

Successful laparoscopic-assisted Davydov operation for the treatment of complete congenital vaginal agenesis at a public health facility in Ilorin, Nigeria

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ABSTRACT

Mayer–Rokitansky–Kuster–Hauser is a rare congenital anomaly of the female genital tract that may remain undiagnosed until adolescence, early adulthood, or during marital life. It is caused by embryonic growth failure resulting in agenesis or underdevelopment of the vagina or uterus or both. Satisfactory vagina creation remains a challenge, however there is no standard treatment for creating a vagina though a variety of surgical options have been tried. We present a case of laparoscopic-assisted Davydov operation in a 25-year-old female with complete congenital vagina agenesis.

Key words: Davydov operation, Ilorin, Nigeria, vaginal agenesis

INTRODUCTION

Mullerian agenesis is also referred as mullerian aplasia, Mayer–Rokitansky–Kuster–Hauser (MRKH) syndrome, or vagina agenesis. It occurs in 1 in 4,000–5,000 female live births,^[1] the majority of cases appears to be sporadic, however familial cases have been described. Most gynecologists will only encounter mullerian agenesis once or twice during their carrier.^[2] Patient with MRKH syndrome may present with any of the following symptoms: Primary amenorrhea with a normal female phenotype and 46, XX karyotype; MRKH accounts for 15% of primary amenorrhea,^[3] inability to have intercourse, infertility, renal malformation, and vertebral anomalies.

MRKH is subdivided into two types. Type I consists of an isolated absence of the proximal two-thirds of the vagina and the uterus, whereas Type II is associated with other anomalies which include vertebral, cardiac, urologic, and otologic abnormalities.^[4] Both present with normal female sexual development.

The diagnosis of vaginal agenesis is emotionally traumatic for these young women. The physicians' approach is very important for their psychological well-being and future medical management.^[5] At present, there is no consensus regarding the best management option. As stated by the American College of Obstetrician and Gynaecology (ACOG Committee Opinion, 2002), nonsurgical treatment is the first choice,^[6] however anatomic and functional success rate of dilator therapy is questionable. In patients who refuse or fail to achieve a functional vagina with passive dilatation, a surgical approach may be required. Successful results with various vaginoplasty techniques have been described. We present a case of laparoscopic-assisted Davydov operation in a 25-year-old woman with complete congenital vagina agenesis.

CASE REPORT

A 25-year-old woman presented at the assisted reproductive technology (ART) unit of the Department of Obstetrics and

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Gynaecology, University of Ilorin, Teaching Hospital, on account of primary amenorrhea. She had started developing secondary sexual characteristics at about 14 years of age; the sequence of development could not be remembered. She was not sexually active.

Physical examination revealed a young woman, 1.46 m tall, weighed 42 kg, and her body mass index was 19.7 kg/m². Her thumbs were hypoplastic bilaterally and she had a short neck. Her breasts were well developed at tanner stage V with normal axillary and pubic hair. The gynecological examination revealed grossly normal vulva, however the vagina was blind-ending with only the urethral opening being patent. The two-dimensional transvaginal ultrasonography done revealed absent uterus and normal ovaries with evidence of follicular activities. She subsequently had diagnostic laparoscopy done and the uterus was not visualized; however, grossly, normal fallopian tubes and ovaries were seen bilaterally. The patient was discharged home on the same day after diagnostic laparoscopy and counseled on the operative findings and the need for vaginoplasty and ART with surrogate mother.

The patient represented the clinic 2 months later seeking for vaginoplasty because of her readiness to get marry. She was co-managed with a plastic surgeon, and the decision to offer her laparoscopically assisted Davydov vaginoplasty was jointly arrived at.

Laparoscopic creation of a new vagina was based on Davydov method. Blunt dissections were made abdominally over a vagina mold placed at the rectoversal space. A transverse incision was made over the mold with the aid of a monopolar laparoscopic spatula to create a neovagina, and the anterior and posterior peritoneal flaps created were separately held with a stay suture (Vicryl 2), then pulled toward the perineum and sutured to the vaginal edges by the plastic surgeon with Vicryl 4/0. Vaginal vault was constructed using purse-string suture involving a bite on the round ligaments, serosa of the sigmoid colon, and uterovesical peritoneum, which were approximated with the aid of tumble square knot [Figures 1-7].

DISCUSSION

The MRKH syndrome should be suspected when a young female complains of primary amenorrhea and the inability of sexual intercourse. The diagnosis is usually accessible using clinical information, laboratory results, and ultrasonographic findings.^[1] If these findings are inconclusive, laparoscopy is indicated for objective confirmation of localization and photographic documentation of the internal genitalia, other neighboring structures, and possibly laparoscopically assisted vaginoplasty as one-off approach management in skill hands.^[1,7] In this report, the patient had both diagnostic and therapeutic laparoscopy for confirmatory diagnosis of MRKH and creation of neovagina. Thus, laparoscopy is a

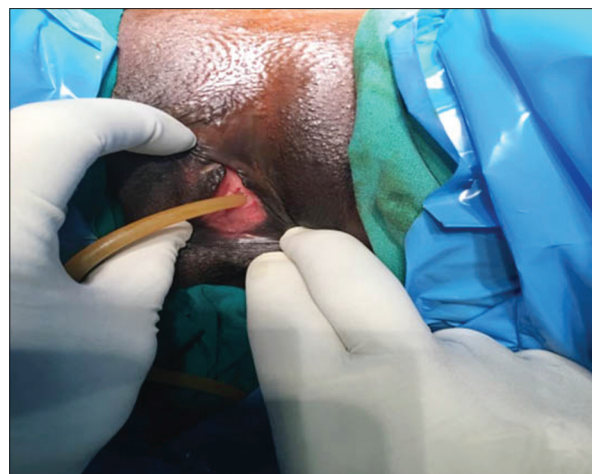


Figure 1: Absent vagina



Figure 2: Laparoscopic creation of neovagina



Figure 3: Cutting of stay sutures

way of minimizing surgery-associated risks in the course of managing MRKH.

