

Cervical cerclage for malformed uterus

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Summary

The role of cervical cerclage was evaluated in six pregnant women with anomalous uterus. Early prophylactic cerclage according to the Shirodkar and McDonald technique was done on all cases of uterine malformation (except septate uterus) with or without cervical incompetence in association with progesterone and antispastic therapy.

Improvement in obstetrical outcome was noted after cerclage. Even if no doubt exists as to the need for cerclage in cases of cervical incompetence, the concept of routine prophylactic cerclage in all cases of uterine anomalies should be considered.

Key words: Anomalous uterus; Cervical cerclage.

Introduction

Women with uterine abnormalities have a fertility decrease and a higher frequency of obstetrical complications when compared to the total population [1, 2, 3, 4, 5]. The most frequent complications are spontaneous abortions (24-36%), extrauterine pregnancies (3%), premature deliveries (15-19%) and anomalous presentations [1, 4, 6, 7, 8, 9, 10]. These complications may be due to an anomalous uterine cavity, impaired local luteinization of the endometrium and vascular supply, and cervical incompetence [1].

A 30% association between cervical incompetence and uterine deformity has been reported in the literature. There is a 38% association of bicornuate uterus, 20% didelphys uterus, 18% septate uterus and unicornus uterus with cervical incompetence [1, 11].

In 1977 Ferraris was the first to recommend cerclage for pregnant women with uterine anomalies, based on his ten year experience [11].

In 1987 the results of a study carried out in our Department on 52 pregnant patients with cervical cerclage from 1978 to 1984 for uterus deformities were published [12].

This paper reports a further study carried out to determine the effect of cervical cerclage on pregnancy outcome in patients with uterine anomalies.

Materials and Methods

From January 1978 to June 1995 1,182 cervical cerclages were done in Department B of the Gynecology and Obstetrics Institute at the University of Turin, Italy; 86 of them were done on patients with anomalous uterus.

The diagnosis of uterine malformation was established by hysterosalpingography, hysteroscopy, ultrasonic examination and laparoscopy. Diagnosis was confirmed at cesarean section delivery (90% of cases) or at spontaneous delivery by manual inspection.

Classification of the deformities was revised on the basis of the medical records and the other diagnostic proceedings in the case notes. The uterine deformities were then classified according to the clinical classification proposed by the American Fertility Society in 1988: arcuate (n. 19), bicornuate (n. 23), bicor-

nis-bicollis (n. 8), didelphys (n. 7), unicornuate (n. 12), subsetus (n. 7) and septate-uterus (n. 10) [13].

As shown in figure 1 cerclage was done on 40 patients according Shirodkar's technique and on 46 patients according to McDonald's technique [14].

Postoperative treatment was intramuscular progesterone and β mimetic treatment from the 16th week.

Results

The incidence of infertility (incapacity to conceive after 2 years of active and fertile sexual intercourse) was low even when added to causes other than uterine malformation.

Fifty-four of the 86 patients who underwent cerclage had already had pregnancies. Eighteen percent of them brought it to term, 3.7% had preterm delivery with birth of a vital foetus, 20.3% had an abortion between the 14th and the 22nd week or a preterm delivery of a dead or non-vital foetus, 55% aborted before the 14th week and 1.8% had an ectopic pregnancy. 22% had a vital and viable foetus (Table 1).

Table 2 shows the outcome percentages for the various deformities. Of those with arcuate uterus 14.2% had a vital and viable foetus as did 23.8% of those with a bicornuate uterus. Only two patients with bicornis-bicollis uterus brought their pregnancy to term, as did one out of three with didelphys uterus. The lowest success percentage (12.5%) was found in patients with septate uterus.

Fertility improves with the use of cerclage: 75.6% of the patients had a vital and viable foetus, 19.7% aborted between the 14th and 26th week or had a premature delivery with a dead or non-vital foetus.

Most patients in this group had recurrent abortions, however, uterine malformation was not the only cause of pregnancy failure.

Discussion

Uterine malformations are associated with higher infertility and higher incidence of obstetrical complications compared to normal pregnancies [1, 2, 3, 4, 5].

Table 1. — Reproductive outcomes before and after cerclage in patients with uterine malformations.

	Before cerclage	After cerclage
Incapacity to achieve pregnancy	5	0
Ectopic pregnancy	1	0
Early abortion	30	4
Premature and late abortion	11	17
Preterm delivery	2	15
Term delivery	10	50

Table 3. — Improvement in fetal survival by cervical cerclage for anomalous uterus.

Authors	Years	% of patients who delivered live born infants after cervical cerclage
Ferraris <i>et al.</i> [11]	1977	83.3%
Blum <i>et al.</i> [15]	1977	70%
Surico <i>et al.</i> [12]	1987	98%
Seidman <i>et al.</i> [3]	1991	88%
Golan <i>et al.</i> [1]	1992	79.2%
Bider <i>et al.</i> [16]	1992	85.2%
Acien <i>et al.</i> [5]	1993	62%
Present study	1996	75.6%

The benefits of tocolitical and spasmolytic therapy are contradictory. Therefore, many authors have suggested the preventive use of the cervical cerclage (Table 3).

