PROPOSAL OF NEW GRADUAL DILATION METAL DILATORS

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Summary: The Authors suggest a new conceived line of metal cervical dilators, testing them on a group, made up of 69 patients, who will undergo Voluntary Pregnancy Interruption (VPI). Comparing the results with those obtained within a further test-group, made up of 69 women who have undergone a cervical dilation, performed by traditional Hegar dilators, it has been noticed that the new dilators are less traumatic on the cervical canal of the uterus; they can be used more easily and a wider employment is foreseen.

INTRODUCTION

As a usual treatment in obstetric and gynaecologic practice, the cervical canal dilation is normally performed either by mechanical devices (solid dilators, like Hegar, Hauckwins, Pratt, etc.) or by sea girdles (laminariae), or pharmacological appliances.

Pharmacological appliances, obtained by systemic or local treatments, which are based on oxytocic substances, particularly prostaglandins, have nowadays proved to be unpractical, owing to the high incidence of collateral effects, such as nausea, vomiting, hypertension, metrorrhagias, uterine cramps, diarrhoea, and tachycardia ([1, 2, 3, 4, 5]).

Owing to their rare possibility of migration into the uterine cavity, to their incarceration into the cervical canal or to a possible breaking, which causes the passage of some pieces through the uterine body, the alternative provided by the sea-girdles (laminariae) has proved to be a valid appliance for cervical dilation, but it is not suitable for the present practical needs of women and for the ease for the operators ([6, 7, 8]).

At present, solid metal dilators are the most used cervical canal dilation appliances, but severe, short and long-term complications may occur.

Among the immediate complications it is necessary to emphasize the traumatic breaking of the uterine portio, along with conspicuous haemorrhage, cervix inflammation and uterine perforation; among the long-term complications, spontaneous abortions, premature births, premature breaking of the membranes, cervical-isthmian incompetence ([9, 10, 11, 12, 13, 14]) can be quoted.

PURPOSES AND AIMS

This work is designed to check a line of new metal dilators, (see picture) comparing them with the dilators used previously. Thanks to their new structure, they combine the functional capacity of the present metal dilators to the gradual dilation of the sea-girdles, thus considerably reducing the occurence of immediate and long-term complications.

MATERIALS AND METHODS

138 women, who had required Voluntary Pregnancy Interruption (VPI) before the third month, have been tested. A cervical dilation was performed on 69 women, using the Hegar dilator (group A), while the suggested dilators have been used for the other 69 patients (group B). There was a randomized choice, made by the patients, for one of the two types of dilators.

The average age of the patients was between 17 and 45 (see fig. 1), while the gynaecological

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formula is shown in fig. 2. The surgical and anaesthesiological procedures for the VPI are shown in tables 1 and 2.

A measurement of the Internal Uterine Orifice (IUO) performed (while the biggest Hegar dilator was infeeded in without causing any dilation) at first during the interruption before starting the actual operation, and then during the check-up, one month after the operation.

Before VPI, all the patients underwent a gynaecological examination, echographia, routine blood-tests, ECG and anaesthesiological examination, which provided standard results.

The patients who underwent VPI were discharged from hospital on the same day, after an adequate per-os therapy prescription, based on antibiotics and tonics for the uterus.

The new dilators consist in a line of 5 metal instruments, shaped like the trunk of a cone, which form the working part, besides a cylindrical part which is the handle. The total length of each instrument is 190 mm. The working part length amounts to 50 mm; this length stands for a function of the uterine body's depth which is intended to be the gap between IUO and the uterine bottom.

The minimum and maximum diameters of the trunks of the cone have been calculated according to the variation of the vertex angle, amounting to half a degree, and the calculation has been made on the whole line of instruments; a calculation has been made on the minimum length (referred to the mininmum depth of the uterine body) and it was narrower than the next instrument's diameter; this can be noticed in table 3 and in fig. 3, using the following formula: $\varnothing \text{ max} = 2 (\text{ltga} + \frac{1}{2} \varnothing \text{ min})$, where

