

VAGINOGRAM

(Pre-operative and Post-operative cases and Vaginal Hysterectomy
with or without repair of Pelvic Floor)

by

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Introduction

Prolapse of the genitalia is a frequent distressing problem of the female, specially in elderly multiparous women. Vaginal hysterectomy with or without pelvic floor repair is an important armamentarium to tackle the problem in this group of patients. Complications of this operation like dyspareunia, recurrence etc. are not infrequent. These complications are related to depth, calibre of the vagina and descent of the vaginal walls and the vault. Therefore, quantitatization of the vagina in respect to its depth, calibre and the descent after this operation is thought to be essential—usually these are done by speculum examination where we see the site and nature of protrusion of the vaginal wall. The depth and calibre are usually measured by vaginal examination. As because this method is a subjective one and there is a possibility of individual variation and error, some method which can actually demonstrate the depth, calibre and descent of the vagina is tried for and this is performed by vagino-graphy.

Materials

Vaginographic study was undertaken in 37 cases. In 23 cases, the study was performed after Ward-mayo operation, in 5 cases after vaginal hysterectomy. In 4 cases, the vaginogram was done in cases of prolapse before and after the repair operation and in another 5 cases of control study was undertaken in cases of primary infertility who have no clinical genital prolapse. In all these case x-ray was taken before and after straining.

Method of Study

Initially this was tried by packing the vagina with roller gauze, soaked with radio-opaque dye (paste of barium sulphate). But packing the vagina was found to distend the vagina to a greater extent (which is really a potential space) and produced false impression regarding the depth and calibre of the vagina. So this method was abandoned.

Next a condom, filled with radio-opaque dye was used instead of packing the vagina with dye-soaked roller gauze. But this method was also abandoned due to unsatisfactory result as the shadow of the vagina was related to the amount of the dye in the condom. (Plate 1).

Hence the method was improvised and finally a viscid paste of radio-opaque dye

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was painted on the vaginal wall without distending it and x-ray was taken in recumbent position in both A-P and lateral view, first without straining and then with straining and the depth and calibre of the vagina and the level and descent of the vault was measured. The normal level and descent of the vault was measured in relation to ischial spines. (Plate 2 to Plate 6).

The patient was put in semi recumbant position on the x-ray table with head end up at 45° degree angle and x-ray tube was kept direct vertically.

Decription of the Figure

Plate 1—Vaginogram 3 years after Ward-mayo Operation using condom filled with Ba-sulphate solution.

Plate 2—Vaginogram in a case procedentia showing whole of the uterus coming outside the vulva after straining.

Plate 3—Vaginogram without straining in the same case of procedentia 3 months after Ward-mayo Operation, showing restoration of vaginal contour after the operation.

Plate 4—Vaginogram in a patient of

menorrhagia after vaginal hysterectomy without straining.

Plate 5—Vaginogram of the same patient after vaginal hysterectomy with straining showing that the vagina is well supported after operation.

Plate 6—Vaginogram in a patient of vault Prolapse after straining showing that the vaginal vault has fallen down.

Measurement

Measurement was taken directly for the x-ray plate and the findings with mean value was recorded in Tables I to IV) in different group.

Discussion

Vaginographic study of the vagina is an entirely new approach to quantitate the condition of the vagina regarding the level of the vault, length and girth of the vagina, both in normal individual and in genital prolapse before and after operation and also to see the various changes that take place after straining. In other words, this may be regarded as a para-

TABLE I
Vaginography in Control Group (5—Cases)

		Without straining	With straining
Highest level of vault	Range	1 cm. above to 1 cm. below I.S.	the level to 2 cm. below I.S.
	Mean	At the level of I.S.	1.5 cm. below I.S.
Depth of the Vagina	Range	8.5 — 12 cm.	8-11 cm.
	Mean	9.5 cm.	9 cm.
Girth of the Vagina	Range	3.8 5 5 cm.	4.1-5 cm.
	Mean	4 cm.	4.3 cm.
Descent of the vault	Range		1—2.5 cm.
	Mean		2 cm.

