

# Anterior Vaginal Introitoplasty for an Acquired Sensation of Wide Vagina

## A Case Report and New Surgical Intervention

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**BACKGROUND:** A vaginal introital defect case and its symptomatology have never been published before. The objective of this presentation was to describe symptoms associated with an acquired sensation of wide vagina and to present a new surgical treatment for anterior vaginal introital defects.

**CASE:** A 42-year-old, Caucasian woman, G4P4013, presented with a sensation of wide vagina at the vaginal opening and a history of colpoperineoplasty, without mesh, for the same condition 4 years prior. Clinical evaluation

documented anterior vaginal introital defects and the absence of vaginal site-specific defects. Reconstruction of a vaginal introital defect was completed without complications. Surgical resolution of symptoms and signs of this condition were noted.

**CONCLUSION:** Anterior vaginal introitoplasty can assist in the management of an acquired sensation of wide vagina. (J Reprod Med 2014;59:327–329)

**Keywords:** anterior vaginal introitoplasty, colpoperineoplasty, colpoperineorrhaphy, cosmetic gynecology, pelvic floor, perineoplasty, vagina, vaginal introital defects, vaginal introitoplasty, vaginal introitus.

Anatomical structures of the vaginal introitus differ significantly from the vaginal wall structures; consequently, a procedure different from colpoperineoplasty surgical intervention will be required to restore structural integrity of the vaginal introitus. The objective of this presentation was to define symptomatology and to describe a new anterior vaginal introitoplasty surgical technique.

An electronic and manual search of the existing literature for the topics

vaginal introital defects, vaginal introitoplasty, pelvic floor relaxation, colpoperineoplasty, colpoperineorrhaphy, perineoplasty, and vaginal relaxation was carried out for years 1900 to March 2011 and failed to identify any clinical scientific article on the subject matters; therefore, it appears to be a new entity and a new surgical technique for acquired sensation of wide vagina.

### Case Report

A 42-year-old, Caucasian woman, G4P4013, presented with an acquired sensation of wide vagina. She had undergone colpoperineoplasty 4 years prior for the same complaint, without the use of

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**There is a potential cause of an acquired sensation of wide vagina associated with vaginal introital site-specific defects, and traditional colpoperineoplasty does not provide surgical resolution.**

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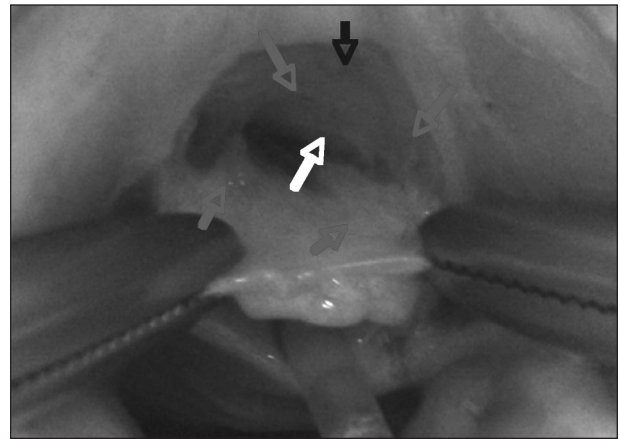
mesh to narrow the vaginal dimensions. Otherwise, she was healthy. She reported the absence of feeling of penile traction on insertion during sexual intercourse (no feeling of penile insertion), loosening sensation of penile strokes at the opening of the vagina, and the feeling like an empty hole at the vaginal opening. Clinical evaluation documented the following: POPQ-gh measurement of 7.2 cm; anterior vaginal introital defects; the absence of vaginal site-specific defects; the absence of a squeezing strength; urethral orifice of a transverse location and shape (a natural shape is an elliptical with vertical location); downward displacement; and an abnormal gap between the symphysis pubis and the urethral meatus, deviating from its natural midline location and having irregular edges.

#### Local Anesthesia

Anterior vaginal introitoplasty was executed under local anesthesia without sedation. Preoperatively, a thick layer of lidocaine-prilocaine (2.5%/2.5%) cream was applied to the vestibule and covered with gauze for 1 hour. During the last 30 minutes an ice pack was added to this area. The operative field was prepped with betadine solution. Marcaine 0.5% with epinephrine in a concentration of 1:200,000 (Hospira, Inc., Lake Forest, Illinois) was used for local anesthesia. Infiltration with local anesthetic was accomplished with a 27-gauge  $\times$  1/2 inch needle and syringe (Terumo, Elkton, Maryland). No conscious sedation or pudendal block was used.

#### Surgical Technique of Anterior Vaginal Introitoplasty

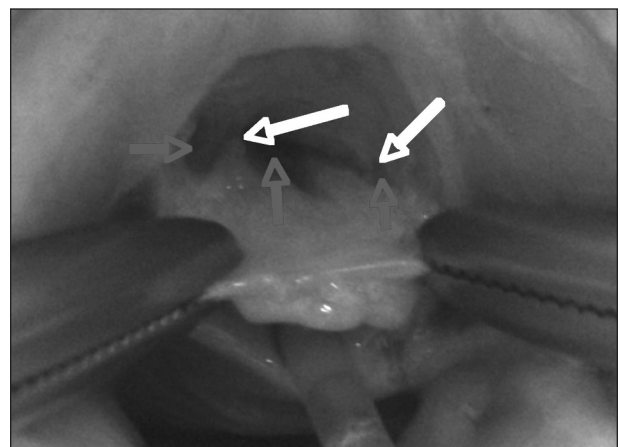
An arch-shaped incision was made halfway between the labia minora and above the urethral meatus, within the space of the clitoral frenulum. The pubic arch ligament and the pubic bone were identified by palpation. In this case, a visual inspection determined that the compressor urethral muscle was partially separated from the pubic arch ligament, and multiple anterior introital defects were documented (Figures 1–3). The separated edges were scarified by vaporization technique with CO<sub>2</sub> laser (the continuous mode setting on 10W of power). The scarified edges of the compressor urethral muscle and the arch pubic ligament were approximated with 2-0 PDS, a single type of suturing technique. Five single 2-0 PDS sutures were applied. The arch-shaped epithelial incision was reapproximated by a continuous suturing technique with 3-0 PDS suturing material. The urethral orifice and vaginal introitus contours were changed from