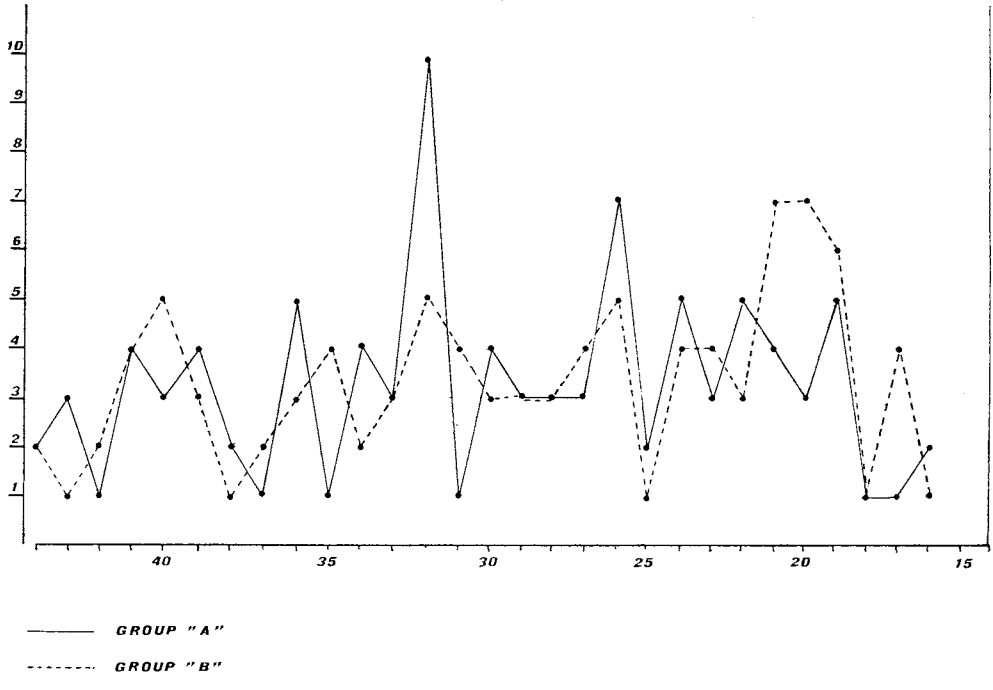


Fig. 1. — Age.

$\varnothing$ max stands for the trunk of cone base diameter; α stands for the vertex half-angle; $\varnothing$ min stands for the trunk of cone minimum diameter, and 1 stands for the available length.

RESULTS

The IUO was measured before the operation and after a month from the day of the operation; the two diameters were compared with each other and with the maximum dilation gained during the operation. At the control examinations com-

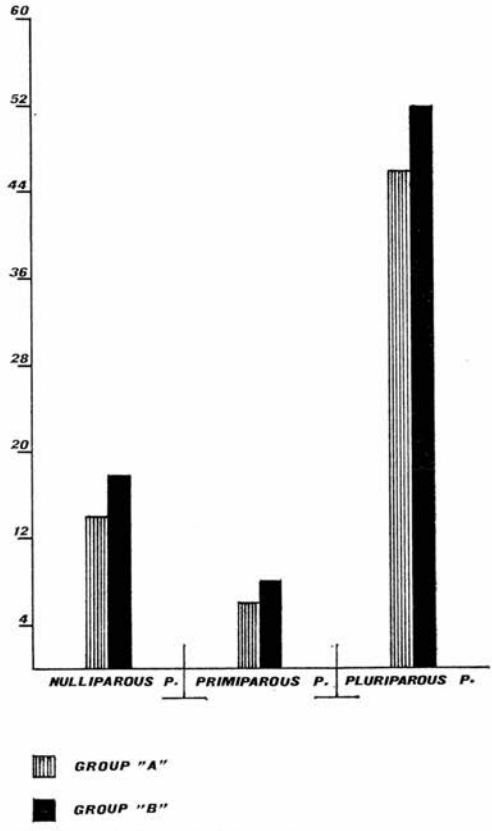


Fig. 2. — Obstetrical formula.

paring the diameters (table 4), we noticed that, the IUO was equal or equally decreased in the two groups, while it was considerably increased in group A ($p = 0.050$).

Comparing the IUO values only within nulliparous patients (including also the pluriparous patients who had previously undergone a caesarian operation), the IUO proved to be decreased, with the indentical proportion, within the two subgroups, while it proved to be considerably increased within group A (table 5).

