



## Vaginoplasty with the Labia Minora

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### Abstract

**Objective:** A new method for vaginal reconstruction is presented, based on the use of the labia minora in cases of vaginal atresia (or even tumors that imply the removal of uterus and vagina as in some cases of vaginal tumors)

**Design:** Just using a perineal approach

**Results:** Allowing for a well sized new vaginal cavity, elastic, non-retractile, with humid lining (so simulating the normal vaginal mucosa) and with no unpleasant mucous discharge (that would result from the use of colon).

**Keywords:** Vaginal Atresia; Hysterocolpectomy; Rhabdomyosarcoma of the Vagina; Vaginal Reconstruction

### Introduction

The main aim is to demonstrate a very simple and straightforward technique for vaginal reconstruction that can be used immediately following radical hysterocolpectomy for a malignant tumor or just for correction of partial or total vaginal atresia (as in the Rokitansky-Kuster-Hauser syndrome).

### Material and Methods

The technique is exemplified through the presentation of a 13 years old girl with a clear cell carcinoma of the vagina, whose mother had taken diethylstilbestrol in early pregnancy when facing threatened abortion. The patient required total hysterocolpectomy followed by immediate vaginal reconstruction with the labia minora.

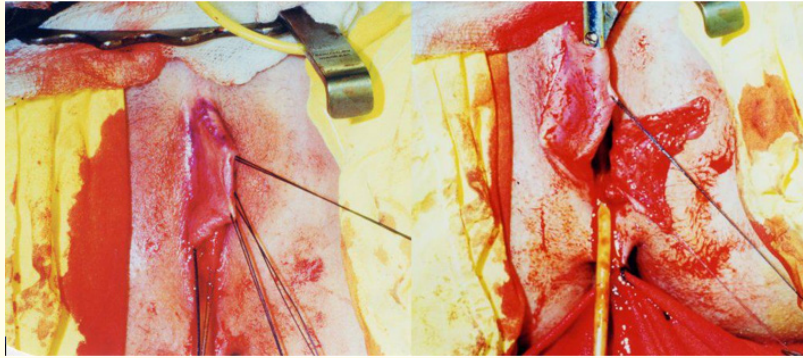
### Surgical Technique

It will be exemplified with a "total" vaginal atresia. Under general endotracheal anesthesia the Patient is placed in the gynecological position, exposing the vulva.

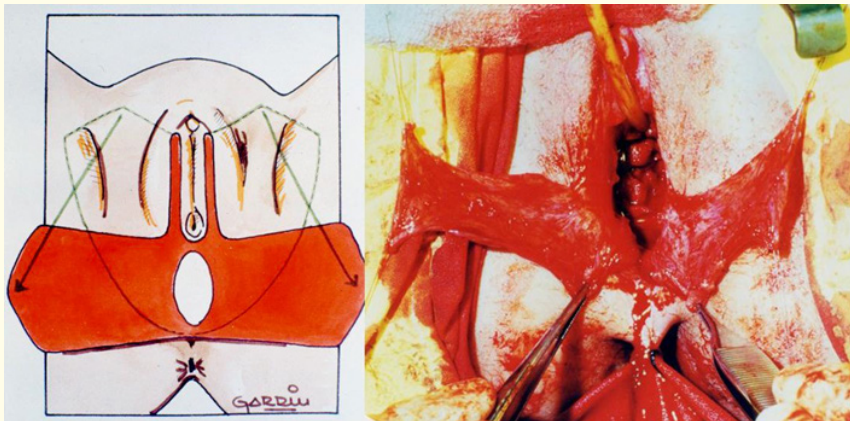
A Foley catheter is placed so that it will help to protect the urethra during the pelvic-perineal dissection. Incisions are made on the inner portion of the labia minora, from around the urinary meatus until the level of the clitoris.