* I.S. — Ischial Spine.
cm. — Centimeter.

TABLE II
Vaginography after Vaginal Hysterectomy (5-Cases)

		Without straining	With straining
Highest level of vault	Range	1 cm. about to 3 cm. below I.S.	At the level to 4.5 cm. below I.S.
	Mean	0.7 cm. below I.S.	2.4 cm. below I.S.
Depth of the Vagina	Range	6.5 cm. to 12 cm.	6 to 11 cm.
	Mean	9.3 cm.	7.6 cm.
Girth of the Vagina	Range	3 cm. to 4 cm.	3.5-4.5 cm.
	Mean	3.7 cm.	4 cm.
Descent of the vault	Range		2-4 cm.
	Mean		2.4 cm.

TABLE III
Vaginography After Ward-mayo Operation (23-Cases)

		Without straining	With straining
Highest level of vault	Range	1 cm. above to 4.5 cm. below I.S.	1-7.5 cm. below 1.5 cm
	Mean	1.8 cm. below I.S.	3.9 cm. below I.S.
Depth of the Vagina	Range	5.5-14.5 cm.	3-12 cm.
	Mean	8.6 cm.	6.8 cm.
Girth of the Vagina	Range	2-5 cm.	3-6 cm.
	Mean	2.9 cm.	3.7 cm.
Descent of the vault	Range		1-4 cm.
	Mean		2.0 cm.

meter to assess the clinical condition of vagina and vault.

Vaginographic study shows that the normal level of vault in healthy individual lies at or near the level of ischial spine, 0.7 cm. below ischial spine following vaginal hysterectomy and 1.8 cm. below ischial spine following Ward Mayo Operation which mean that there is some shortening of vagina following Ward Mayo Operation but almost no shortening following vaginal hysterectomy.

After straining, the vault descends by 2 cm. in normal individual and following Ward Mayo Operation but slightly more i.e. 2.4 cm. following vaginal hysterectomy. In a comparative study before and after the operation in the same patients, it is found that the vault descends by 3.2 cm. in cases of prolapse before operation but only 0.6 cm. after Ward Mayo Operation.

The length of the vagina is found to be 9.3 cm. following vaginal hysterectomy

TABLE IV
Vaginography Before and After Ward Mayo Operation (4 Cases)

		Without straining		With straining	
		Before Operation	After operation	Before operation	After operation
Level of vault		5-6 cm.	1-2 cm.	3.5-7 cm.	1-3 cm.
	Rang	below I.S.	below I.S.	below I.S.	below I.S.
	Mean	2.5 cm.	1.7 cm.	5.7 cm.	2.9 cm.
		below I.S.	below I.S.	below I.S.	below I.S.
Depth of vagina	Rang	6-12 cm.	7.2-11 cm.	4-11 cm.	6.10 cm.
	Mean	9.5 cm.	9.5 cm.	6.5 cm.	7.7 cm.
Girth of vagina	Rang	4-5 cm.	3.4-5 cm.	4-6.5 cm.	3-5.5 cm.
	Mean	4.4 cm.	3.5 cm.	5.7 cm.	4.1 cm.
Descent of vault	Rang			1-6 cm.	0.5-2 cm.
	Mean			3.2 cm.	0.6 cm.

and 9.5 cm. shortly after Ward Mayo Operation and 8.6 cm. long after Ward Mayo Operation.

It has been observed by vaginographic study that after straining, the vault descends, length of the vagina diminishes and girth of the vagina increases.

Vaginography furnishes a laboratory document regarding the correlation of the condition of the vagina and associated complaints like something coming down per vagina and dyspareunia. Thus dyspareunia was found in those patients having girth of the vagina 3 cm. or less. Something coming down per vagina is complained by those patients where the descent of the vault 5.5 cm. or more after straining.

Conclusion

In spite of all these positive findings, no exact comment could be made regarding the results of vaginographic study from this limited series but is likely in future after studying a large number of patients. However, radiographic study can predict the efficacy of type of operation in case of genital prolapse.

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See Figs. on Art Paper IV-V