Interdisciplinary Approach in the Management of Vaginal Atresia Associated with Transverse Septum

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ABSTRACT

Vaginal atresia, which results from failure of canalization in the urogenital tract, is one of the congenital disorders affecting the genital tract in females. In this condition, fibrous tissue may comprise the lower part of the vagina, perhaps leading to a blockage.[1] Another anomaly which is still rare is the transverse septum of the vagina, often known as the vaginal septum.[2,3] A failure of vertical fusion during vaginal development leads to the development of transverse vaginal septum.[2] Vaginal dilators or surgery to build a new vagina are common forms of treatment.[6] Vaginal dilators are indicated postoperatively in patients who are treated surgically for vaginal atresia to avoid the potential contraction of the repaired neovagina.[5,6,7] These are small, spherical tubes called vaginal dilators which are pressed up against the vaginal region. This should be done for fifteen to twenty minutes each day. Prosthetic vaginal dilators can be made from various dental materials, including silicone-based materials and acrylics.[6] The interdisciplinary role of custom-made prosthetic appliances and conservative surgical management of vaginal atresia associated with transverse vaginal septum is discussed in this case report.

Keywords: Dilator, Prosthetic, Transverse Vaginal Septum, Vaginal Atresia.

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Crossref Doi: https://doi.org/10.36437/irmhs.2024.7.4.B

Introduction

Congenital vaginal atresia is a rare congenital defect of the female reproductive system caused by a canalization failure in the urogenital sinus.[1] Müller's ducts form the uterus, the tubes, and the upper two-thirds of the vagina during development, while the urogenital sinus forms the lower portion of the vagina.[1] Therefore, a deficiency in the maturation of the terminal segment of the paramesonephric channels results in isolated vaginal atresia.[1] Another anomaly of the female genital tract is the transverse vaginal septum, often known as the vaginal septum.[3] This transverse septum can develop anywhere in the vagina, no thicker than 1 cm, and they often have an eccentric perforation that permits vaginal discharge.[3] These anatomical obstructions have the potential to fully clog the vagina and induce hematometra and hematocolpos due to the buildup of menstrual blood, which is linked to cyclic pelvic pain shortly after menarche.[3] After discussing the two uncommon conditions, we now describe the example of a 14-year-old girl who experienced cyclic abdominal pain and had both vaginal atresia and a transverse vaginal septum. The initial surgical treatment for a transverse vaginal septum is resection of the septum with end-to-end anastomosis, which may result in scarring and the formation of

contractures.[4] Prosthetic dilators can be fabricated to help keep the vagina patent and prevent these postsurgical contractures.[6,7]

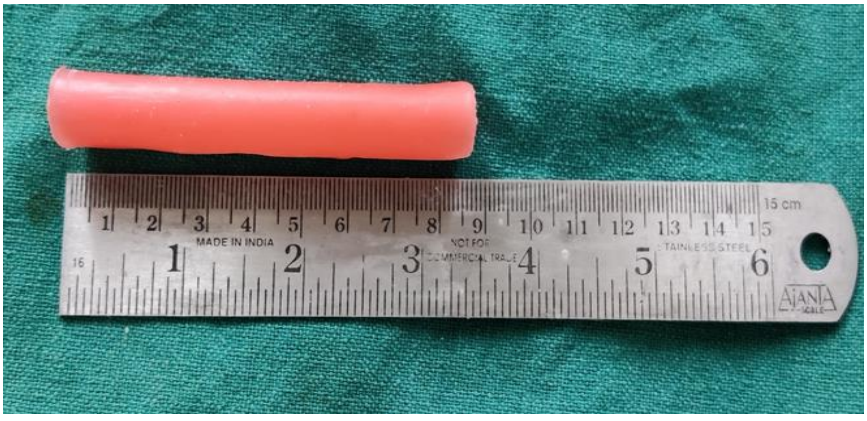
This case study discusses the multidisciplinary role of custom-made prosthetic appliances and conservative surgical intervention play in the early management of vaginal atresia and the transverse vaginal septum.