Relating the IUO values to the different cervical dilation, performed during the operation (table 6, 7) it can be noticed that, gaining an IUO dilation for a maximum of 10 mm, the results are the following:

– unvaried IUO for 20 patients out of 26 who had undergone a dilation performed by the suggested dilators, while the proportion is 16 out 24 within the test group;

Table 1. — *Operations.*

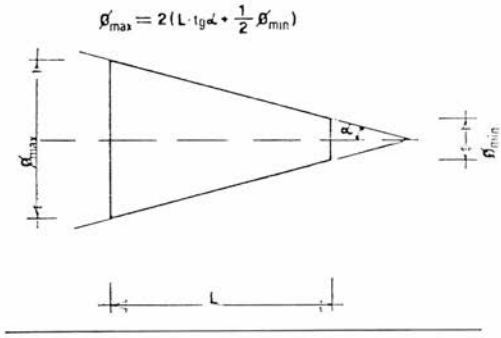
Curettage	99	71.7%
S.C.	40	28.3%

Table 2. — *Anesthesia.*

	Group	
	A	B
General	48	33
Analgesia	20	30
Local	1	0

Table 3.

Lg 50 mm.		
L	Ø min	Ø max
1,5	3,00	5,60
2,0	4,00	7 50
2,5	5,20	9,60
3,0	7,00	12,30
3,0	8,00	13,30



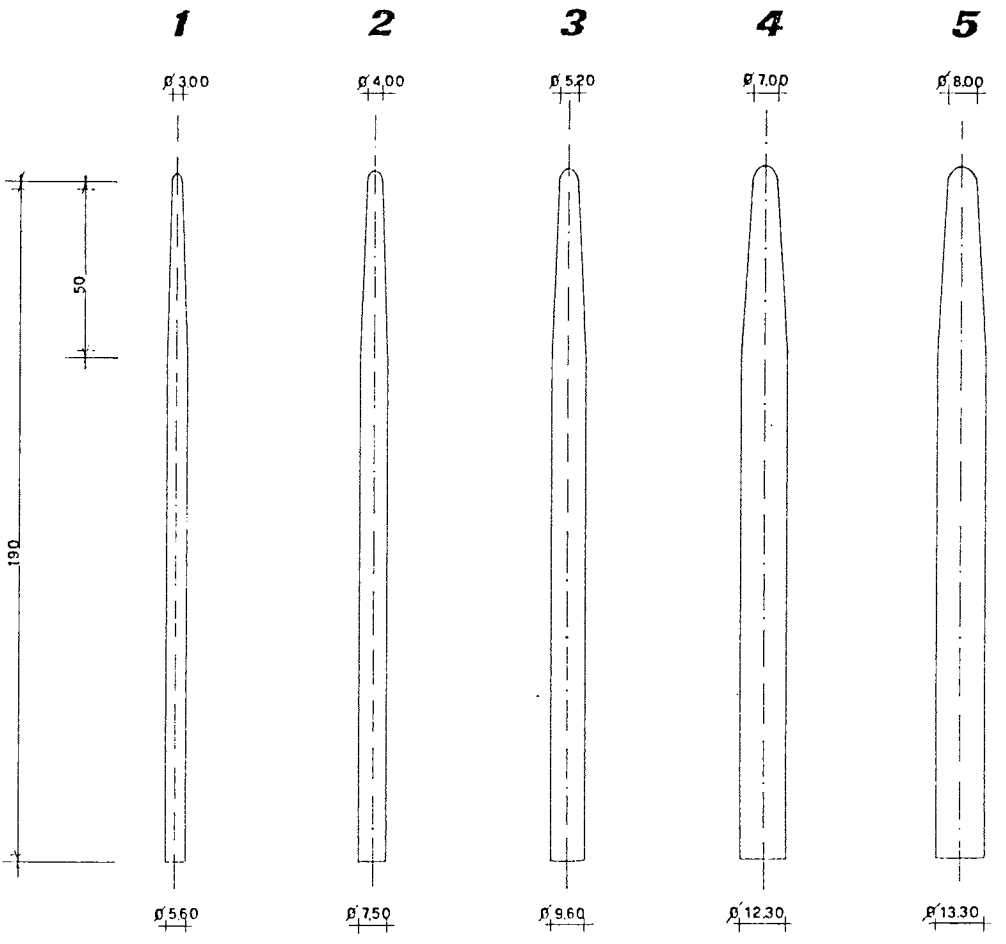


Fig. 3.

– decreased IUO, compared to the initial one, for 5 patients who had undergone a dilation performed by the suggested dilators, in opposition to the 3 within the test group;

– increased IUO, compared to the initial one, for 1 patient of group B, in opposition to 5 of group A.