Sharp and blunt dissection between the urethra and the rectum (using scissors and the fingers), is used to obtain a neo-vaginal cavity of normal size at the place where a normal vagina should be. Care must be taken not to invade the peritoneal cavity. Then the anterior portions of the labia are incised, as well as parallel incisions are made on the outer side of the labia minora till the level of the initial inner incision. Eventually one might slightly involve the labia majora if the unfolded labia minora do not seem large enough for the desired flaps for the vaginal cavity reconstruction.

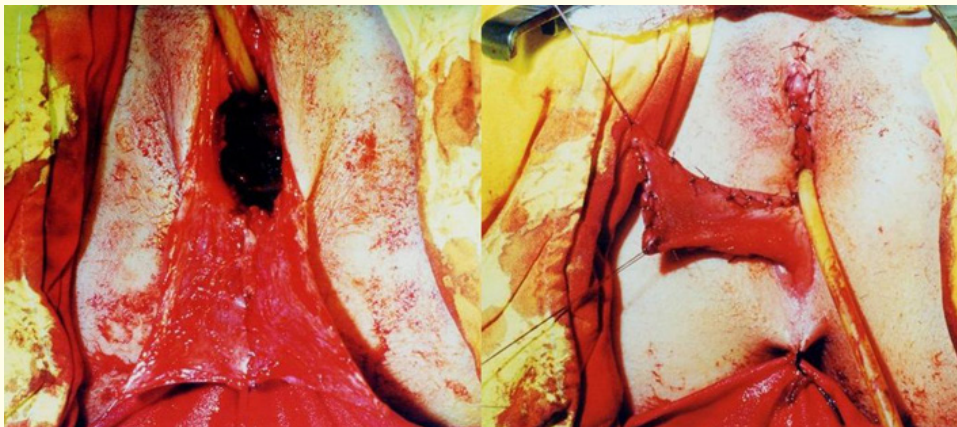
At this stage the labia minora are unfolded and the obtained flaps are posteriorly rotated to attain the zone of the new vaginal opening, sutured together with absorbable sutures, and then invaginated within the cavity of the new vagina.



**Figure 1:** Initial incisions in the labia minora and flaps being developed.



**Figure 2:** Flaps opened, and flaps rotated, based posteriorly.



**Figure 3:** Labia minora flaps ready and flaps sewn together.

The cutaneous surface of the labia minora will replace the normal vaginal mucosa and the raw inner surface of the flap will be adherent to the raw surface of the new vaginal cavity.

Having obtained a new vaginal cavity, a mold (with a size equivalent to the size of an erected penis but slightly longer than the depth of the neo-vagina, so to make it easy to remain in place post-operatively) is introduced, to be kept for a week and then changed as required, until the time when sexual activity would start.

The mold is simply made of sponge rubber, with a small anterior groove in order to avoid any undue pressure on the catheterized urethra, placed within a condom (without the need for the use of expensive silicone). The mold has also the advantage of gently press the flaps against the new raw vaginal surface, thus preventing curling and favoring adherence of the flaps to their recipient beds.

The Foley catheter will be kept also for about a week in the post-operative period, being removed when changing the mold for the first time.

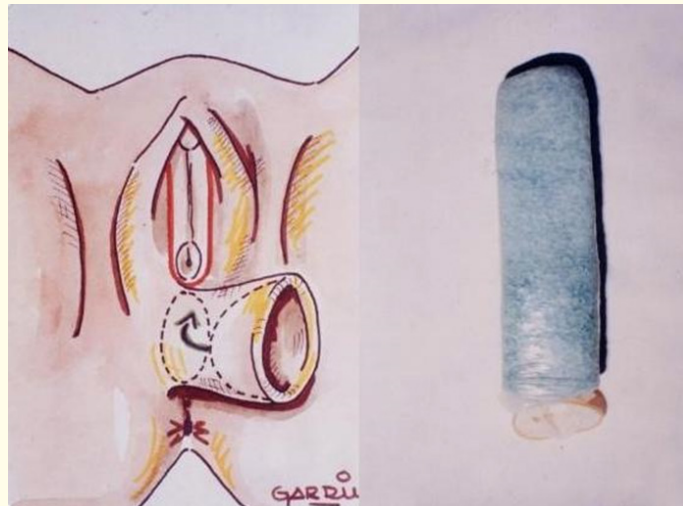


Figure 4: Invagination technique and soft rubber diluter.