In agreement with data published by other authors and that in our study we recommend cervical cerclage as the first treatment for pregnancies with uterine anomalies [11, 12]. Metroplasty should be considered only in the

Table 2. — Reproductive outcomes before cerclage in patients in relation to different uterine malformations.

	Arcuates	Bicornis	Bicornis bicollis	Didelphys	Unicornuate	Subseptus	Septate	All malformations
No. Pts.	19	23	8	7	12	7	10	86
Incapacity to achieve pregnancy	1	—	2	2	—	—	—	5
Ectopic pregnancy	1	—	—	—	—	—	—	1
Early abortion	8	10	1	1	3	1	6	30
Premature and late abortion	3	6	—	—	—	1	1	11
Preterm delivery	—	2	—	—	—	—	—	2
Term delivery	2	3	1	—	2	1	1	10

case of repeated failure and or when the combination of medical and surgical therapy fails.

Pregnancy in a bicornuate uterus with one hypotrophic cornus normally has a poor prognosis. The hypotrophic cornus in a bicornuate uterus is sometimes surgically removed making a cervical cerclage possible on the residual trophic cornus during pregnancy.

Cervical cerclage is normally removed at the 37th-38th week of pregnancy in patients with bicornis unicollis or bicornis bicollis uterus and during cesarean section. The same conduct is advisable at the beginning of a spontaneous term delivery.

On the other hand, we prefer spontaneous delivery in

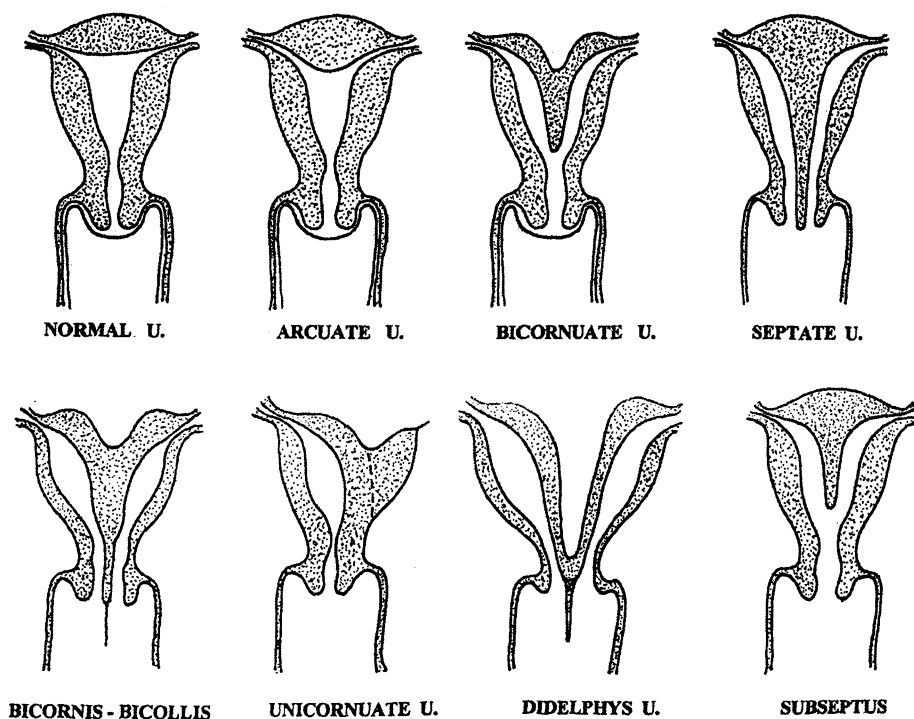


Figure 1. — Classification of uterine malformations.

preterm pregnancy for the favourable lower fetal weight even in those patients with subseptus uterus and especially in arcuate uterus after having removed the cervical cerclage.

These results show that patients presenting congenital uterine malformation benefit from cervical cerclage: the mechanism of this favourable outcome might be explained by the higher incidence of "primary" congenital cervical incompetence in this group of women or a "relative" mechanical cervical incompetence caused by an increase in the intrauterine pressure because of a small, distorted cavity [17].

Roddick *et al.* hypothesized that cervical resistance to pressure is decreased in the anomalous uterus because of abnormal anatomy, resulting in an abnormal ratio between muscular and connective tissue [18].

In another study the success of cervical cerclage was attributed to biochemical rather than morphologic causes through a control of the uncoordinated contractions of the pregnant malformed uterus [19].

Ferraris suggested that cervical cerclage may inhibit cervical-reflected involuntary stimuli, blocking contractions and resulting in a better expansion of the corpus or emicorpus uteri. Thus, the cavity of the uterus may be hospitable to the ovum for a long time [11].

Because of the risk of abnormal contraction of the hyperdistended myometrial fibres during vaginal labour, in agreement with other studies, our school recommends cesarean section for women with anomalous uterus; we are able to maintain pregnancy with medical and surgical treatment but we can not expect a good performance by an anomalous uterus during a term delivery [11, 12].

Some patients underwent some vaginal labour during the first period of our study, but this cannot be considered as ideal management.

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