Transabdominal Cervico-isthmic Cerclage: State of the Art

F. BORRUTO - F. FERRARO

Summary: The aim of this study was to evaluate the long-term results of transabdominal cervico-isthmic cerclage according to the Vecchietti technique in patients with cervico-isthmic incompetency diagnosed by hysterosalpingography.

The patient sample consisted of 36 women operated on in the Verona University Institute of Obstetrics and Gynaecology from 1975 to 1981 and 18 women operated on in the Clinic of Obstetrics and Gynaecology, Lyon.

The results in the Verona study population show that in 28 cases (77.7%) the operation was crowned with success by the birth of live, viable neonates; intrauterine death occurred in 2 cases (5.5%), miscarriage in 3 (8.3%) and sterility in 3 (8.3%).

The Lyon results show that in 15 cases (83.3%) the pregnancies resulted in the birth of live neonates, while sterility occurred in the other 3 (16.6%).

Overall analysis of the 54 patients shows that the abdominal cerclage was successful in 43 cases (79.6%). Only in 11 cases were negative results obtained: 6 cases of sterility (11.1%), 3 miscarriages (5.5%) and 2 intrauterine deaths (3.7%).

The data presented demonstrate the validity of the operation when performed in non-pregnant women in the presence of proven cervico-isthmic incompetency.

INTRODUCTION

The correction of cervico-segmental incompetency is a controversial issue in obstetric treatment. Miscarriage and preterm birth often prove undesired complications.

Cervical cerclage, whether with [1] or without colpotomy [2], has proved inadequate in those cases in which there is an effective anatomical alteration, and is the root cause of the repeated miscarriage syndrome.

Abdominal cerclage was originally proposed by Benson and Durfee [3] in 1965, who advised performance of the operation at the start of pregnancy. Vecchietti *et al.* [4] in 1975 modified the technique, suggesting performance of the operation in the non-pregnant woman for a series of technico-anatomical reasons (on the one hand, the uterine vascularization is less rich, and, on the other, it proves easier to apply the right tension to the thread).

In the present study, our aim has been to evaluate the usefulness of cervico-isthmic cerclage performed by the abdominal route in cases of cervico-segmental incompetency diagnosed by hysterography.

The patient sample consisted of all cases operated on in the Verona University Institute of Obstetrics and Gynaecology over the period from 1975 to 1981 and all cases operated on in the Lyon Clinic of Obstetrics and Gynaecology.

Institute of Obstetrics and Gynaecology, University of Verona, Verona (Italy)

Table 1. – *Long-term results.*

	Prof. Vecchietti's series (1975-1981)	Prof. Dargent's series	Total
N. cases	36	18	54
Sterility	3 (8.3%)	3 (16.6%)	6 (11.1%)
Abortion	3 (8.3%)	0	3 (5.5%)
Intrauterine death	2 (5.5%)	0	2 (3.7%)
Live babies	28 (77.7%) (*)	15 (83.3%) (**)	43 (79.6%)
Delivery method:			
caesarean section	28	15	43
other	—	—	—
Cerclage:			
left *in situ*	28	15	43
removed	—	—	—

(*) In 2 cases the caesarean section was performed before week 36.
(**) In 1 patient, a spontaneous abortion occurred prior to term.

MATERIAL AND METHODS

Over the period from 1975 to 1981, 57 abdominal cerclages were performed in patients with cervico-isthmic incompetency diagnosed by hysterosalpingography in the Verona University Institute of Obstetrics and Gynaecology (Prof. Vecchietti's series). All patients reported one or more miscarriages in their obstetrical histories. The cerclages were performed according to the Vecchietti technique. Included in this study, however, were only miscarriages occuring in the 1st or 2nd trimesters and without previous live-born babies (36 cases). In 4 of these patients, a previous, unsuccessful cerclage had been performed via the vaginal route.

Comparative analysis was done in 24 cases, well matched for the actual indication and treated by the same technique in the University Clinic of Obstetrics and Gynaecology, Lyon, Department K, directed by Prof. D. Dargent. In this study, however, only 18 cases were considered, owing to the fact that the other 6 were non-evaluable for our purposes, since two operations were too recent (performed less than a year ago), one pregnancy is still in progress, and three patients escaped follow-up.

All patients reported one or more late miscarriages in their obstetrical histories despite correct obstetrical treatment including absolute bed-rest and cerclage by the vaginal route in the period of election (1st trimester). There had been no previous live-born babies in any of these cases. In only one case was the operation performed durin pregnancy.