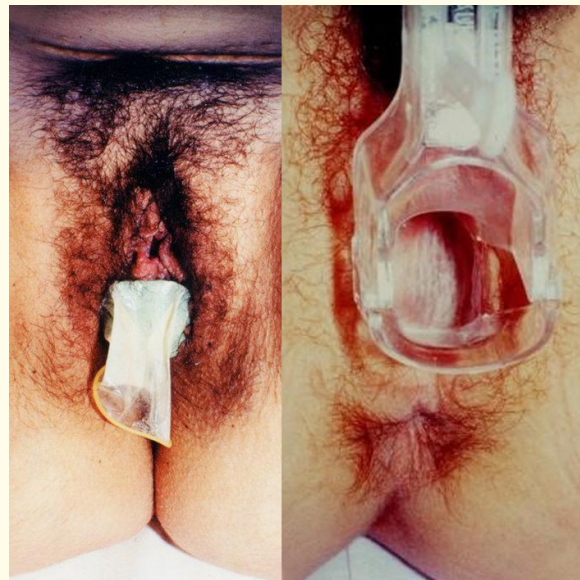


Figure 5: Dilator inside and post-operative gynecological exam.

Dilator in place and final appearance of vagina.

## Discussion and Results

Vaginal reconstruction, immediate or delayed, has worried surgeons for more than a century. Initially obtaining a space between the rectum and the urethra and simply keeping a mold in place, proved unsuccessful. Esser, in 1917, was the first to suggest covering the obtained cavity with skin grafts but it was only after the works of McIndoe (1938) that the technique became a choice. The procedures of Frank (1940) and Broadbent (1987) are now only of historical value. But then McIndoe's technique lost preference when facing the use of an isolated sigmoid colon loop for vaginal substitution (till now probably the most widely used method, but that we hope will also become only of historical interest, when compared to the one we have described) It is also certainly preferable to the use of the thick and dry local flaps from the thighs, that also imply ugly scars.

This new method using just a perineal approach, is not only conceptually and practically simple, but is quick (around one hour) and almost bloodless and there is no interference with the clitoris and its sensitivity. Taking full advantage of the labia minora, one can obtain large enough pliable and well irrigated flaps. The labia minora flaps are elastic and non-retractile and the scar is almost invisible. The vaginal cavity obtained is of good size, with humid lining simulating the normal vaginal one and with no unpleasant mucous discharge (when an isolated segment of the sigmoid colon is used in the apparently more frequently used technique nowadays), or tendency for retraction (when using the free flaps proposed by McIndoe). Both of those techniques also have the disadvantage of the scar they leave: either the hypogastric scar to obtain the sigmoid loop or at the donor area for the taking of the skin grafts. And also, both take a much longer time that would preclude their use as a "Day Surgery" as our technique can allow if conditions are suitable.

Although simple in concept the technique requires meticulousity and precision, namely when developing the flaps. In vaginal atresia the reconstruction should ideally only be performed at puberty, when the labia minora have reached their expected full size.

In the more frequent cases of vaginal atresia, in which only the

lower 2 thirds are absent (due to the different embryological origin), leading to hydrometrocolpos, the two flaps are sutured in the upper part in a Z fashion in order to avoid having a circular scar that could tend to stenoses [1-12].

## Conclusion

Labia minora vaginoplasty can be used for any type of vaginal reconstruction, being the technique of choice for vaginal atresia or hysterocolpctomy, but also having the possibility to help in the correction of urethra or rectal fistulas.

So, after an almost bloodless, simple and quick surgery, with practically no scarring, a good sized and functionally valid, well lu-

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