

# NEOVAGINA AND UTEROVAGINAL ANASTOMOSIS OF THE UTERUS WITH PROXIMAL AND CERVICAL VAGINAL AGENESIS: A CASE REPORT

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## ABSTRACT

**Background:** Vaginal agenesis is a congenital disorder characterized by partially or entirely absent of the vagina. Vaginal agenesis is a rare condition with an incidence of 1 in 4,000 - 5,000 women. Ultrasound examination of vaginal agenesis shows the upper border of the vagina and abnormalities of the uterus clearly. **Case Illustration:** A 26-year-old woman complaining of never having menstruation accompanied by cyclic pain every month. The patient had undergone three operations to evacuate blood from the vagina. After the third operation, the patient complaining of faeces from the vagina. From the examination, we found that the vaginal length was  $\pm 3$  cm with no portio palpable, and discontinuity in the posterior vaginal wall until it penetrated the anus, and the uterus was larger. We performed neovaginal reconstruction, uterovaginal anastomosis, and rectovaginal fistula repair. **Conclusion:** Vaginal agenesis is a rare congenital abnormality. The main goals of surgery on young women are to reduce complaints, restore the normal anatomical structures, menstrual function, sexuality, and maintain the reproductive ability.

**KEYWORDS** vaginal agenesis, neovagina, vaginal mould

## Background

Vaginal agenesis is one of the abnormalities in the vagina that is acquired congenitally in the form of a partial or complete absence of the vagina. Vaginal agenesis can be found in diseases such as Mayer-Rokitansky-Kuster-Hauser syndrome, Turner syndrome, Morris syndrome, or androgen insensitivity syndrome.[1] Patients with vaginal agenesis can have a normal karyotype (46, XX) with female phenotype, normal ovarian hormones, and normal oocyte function. Even normal secondary sexual development and normal puberty except for menarche. Vaginal agenesis is rare, with an incidence rate of 1 in 4,000 - 5,000 women.[2] To make the diagnosis requires careful ex-

amination. Ultrasound imaging (USG) can clearly show the upper border and length of the vagina and the abnormalities in the uterus. In women with primary amenorrhea, who have already experienced puberty and secondary sex development under normal conditions, an image of the intraabdominal tumor (hematometra) can be found in USG. The management for vaginal agenesis is divided into non-operative (conservative) and operative. There are several techniques developed for vaginal (neovaginal) reconstruction in patients with vaginal agenesis.[4,5] The key to the success of surgical techniques cannot be separated from the role of the vaginal mould as an artificial material that functions as a stent and is placed in the vaginal or neovaginal lumen to maintain vaginal lumen patency during the postoperative healing phase of vaginal obstruction reconstruction. We report a case of a proximal and cervical vaginal agenesis in a reproductive age woman, who was recently married and wanted to preserve her uterus.

## Case Report

A 26-year-old newlywed woman complained that she had never experienced menstruation but experienced monthly cyclic pain.

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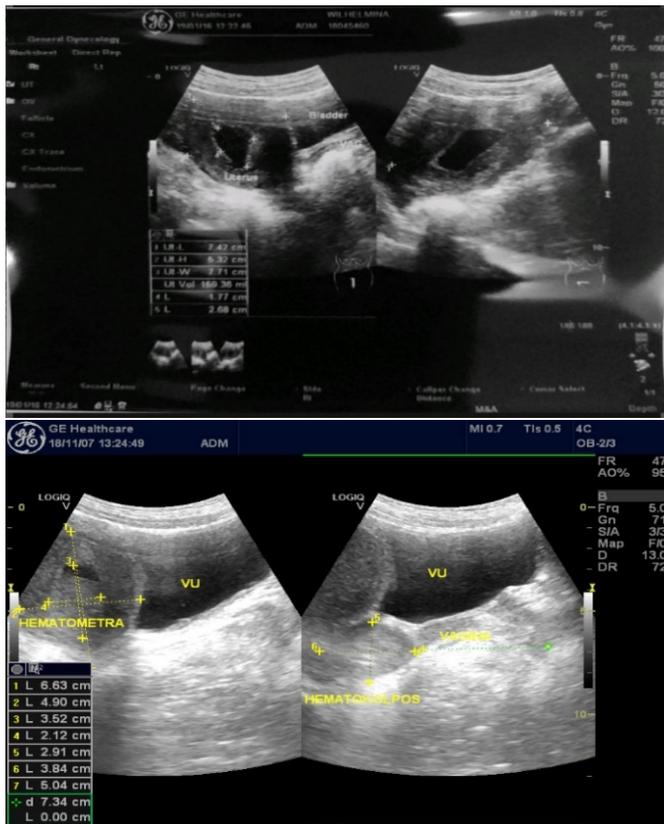
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**Fig 1. (A and B)** Transabdominal ultrasound examination, there was a sufficiently filled bladder, a uterus of 7.40 x 5.30 x 7.70 cm, an intrauterine hypoechoic image of 1.7 x 2.6 cm, the impression of a hematometra, and no cervical structure.