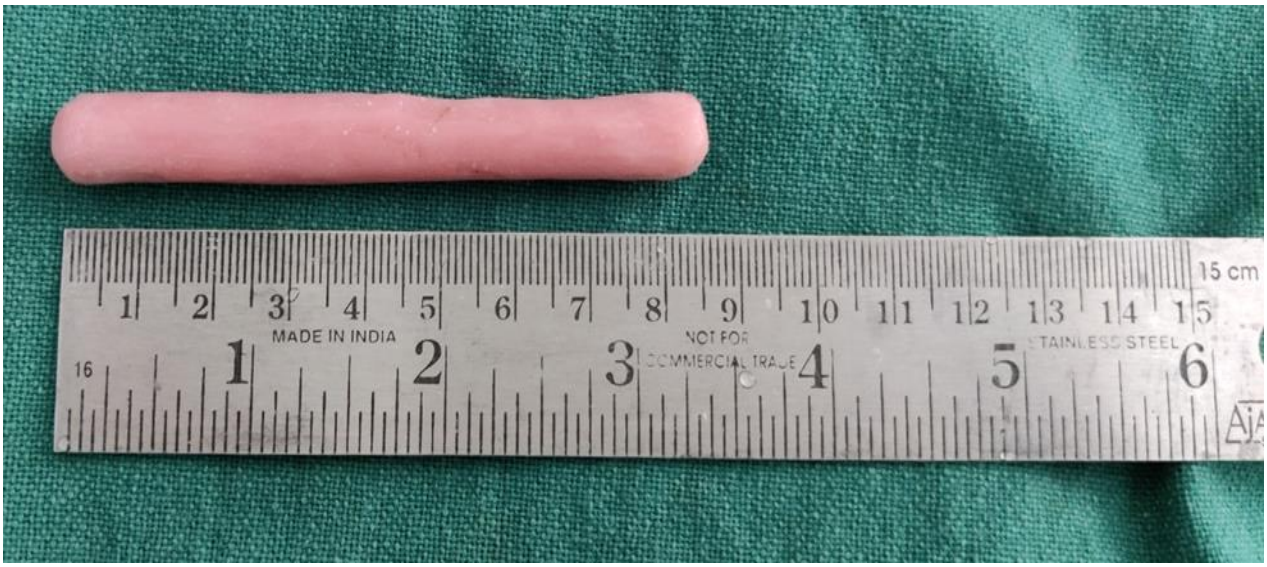
Case Statement

A 14-year-old female patient was referred to the Department of Prosthodontics and Crown & Bridge, Dr Ziauddin Ahmad Dental College, A.M.U., for a prosthetic vaginal dilator, from the Department of Obstetrics and Gynecology, Jawaharlal Nehru Medical College, A.M.U. According to the patient, she did not attain menarche, but she had cyclical lower abdominal pain every month for the past two months. On initial examination, she presented with normal secondary sexual characteristics. She had no noteworthy medical history and had been in good health. Her physical evaluation was normal. The patient underwent ultrasonography, on which a hematometra with right hematosalpinx was observed. Under short general anesthesia, vaginal examination was performed, and the results showed hymen tags, a vaginal length of 1.5cm, and a transverse vaginal septum in the upper one-third portion. The surgical procedure involved creating a transverse incision in the middle of the vaginal transverse septum while in the dorsal lithotomy position. Dilation after surgery was required to avoid restenosis. A custom-made vaginal dilator was fabricated according to the dimensions specified by the gynecologist, and the patient was instructed to use this dilator for vaginal dilatation. The patient received comprehensive instructions on how to use the dilators correctly. She was told to cover the dilator in a condom and position the dilator's tip at the neovagina between the urethra and the anus. The rounded tip of the dilator would be placed into the vagina with mild pressure until a minor sensation of pain or muscle strain is experienced. Gentle in and out and rotation movements were to be done for at least fifteen to thirty minutes.

Fabrication of Prosthesis

The gynecologist recommended the necessary measurements for the custom-made vaginal dilator to be 8.5 cm in length and 1cm in diameter. A mold was made using a modeling wax sheet of the specified dimensions. Self-polymerizing acrylic resin was mixed according to the manufacturer's instructions and was packed into the mold in the dough stage. The acrylic resin was tightly condensed so that no gaps or air bubbles were incorporated into the final prosthesis. The acrylic resin was allowed to set, and then taken out of the mold. Finishing and polishing were done appropriately to prevent any rough surface on the vaginal dilator, as it could cause trauma to vaginal tissues.





