood tests, bed rest and had telephone disposability. Only ten women met these criteria. The others remained in hospital.

The goal of the treatment was to reach the 36th week for lung maturity of the foetus.

Cervical cerclage was done in six cases between the 24th and 30th week. We performed the procedure in asymptomatic patients after cessation of bleeding under general anaesthesia using a 2 mm double Mersilene band fixed around the cervix, in a purse-string fashion, according to the technique described by McDonald ⁽¹¹⁾.

Hospital dismissal was possible after 3-4 days tocolytic therapy and bed rest was continued. The patients underwent weekly check-ups and were told to go to the clinic at the first signs of vaginal blood loss.

RESULTS

Our patients with asymptomatic placenta previa who underwent cervical cerclage between the 24th and the 30th week had cesarean section delivery between the 33rd and 37th week. The diagnosis of

Table 1. — Perinatal outcome in patients with placenta previa.

Authors	Years	Perinatal mortality rate %
Grant ⁽¹⁰⁾ . . .	1955	11.9
Barry <i>et al.</i> ⁽¹⁰⁾ .	1958	8.0
Foote <i>et al.</i> ⁽¹²⁾ .	1960	12.5
Foscolos ⁽¹⁰⁾ . . .	1964	8.1
Pedowitz ⁽¹³⁾ . . .	1965	12.4
Hibbard ⁽¹⁴⁾ . . .	1969	14.0
Crenshaw <i>et al.</i> ⁽¹⁵⁾	1973	37.0
Naeye ⁽¹⁶⁾ . . .	1978	7.3
Brenner <i>et al.</i> ⁽²⁾ .	1978	21.3
Cotton <i>et al.</i> ⁽⁶⁾ .	1980	12.6
Silver <i>et al.</i> ⁽¹⁷⁾ .	1984	4.2
D'Angelo <i>et al.</i> ⁽¹⁾	1984	10.5
Newton <i>et al.</i> ⁽³⁾ .	1984	4.3
Mc Shane <i>et al.</i> ⁽¹⁸⁾	1985	8.1
Droste and Keil ⁽¹⁹⁾	1994	2.7

placenta previa (complete or partial) was confirmed by inspection during the cesarean section delivery.

The medium prolongation of the pregnancy was of 8.2 weeks and the foetus' weighed from 1,820 g to 3,360 g. No complications due to foetal respiratory distress were observed. Patients treated with cerclage had a favourable outcome: no patients needed transfusion, and postpartum and the puerperium were regular.

Perinatal mortality decreased (Table 1) from 37% in 1973 to 2.7% in a more recent series of cases. The decrease of perinatal mortality may be explained by the improvement in intensive therapy for premature babies by the use of blood transfusions, antibiotic therapy, improvement in anaesthesia (especially the use of the loco-regional peridural anaesthesia, as is practised in our Institute) cardiotocographic monitoring amniotic fluid analysis for fetal lung maturity, and by the use of corticosteroids. Table 2 reports perinatal mortality of 41 cases taken from literature including our series of cases (all the studies had a 0% mortality rate).

Table 2. — *Perinatal outcome in patients with placenta previa submitted to cervical cerclage.*

Authors	Years	N. of cases	Perinatal mortality rate %
von Friesen ⁽⁹⁾ .	1964	7	0
Cameron ⁽⁸⁾ . .	1983	14	0
Arias ⁽⁸⁾	1988	14	0
Present study . .	1966	6	0
Total		41	

DISCUSSION

The treatment of placenta previa entails bed rest, the use of two sympathomimetic drugs to prevent contractions and blood transfusions if there is excessive blood loss. Silver *et al.* obtained a perinatal mortality of 4.3% using an aggressive treatment including tocolitic therapy, amniocentesis to evaluate the maturity of the foetus and blood transfusions to keep hematocrit at 35% ⁽¹⁷⁾.

A different approach in the treatment of the placenta previa was suggested by Lovest in 1959 and by von Friesen in 1964 and 1972 ^(7, 9, 10). These Authors believed that cervical cerclage has a positive effect on the outcome of these patients. Vaginal bleeding in patients with placenta previa could be due to the progressive formation of the lower uterine segment that produces placental detachments and breakage of the marginal veins at the periphery of the placenta. Cerclage can be useful in slowing down and blocking this mechanism.

During the meeting of the Obstetricians and Gynaecologist's Association in 1983 Cameron referred the results of his study on 14 patients with placenta previa treated with cervical cerclage ⁽⁸⁾. He demonstrated that it was possible to have a better outcome than in untreated patients prolonging the pregnancy by six weeks.

In 1988, Arias did a case-control study and saw that the patients subjected to

cerclage prolonged their pregnancies on average by 9 weeks and neonates weighed more ⁽⁸⁾.

The first problem is when to perform the cervical cerclage. It may be done at the first bleeding episode or before it occurs in those patients in which placenta previa has been diagnosed with ultrasound examination. In our study, we treated patients between the 24th and the 30th week with symptomatic placenta previa.

Some studies have shown that 97% of asymptomatic women who had ultrasound evidence of low implantation of the placenta, at the end of the pregnancy did not have placenta previa, but persisted to be at higher risk of abortions, bleeding and growth delay. It may well be worthwhile considering also these cases for cerclage as a preventive measure ^(3, 4, 20).

In conclusion, patients with cervical cerclage have significant better perinatal outcome than those only treated with tocolytical drugs, as indicated by more advanced gestational age at delivery, higher birth weight, and fewer neonatal complications.

The good results obtained encourage us to continue this kind of treatment in patients with symptomatic placenta previa. The goal of cervical cerclage is to slow down the expansion of the 3-5 mm portion of myometrium above the internal cervical os from which the lower segment will develop. When the implantation of the placenta is at that level there is a delayed risk of detachment after cervical cerclage and thus the possibility of a longer pregnancy.

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Address reprint requests to:
A. LANZA
Institute of Obstetrics and Gynecology
Via Ventimiglia, 3
10100 Torino (Italy)