If the dilation is wider than 10 mm, we notice the following results:

– unvaried IUO for 25 patients out of 43 who had undergone a dilation performed by the suggested dilators, in opposition to 24 out of 45 of the test group;

– decreased IUO, compared to the initial one, for 7 patients of group B, in opposition to 8 of group A;

– increased IUO, compared to the initial one, within 11 patients who had undergone a dilation performed by the suggested dilators, (Group B) in opposition to 13 of the test group (Group A).

No high temperature increase or any other complications was pointed out or referred to during the control visits.

Table 4. — *IUO at the control examination.*

	Group	
	A	B
=	40	43
−	10	16
+	19	10

Table 5. — *IUO in nulliparous P.*

	Group	
	A	B
=	6	9
−	5	3
+	7	2

Table 6. — *IUO at the control visit with a max dilation <10 cm.*

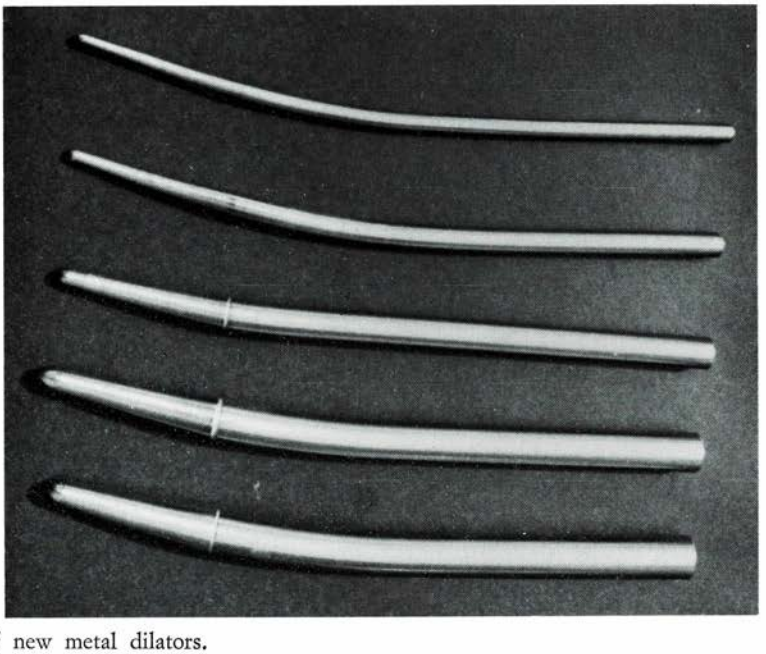
	Group	
	A	B
=	16	20
−	3	5
+	5	1

Table 7. — *IUO with a max dilation >10 cm.*

	Group	
	A	B
=	24	25
−	8	7
+	13	11

CONCLUSIONS

The aims of this work, according to the reported results, have been partially confirmed; actually, the comparison of IUO before and after VPI, showed that, when the suggested dilators were used, the IUO had not varied in a higher percentage than in the control group, whereas the IUO, at the control visit was percentually higher in the control group.



Picture of new metal dilators.

The patients who have undergone dilation with this method, receive a minor trauma, compared with the patients of the test group. Decreased IUO noticed during the control examination, is due to the pregnancy because of the increased softness of the cervix.

Another advantage is the reduction of the operative time for the gynaecologist, due to the reduced number of tools, compared to the traditional methodologies. Actually 5 dilators of the suggested line are needed to perform a 1 cm dilation, in opposition to the 20 traditional dilators. An obvious reduction of the anaesthesiological time has also arised. Another advantage of this line of dilators is the reduction of costs due to the reduced number of instruments. The more practical use of these dilators for the paramedics is also an advantage. It may then be concluded that the new dilators have absolutely proved to be valid and a wider use is forseen.

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COMPARISON BETWEEN THE DIAGNOSTIC VALIDITY OF CYTOLOGY AND HISTOLOGY IN PRENEOPLASTIC AND NEOPLASTIC ENDOMETRIAL PATHOLOGY

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Summary: With the aim of defining a program of prevention for preneoplastic and neoplastic endometrial pathology which guarantees a valid, accurate and cost-contained diagnosis, 476 women considered at risk were examined.

All the patients were first submitted to cytologic endocavitary withdrawal and subsequently to aspirated curettage.