RESULTS

The long-term results in Vecchietti's series show that in 36 patients undergoing the operation, the cerclage proved successful in 28 (77.7%) with the birth of live, viable neonates (26 of the pregnant women gave birth at term and 2 prior to term); intrauterine deaths occurred in 2 cases (5.5%), miscarriages in 3 (8.3%) and sterility due to anovulation in 3 (8.3%) (Table 1).

All babies were delivered by caesarean section after the 36th week, with the exception of two cases in which caesarean section was performed at 30 and 34 weeks, respectively.

Abdominal cerclage proved successful in 3/4 cases previously treated unsuccessfully with cerclage via the vaginal route.

In all cases the cerclage was left *in situ* after the caesarean section.

The long-term results in Dargent's series show that of 18 patients undergoing abdominal cerclage, 15 (83.3%) had pregnancies with delivery at or near term with birth of live, viable neonates (in one patient birth at term was preceded by a spontaneous abortion), while sterility occurred in the other 3 cases (16.6%) due, respectively, to tubal damage secondary to postoperative sepsis, to anovulation, and to a male factor (Table 1). All pregnancies had an uneventful course, and all babies were delivered by caesarean section. The cerclage was left *in situ* in all cases.

From analysis of the 54 patients studied (Table 1) it emerges that the operation proved successful in 43 cases (79.8%) with the birth of live, viable neonates. The cerclage proved unsuccessful or useless only in 11 cases: 6 cases of sterility (11.1%), 3 of miscarriage (5.5%) and 2 of intrauterine death (3.7%).

DISCUSSION

The indication for execution of cervical cerclage has been subject to the repercussions of surgical " fashions ". To assess its efficacy one must bear in mind variables such as accurate indication, the time the operation is performed, and correct operating technique.

The frequency of execution of cerclage in France ranges from 0 to 22% according to Tournaire (unpublished data). These figures reflect the different attitudes of the various schools.

There can be no doubt that factors militating against performance of a transabdominal cerclage include the lengthy hospitalization period required, the need for adjuvant treatment (betamimetics) and, in some cases, its inefficacy, complications and associated intrauterine deaths.

Correct indication remains the basis of effective treatment. In the International Study of the Royal College of Obstetricians and Gynaecologists, interim results were given for 905 pregnancies at moderate or high risk ([5]). While there was no difference in overall prematurity rate in the groups with and without cervical cerclage via the vaginal route, the percentages of praterm births (prior to week 33) were 13% in the cases in which the cerclage was perfomed, and 18% in those cases in which is was not performed; moreover, birth weights below 1500 g were recorded in 11% in the cerclage group and in 16% in the non-cerclage group.

Comparison of results in terms of reduced perinatal mortality in cerclage patients bordered upon statistical significance, while reduced prematurity was found to be significant in cases with a previous history of multiple abortions.

If we consider, then, that this study shows no strongly significant differences from the statistical point of view and that other randomized studies have also failed to reveal any real benefit, the validity of cervical cerclage via the vaginal route remains questionable.

Other points worthy of comment are operating technique and the indications for abdominal cerclage.

It is good policy to dissect from both sides the triangular space situated outside the uterine isthmus below the loop of the uterine artery and above the uppermost cervical artery. The nonreabsorbable thread of not too large a calibre is anchored to the anterior surface of the isthmus and knotted without excessive tension. The knot must be situated at the level of the torus uterinus.

Indications which are no longer justifiable nowadays are twin pregnancies without other major risk factors, and previous conization. Indications which remain valid, on the other hand, are previous abortion in the 2nd trimester and repeated premature births, as well as anatomical damage due to cervical lesions affecting the internal uterine orifice.

CONCLUSIONS

In the light of the current state of the art, cerclage via the vaginal route is questionable, the operation being of doubtful curative efficacy.

In most cases the indication is late or incorrect and the result is disappointing. The diagnosis of cervico-isthmic incompetency should properly be formulated on the basis of history, clinical and instrumental data.

The data presented demonstrate the validity of cervico-isthmic cerclage performed via the abdominal route in non-pregnant women. Intrauterine death for other reasons and delivery by caesarean section are the only negative considerations with regard to abdominal cerclage. The results are undoubtedly positive in the presence of proven cervico-isthmic incompetency. For other indications the results are distinctly inferior: the pathology involved is certainly partly responsible for multiple abortion, but it is impossible to say to what extent the cerclage improves or worsens the prognosis.

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