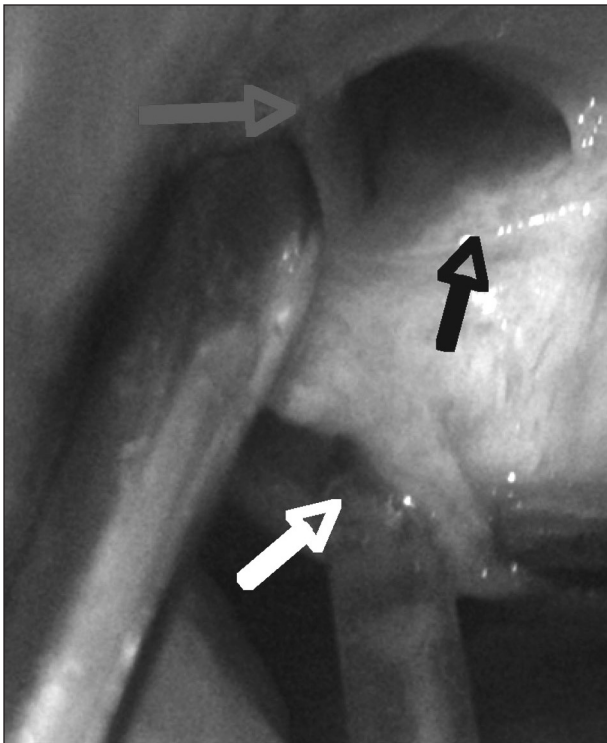
**Figure 1** Arch incision was made in the subpubic area and the pedicle flap was stretched. The pubic bone (black arrow), the pubic arch ligament (white arrow), and the separation line of the urethral compressor muscle from the pubic arch ligament are depicted (gray arrows). Multiple anterior introital defects were documented.

the horizontal transverse appearance to the vertical elliptical appearance, and the urethral-vaginal introitus complex was lifted up from its downward displacement. The abnormal palpable gap between the symphysis pubis and the urethral meatus vanished after surgery.

There were no intraoperative, short-term, or long-term complications observed. Bleeding during the procedure was minimal. Postoperatively, none of the following were noted: bleeding, infection,



**Figure 2** Incomplete separation of the urethral compressor muscle from the pubic arch ligament (white arrows) and multiple site-specific defects (gray arrows) are depicted.



**Figure 3** Foley catheter (white arrow) with the urethral meatus contour changed from vertical to horizontal elliptical appearance. A probe was inserted into the smaller compartment of the defect to demonstrate the remaining urethral compressor muscle attached to the pubic arch ligament (gray arrow). The demarcation line of the separated urethral compressor muscle from the pubic arch ligament is indicated by the black arrow.

vaginal adhesions, dyspareunia, and negative alteration of vaginal sensation. Our patient had an uncomplicated recovery with minimal discomfort, which was controlled by Dermoplast local pain relieving medicine in spray form (Medtech, Jackson, Wyoming).

The patient engaged in vaginal sexual intercourse with her male partner 6 weeks after the surgical intervention. Surgical resolution of her symptoms of sensation of wide vagina, absence of feeling the traction of penile insertion, the feeling of an empty hole, and decreased sensation of penile strokes at the vaginal introitus were reported by the patient at 6 months, 1 year, and 2 years after surgery. The measurement of POPQ-gh has been reduced from 7.2 cm to 3.5 cm. A squeezing strength of the vaginal introitus improved from the absence to the presence of squeezing strength. A sensation of penile friction movements during sexual intercourse at the vaginal introitus was restored.

## Discussion

This case teaches us that there is a potential cause of an acquired sensation of wide vagina associated with vaginal introital site-specific defect(s), and that traditional colpoperineoplasty does not provide surgical resolution of symptoms.

In this study, for all practical purposes, clinical division of the vaginal introitus was established as anterior, lateral, and posterior segments. The use of laser to scarify the edges of separated fascia provided an option for bloodless and very reliable preparation of the fascia surfaces for suturing.

The anterior vaginal introitus is fused to the ventral perineal membrane by the urethrovaginal sphincter muscle, which embraces the urethra and the entire vaginal orifice as it runs alongside the boundaries of the vaginal orifice. The ventral perineal membrane attaches to the pubic bone, creating an indirect, strong suspension of the vaginal introitus to the bone by the paraurethral and paravaginal connective tissue.<sup>1,2</sup> The ventral margin of the perineal membrane inserts into the arcus tendineus fascia pelvis (ATFP) and into the arcus tendineus levator ani (ATLA). Therefore, the vaginal orifice is connected to the ATFP and the ATLA via the ventral perineal membrane fibrotic tissue.<sup>3,4</sup>

The urethra and the anterior vaginal introitus are embraced by the urethrovaginal sphincter muscle, and these two anatomical structures are suspended as one unit to the pubic bone and to the ATLA and to the ATFP. A defect of this suspension can result in losing the effective tightening force of the urethrovaginal sphincter muscle, leading to a sensation of wide vagina. It seems natural to incorporate this defect, if present, into the management of sensation of wide vagina. Anterior vaginal introital site-specific defect reconstruction (anterior vaginal introitoplasty) can assist in the management of an acquired sensation of wide vagina.

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