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A Simple and Effective Traction Device for Laparoscopic Formation of a Neovagina Using The Vecchietti Technique

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ABSTRACT We sought to present a simple new traction device that was used with success in 4 cases of laparoscopic creation of a neovagina using a modified Vecchietti technique. Four patients were treated with laparoscopic creation of a neovagina. All women had Rokitansky-Küster-Hauser syndrome and no more than a 1-cm vestibule dimple. A 3-cm diameter and 10-cm long plastic tube (mold) was used for traction. We developed 2 independent wood traction devices. They were based on tuning pegs of a guitar. The 1-cm demarcation in the external face of the mold allowed easy observation of the effects of traction. The patients were hospitalized from 7 to 10 days and the postoperative courses were uneventful. One patient was lost after 3 months of follow-up. After a year, the other 3 patients were having intercourse and were satisfied with the results. The laparoscopic technique has several advantages: it does not need grafts, it does not need a dissection of the space between the bladder and the rectum, it uses the mucous membrane of the vestibular area, the time of hospitalization is relatively short, and it possesses good long-term results. Journal of Minimally Invasive Gynecology (2008) 15, 611–614 © 2008 AAGL. All rights reserved.

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The main etiology of vaginal agenesis is Mayer-Rokitansky-Küster-Hauser syndrome, with a prevalence of 1 in 4000 [1]. Several techniques exist for correction of vaginal agenesis, including surgical and nonsurgical procedures.

The Frank method is the best-known nonoperative technique for correction of vaginal agenesis [2]. It is based on the use of dilators by the patient that gradually makes a canal between the bladder and the rectum. The most popular surgical procedure for creation of a vagina is the McIndoe technique [3]. It uses a split-thickness skin graft to cover a mold inserted into a space created between the bladder and rectum.

The Vecchietti technique uses the concept of the Frank method (creation of a vagina with a pressure in the interlabial space) but the traction is not patient-dependent [4]. An abdominal device is responsible for the traction on an acrylic olive applied to the vaginal dimple. Originally, this technique needed a laparotomy to pass 2 threads through the potential neovaginal space [4]. One study described a laparoscopic approach for the creation of a neovagina using the Vecchietti technique [5].

The use of a suitable traction device for a few days is the challenging part of the procedure. A commercially available traction device exists for a Vecchietti laparoscopic neovagina (Fig. 1). We used this kind of equipment in our first case and noticed that the main disadvantages were heavy weight (made of hard material) and the necessity to have a fixed distance between the 5-mm trocar incisions.

We describe a simple new traction device that was used with success in 4 cases of laparoscopic creation of a neovagina using a modified Vecchietti technique.

Methods

From March 2003 through June 2004, 4 patients were treated with laparoscopic creation of a neovagina. All women (18–21 years old) had a diagnosis of Mayer-Rokitansky-Küster-Hauser syndrome and no more than a 1-cm vestibule

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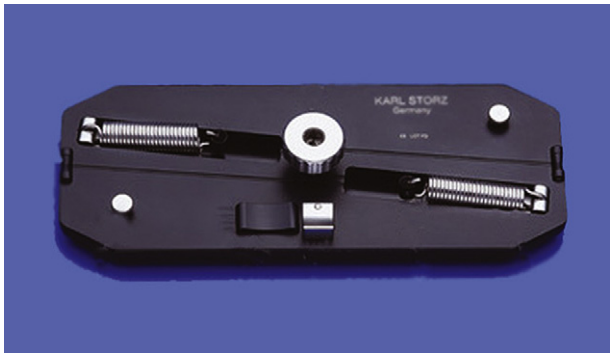

Fig. 1. Commercially available traction device for Vecchietti laparoscopic neovagina.

dimple. This study was approved by the institutional ethics review board of our university hospital.

Under general anesthesia with endotracheal intubation, the patient was placed in the lithotomy position to allow easy access to the perineum. A transurethral catheter was inserted into the bladder. After a direct puncture with a disposable 10-mm trocar, the laparoscope was introduced by the transumbilical route and a pnemoperitoneum created. One 5-mm ancillary trocar was introduced under direct vision in each lower quadrant of the abdomen, approximately 10 cm below the umbilical level and 10 cm lateral to the midline.

A Pereyra needle was introduced into the vesicorectal space carrying the 2 threads of polyester 5 previously passed through a plastic tube (Fig. 2) of 10-cm length and 3-cm width with 2 holes on the tip for the suture to pass through. This insertion was controlled by cystoscopy (Fig. 3) and by a finger in the rectum. These were necessary to avoid any perforation by the Pereyra needle into the bladder and into the rectum, respectively.

The ancillary trocars were pulled back and grasping forceps on each side were introduced through the abdominal incision taking care to progress underneath the peritoneum until it reached the vagina and the free suture could be grasped. The threads were brought out to the anterior abdominal wall through the 5-mm puncture sites and were ready to be attached to the traction device.

Fig. 2. Plastic tube 10 cm long and 3 cm wide with 2 holes on tip.

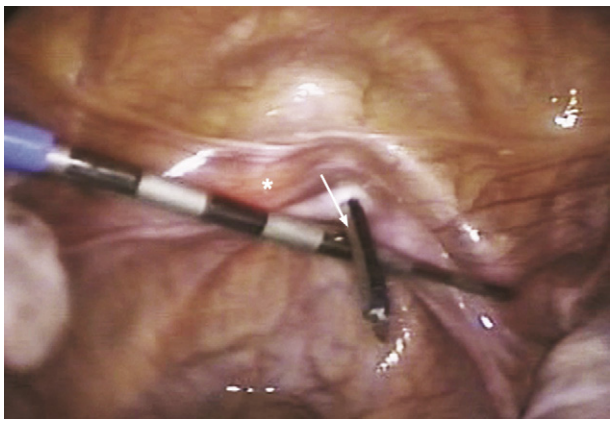

Fig. 3. Introduction of Pereyra needle (*arrow*) controlled by cystoscopy (*).

New Traction Device

The most challenging aspect of the operation is to use a simple and effective device to maintain the appropriate tension on the threads for approximately 1 week.

We developed 2 independent wood traction devices (Fig. 4) that solved the problems that occurred with the steel device. They were based on tuning pegs of a guitar. Fig. 5 shows a schematic view of the device, including all the measures needed to produce one.

It is very easy to insert the threads into the opening. After passing the threads 2 cm through the hole, without making a knot, the surgeon just rotates the peg on each side until an appropriate tension is achieved on the perineal mold (Fig. 6). These tubes may be obtained in laboratories that use centrifuges, as the tubes are used routinely in this kind of equipment. The holes at the tip are done using small nails and the threads can be inserted through them.

Results

The traction device was not very painful. Oral nonsteroidal analgesics were rarely necessary. The Foley catheter was maintained until the tube was in place. The traction device was adjusted with the patient in an upright position, so that

Fig. 4. Two independent wood devices used for traction.