Previously, the patient underwent three operations to evacuate blood from the vagina. After undergoing the third operation, the patient experienced rectovaginal fistula. On physical examination, vital signs and general status was normal. There was a tender mass sized  $\pm 8 \times 8$  cm, smooth surface, and limited mobility on gynaecological examination of the abdomen. On speculum examination of the vaginal vulva, there was no fluxus and fluorine, visible faeces in the vagina, no visible portio with a vaginal length of  $\pm 3$  cm, and a hole in the posterior vaginal wall-sized  $\pm 1.5$  cm, flat edge. From the vaginal toucher examination, we found faeces in the vagina. Portio was not palpable. The vaginal length was  $\pm 3$  cm. A discontinuity in the posterior vaginal wall was felt and penetrated the anus as far as  $\pm 1.5$  cm and 1 cm from the fourchette. The uterus was large, and the consistency was normal. On transabdominal USG, we found an intrauterine hypoechoic sized 1.7 x 2.6cm indicates a hematometra with no cervical structure. (Figure 1)

The patient was diagnosed with hematometra caused by proximal and cervical vaginal agenesis with rectovaginal fistula. The patient was at a productive age and wanted to preserve her uterus. The plan was to perform neovaginal reconstruction, uterovaginal anastomosis, and rectovaginal fistula repair to resolve complaints in this patient. Neovaginal surgery and uterovaginal anastomosis were performed using a laparotomy and vaginal approach. During the operation, the uterus appeared enlarged, then a hysterotomy was performed and a brownish discharge appeared suggesting a hematometra. A spark plug was inserted from the hysterotomy incision. In infe-



**Fig 2. The incision in the uterine cavity (A).**

rior, the tissue infiltration using NaCl solution was performed to separate the rectum and urinary bladder. An upward incision was made and then bluntly widened with the fingers so that the spark plug can be felt. Afterwards, neovagina was performed by inserting a vaginal mould. In the perineal area, an evaluation was performed, and a hole appeared in the posterior vaginal wall through the anus, and repair of the rectovaginal fistula was also performed.

## Discussion

The patient with a complaint of never having menstruation before can be classified as primary amenorrhea. The most common cause of primary amenorrhea is vaginal abnormalities. Diagnosis of vaginal abnormalities, including vaginal agenesis in newborns, is rarely made because it requires careful precision in performing the examination. [4,5,6] It is necessary to do a vaginal examination and rectal examination to determine the vagina's depth and the presence or absence of a uterus. But this is rarely done because it is difficult, and if an abnormality is found, therapy can not be performed immediately.[2,3,4] Therapy will be postponed until the secondary sexual maturation is complete and mature (after menarche). The diagnosis can easily be made when the woman has gone through puberty, as seen in this patient.[4,5] Patients with vaginal abnormalities can experience normal secondary sexual development, just like this patient. Inspectulo examination of the vaginal vulva, rectal toucher, was performed, but cervical portio was not palpable. The physical examination confirmed the suspicion of cervical agenesis. An ultrasound was performed, and the uterus was found in an ante-flexion position with a hypoechoic intrauterine image suggesting a hematometra impression. An intra-abdominal tumour as a hematometra or sometimes hematocolpos can be easily found with imperforate hymen or a protruding vagina due to the pressure of menstrual blood that falls into the vagina. This can explain the complaint of lower abdominal pain experienced by patients[4]. Based on the vaginal agenesis classification, this patient was included in incomplete vaginal agenesis, where there



**Fig 2. Dilation from the uterus penetrates the vagina (B).**



**Fig 3. Modification of vaginal mould with a catheter (B).**



**Fig 3. Insertion on the foley catheter from vagina into the uterus (A).**

was no vagina, but there was still a uterus.[4,5,6] Initially, the treatment for vaginal agenesis is hysterectomy.[7] Along with technology development, many operative methods have been recommended for the management of vaginal agenesis without hysterectomy, including the Vecchiotti technique, Davidoff technique, Abbe-McIndoe-Reed technique, intestinal vaginoplasty, and laparoscopic peritoneal vaginoplasty.[7,8] This patient was referred to the Obstetrics and Gynaecology Department for neovaginal surgery and uterovaginal anastomosis because the patient still wanted her uterus to be preserved.

Vaginal dilation should always be recommended as the first-line treatment of vaginal agenesis.[7] This technique is performed by inserting a vaginal mould, which gradually increases the length and width of the vaginal canal, applying local pressure and increasing the potential space between the rectum and urinary bladder. This technique can be performed by making some modifications such as styrofoam wrapped in condoms. Vaginal dilation has minimal risks and complications. However, this approach usually takes several months to achieve adequate vaginal length and capacity. The success rate of vaginal dilation techniques is reported to be more than 80%. Vaginal dilation is required most in post-surgical procedures to maintain vaginal patent until sexual activity begins.

Two weeks control post-surgery, the patient urinated spontaneously and defecated through the anus. There was no fever. On inspection, vaginal dilator and vaginal catheter were attached, pus (-). An abdominal ultrasound examination revealed a 6.1 x 5.4 cm uterus with an intrauterine catheter balloon, without free fluid and an adnexal mass. Removal of the vaginal dilator and catheter was carried out, followed by education for daily dilation exercises 4-5 times a day. Dilation exercises were performed to avoid the risk of reconnecting the vagina and cervix.

The limitations of this action are (1) it can only be done at a tertiary referral hospital; (2) relatively high cost; (3) required a high level of adherence in performing this treatment because this action requires a long time, especially in postoperative follow-up. The key to the success of this procedure is the proper use



**Fig 4. Neocervix after catheter and vaginal dilator removal.**

of vaginal moulds. There has been no reported success rate regarding this action. In addition, patients are also given birth-control pills for three months to prevent menstruation and help heal surgical wounds.

### Conclusion

Diagnosis of vaginal agenesis requires a thorough and careful physical examination, and support especially to rule out a differential diagnosis. Based on the literature, non-operative is the first choice of therapy. If it fails, then the operative solution should be considered. The main goals for surgery in young women are to reduce complaints, restore normal anatomical structures, prevent recurrence and maintain reproductive capacity as well as maintain normal menstrual function and sexual function.

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This study received no fund.

### Conflict of interest

There are no conflicts of interest to declare by any of the authors of this study

### Patient informed consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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