Discussion

Vaginal atresia is a common congenital abnormality affecting the female genital tract occurring due to the failure of canalization in the urogenital tract. In this condition, fibrous tissue may comprise the lower part of the vagina, perhaps leading to a blockage.[1] A still rare anomaly of the female genital system is the transverse septum of the vagina, often known as the vaginal septum. A failure of vertical fusion during vaginal development leads to the development of transverse vaginal septum.[2] Individuals with these anomalies are at a higher risk of infection and may endure pain, retrograde menstruation, and difficulties during sexual activity, pregnancy, and childbirth.[4] Therefore, surgical correction is required. The purpose of the prosthetic vaginal dilator was to keep the delicate new tissues away from the vaginal barrel lining.[5] Separating and preventing the early formation of adhesions between the mucosa's walls is the aim of vaginal dilation therapy.[5,7] By extending the vaginal tissue and encouraging the formation of epithelial cells, the dilator has a secondary function of counteracting the late consequences in the submucosa, such as elastosis and circumferential fibrosis of the vaginal canal.[3,4,7] As such, it needed to be extremely smooth and well-finished to prevent discomfort.[5] Depending on patient variability, vaginal dilators should be made as per the dimensions recommended by gynecologists. In the current instance, the prosthetic device was fabricated using the measurements that the gynecologist recommended. Customized vaginal stents can be made of stiff acrylic or soft silicone. Hard vaginal dilators are a better option than soft ones as the latter are more likely to develop fungal infections and surface degeneration from poor maintenance. Additionally, acrylic materials are heavier and tougher than silicone materials, so they are more likely to succeed in getting the vagina to the ideal size.[6]

References

1. Slaoui A, Benzina I, Talib S, Etber A, Zeraidi N, Lakhdar A, Kharbach A, Baydada A. Congenital vaginal atresia: about an uncommon case. Pan African Medical Journal. 2020 Sep 17;37(1). https://doi.org/10.11604/pamj.2020.37.69.21682
2. Polasek PM, Erickson LD, Stanhope CR. Transverse vaginal septum associated with tubal atresia. InMayo Clinic Proceedings 1995 Oct 1 (Vol. 70, No. 10, pp. 965-968). doi: https://doi.org/10.4065/70.10.965

3. Lakhdar A, Baidada A. Management of a transverse vaginal septum complicated with hematocolpos in an adolescent girl: Case report. International Journal of Surgery Case Reports. 2020 Jan 1;77:748-52. doi: https://doi.org/10.1016/j.ijscr.2020.11.098
4. Thangarajan ST, Choudhury M, Padmanabhan TV, Shanmuganathan N. Rare combination of anomalies and its management with conservative and effective approach. Journal of Human Reproductive Sciences. 2016 Jan 1;9(1):56-8. doi: https://doi.org/10.4103%2F0974-1208.178634
5. Patnana AK, Chugh A, Chugh VK, Shekhar S. Simple and novel technique for fabrication of prosthetic vaginal dilators. BMJ Case Reports CP. 2019 Apr 1;12(4):e229524. doi: https://doi.org/10.1136/bcr-2019-229524
6. Raza FB, Raju K, Babu A, Vaidyanathan AK, Mehta BS. Customised Vaginal Stent–The Phases in Management of Vaginal Agenesis in Mayer-Rokitansky-Küster-Hauser (MRKH) Syndrome. Journal of Family & Reproductive Health. 2023 Mar;17(1):54. doi: https://doi.org/10.18502%2Fjfrh.v17i1.11978
7. Damast S, Jeffery DD, Son CH, Hasan Y, Carter J, Lindau ST, Jhingran A. Literature review of vaginal stenosis and dilator use in radiation oncology. Practical radiation oncology. 2019 Nov 1;9(6):479-91. doi: https://doi.org/10.1016/j.prro.2019.07.001

How to cite this Article: Ansar. H, Wara. U, Abdullah. S, Singh. G, Qazi. T; Interdisciplinary Approach in the Management of Vaginal Atresia Associated with Transverse Septum; Int. Res. Med. Health Sci., 2024; (7-4): 5-8; doi: https://doi.org/10.36437/irmhs.2024.7.4.B
Source of Support: Nil, **Conflict of Interest:** None declared.
Received: 22-6-2024; **Revision:** 28-7-2024; **Accepted:** 10-8-2024