The surgical techniques are designed to create a canal of adequate size oriented in the correct axis by developing the

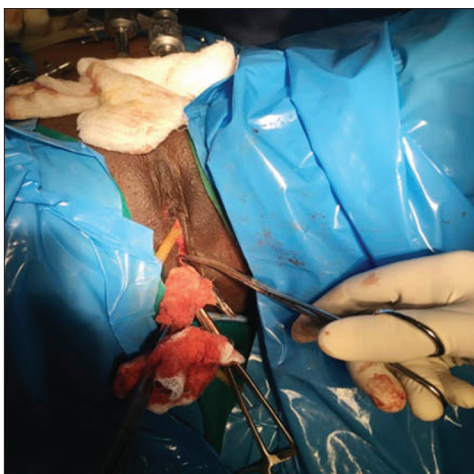


Figure 4: Pull-through of peritoneal stay sutures held at the perineum by a plastic surgeon

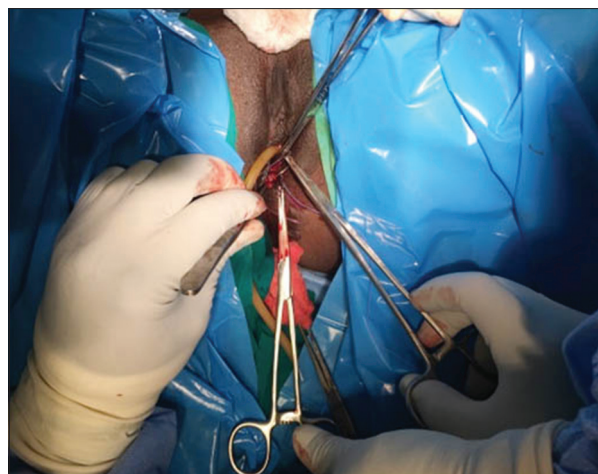


Figure 5: Suturing of the peritoneum to the neovagina edges

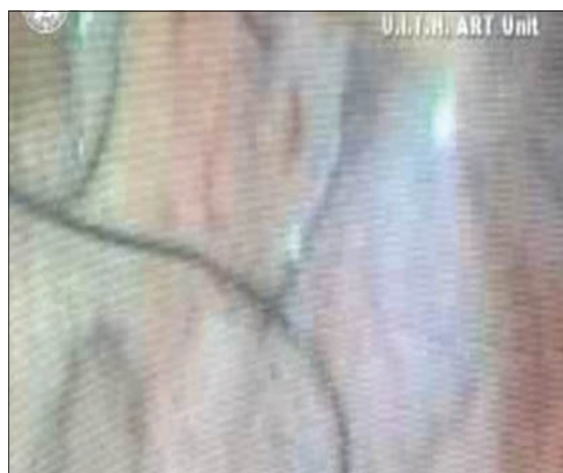


Figure 6: Vaginal vault creation using purse-string suture with tumble square knotting



Figure 7: The neovagina vault

space situated between the bladder and rectum. The newly created space may be covered by different materials: Skin graft, peritoneum, amnion, intestine; ileum, sigmoid colon, caecum, and artificial dermis.^[5] Whatever the technique used, its success or failure depends largely on the cooperation of the patient and its associated complications, i.e., poor esthetic results in McIndoe skin graft, risk of peritonitis, intestinal obstruction, prolapse, excess mucous production, adenocarcinoma, and colitis of the neovagina in the intestinal graft.^[8] The amnion graft can transmit hepatitis or human immunodeficiency virus, although the use of freeze-dried amnion prevents such transmission.^[9]

The choice of laparoscopically assisted Davydov operation in this report was influenced by relative ease of its conduct in experienced hands with excellent results on long-term follow-up, the neovagina, with epithelium lining resembles that of a normal vagina, facilitates comfortable sexual intercourse, minimal short- and long-term care is required, fertility enhancing in assisted conception, and practically devoid of morbidity associated with other techniques.^[9]

CONCLUSION

Successful creation of a sexually functional neovagina should include the least possible diagnostic, operative, and postoperative discomfort to minimize and stabilize the vulnerable psychological situation of young patients with vagina agenesis. Hence, there is a need to prioritize this operation among others considering its numerous advantages, most especially fertility-enhancing ability for ease of ovum pick up for those seeking assisted conception.

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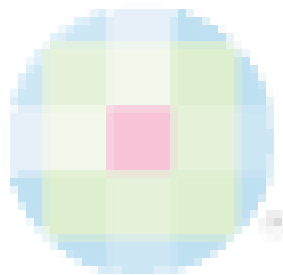
Conflicts of interest

There are no conflicts of interest.

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