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DIAGNOSTIC FEATURES OF VAGINOSCOPIC EXAMINATION OF THE NEOVAGINA FORMED BY SIGMOIDAL COLPOPLASTY

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Abstract: Sigmoid colpopoiesis is one of the effective surgical methods for correcting congenital vaginal aplasia. However, despite successful functional and anatomical outcomes, rare long-term complications, such as inflammation and the formation of mucous stones in the neovagina, can occur after the surgery. This article presents a clinical case of a patient who underwent sigmoid colpopoiesis 25 years ago. The patient presented with chronic pain, discomfort, and vaginal discharge. Diagnostic studies revealed chronic inflammation and dense concretions in the neovagina. Surgical removal of the concretions and sanitation of the inflammatory focus were performed, leading to significant improvement in the patient's condition. This case highlights the importance of long-term follow-up and timely diagnosis of possible late complications after sigmoid colpopoiesis. The article emphasizes the need for further research into the microbiocenosis of the neovagina and its role in the development of complications, which could improve the quality of life for patients after such surgery.

Key words: Rokitansky-Kuster-Hauser syndrome, sigmoid colpopoiesis, neovagina, vaginoscopy.

Introduction. Malformations of the female genital organs account for 4-5% of all congenital anomalies [8,9,10,11]. Hereditary, exogenous, and multifactorial factors contribute to the development of malformations of the female genital organs. The occurrence of malformations of the genital organs is attributed to the critical period of intrauterine development. They are caused by the absence of fusion of the caudal sections of the paramesonephric Müllerian ducts, abnormalities in the transformation of the urogenital sinus, and the pathological course of gonadal organogenesis, which depends on the development of the primary kidney. These abnormalities account for 16% of all anomalies. Malformations of the genital organs most often occur during pathological pregnancy in the mother at different stages of pregnancy. These include early and late gestosis, infectious diseases, intoxication, and endocrine disorders in the mother's body. In addition, developmental anomalies of the female genital organs may occur under the influence of harmful environmental factors, occupational hazards in the mother, and poisoning with toxic substances. Malformations of the genital organs, especially in females, are becoming increasingly important every year [1,4,7,8]. Since patients cannot have a full life and experience both physical and psychological stress. According to modern authors, malformations of the female genital organs account for 4-5% of all congenital anomalies [1,4,8]. Sigmoid colpopoiesis is successfully used to create a neovagina. In 90% of all cases of vaginal aplasia, there is Rokitansky-Küster-Mayer-Hauser syndrome, and only in 7% of cases is vaginal aplasia observed with a functioning uterus [2,5]. According to foreign authors T.A. Toolenaar, I. Freundt, J.H. Wagenvoort et al. (1993) examined the microbial landscape of 15 patients after sigmoid colpopoiesis. In one patient, only E. coli was isolated, while in all other patients, more microbial species were isolated (an average of 6, ranging from 1 to 9). The most frequently found were E. coli (in 14

patients), Bacteroides species (in 13 patients), and Lactobacilli (in 10 patients). A total of 85 different species representing 17 different genera were isolated. The authors did not detect Trichomonas vaginalis, Candida albicans, Chlamydia trachomatis, and Neisseria gonorrhoeae. The bacterial count in the neovagina (from 103 to 1011) was lower than in the healthy sigmoid colon, pH was 8 (from 7 to 9). There is virtually no data on pH values and the development and establishment of the microbiome of the artificial vagina, demonstrating the need and relevance of studying this issue. Objective: To study the characteristics of the neovagina microbiome and the specifics of vaginoscopy after sigmoid colpopoiesis.

Sigmoid colpopoiesis is successfully used to create a neovagina. Rokitansky-Küster-Mayer-Hauser syndrome accounts for 90% of all cases of vaginal aplasia, and only 7% of cases involve vaginal aplasia with a functioning uterus. Sigmoid colpopoiesis is one of the main surgical techniques for creating an artificial vagina in patients with congenital genital anomalies. Despite good functional results, complications may arise late after surgery, requiring additional medical intervention. This clinical case demonstrates a rare complication in the form of inflammation and mucous stones in the artificial vagina 25 years after sigmoid colpopoiesis.

Case Description Patient M.Sh., born in 1992, presented with complaints of chronic lower abdominal pain, discomfort, and unpleasant discharge from an artificial vagina. She plans to become pregnant using ART. Her medical history includes sigmoid colpopoiesis, performed 10 years ago for congenital absence of the vagina (Müllerian agenesis), with a functioning uterus. Due to hematocolpos, she underwent surgical incision of the hematocolpos, followed by sigmoid colpopoiesis and implantation of a functioning uterus.

Objective status: Examination revealed signs of a chronic inflammatory process, including hyperemia, edema of the mucous membrane of the artificial vagina, and mucous discharge. Palpation was not painful (the colpopoiesis was performed in 2016).

For a more detailed examination, the patient was recommended to undergo a pelvic ultrasound and CT scan. The CT scan revealed dense calculi (mucus stones) in the walls of the artificial vagina.

Pelvic ultrasound revealed the uterine body measuring 34 x 27 x 36 mm. The endometrium was 4 mm. The left ovary measured 23 x 17 mm; the right 25 x 15 mm. The patient was examined on day 6 of her menstrual cycle.

A kidney ultrasound revealed pyelonephritis of the left kidney. Laboratory tests revealed elevated inflammatory markers (C-reactive protein, leukocytosis up to 19.5 x 109, ESR 35 mm/h), indicating an active inflammatory process. A general urine analysis revealed a protein level of 0.33, a leukocyte count of 15-25, and a cluster of up to 40 per high-power field. Salts and oxalates were present. A complete blood count revealed no significant changes.

To identify the cervix for embryo transfer, a vaginoscopy was performed by a general consultation of reproductive physicians in Almaty.

After three cleanings of the external genitalia and vaginal sanitation with an antiseptic solution, a hysteroscope was inserted into the vagina. The vaginal mucosa exhibited a folded structure characteristic of the large intestine. Postoperative threads were visible in the neovagina wall at a diameter of 1.0 cm, along with several vaginal stones that were removed with forceps. A circular narrowing of the vagina, up to 1.0 cm in diameter, was present at a diameter of 3 cm from the external entrance. The tract then winds for another 5 cm, and before reaching the blind end, the cervix is visible on the side. The conical entrance to the cervical canal is visible, and the tract then terminates blindly.

Discussion. External examination and vaginoscopy (preferably liquid endoscopy using a hysteroscope or cystoscope) allow us to clarify the shape of the vaginal defect and identify a fistula tract between the vaginas, and between the vagina and the urethra/bladder/rectum.

A lack of mucus passage from the neovagina was detected. Accumulated mucus and mucus stones created a false clinical picture and pain syndrome, as the patient had not received any treatment for 10 years.

Treatment. The patient was offered debridement of the inflammatory focus. The neovagina was irrigated, and mucous stones, similar to plasticine, were removed. The artificial vagina was debridemented, and the neovagina was colonized with lactobacilli (Vagilax, 1 capsule twice daily for 7 days). Postoperatively, antibacterial therapy and a course of physiotherapy were prescribed to accelerate tissue healing.

Following treatment, the patient's condition improved, pain and discomfort disappeared, and inflammation indicators returned to normal. A follow-up examination and ultrasound examination three months later revealed no pathological changes.

Conclusion. This clinical case demonstrates the importance of long-term follow-up of patients after sigmoid colpopoiesis. Physicians should be alert to potential long-term complications, such as mucus stone formation and chronic inflammation. Timely diagnosis and surgical treatment can significantly improve the quality of life for patients who have undergone this procedure

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