ABSTRACT

Transverse vaginal septum is a rare anomaly that results from incomplete fusion of urogenital sinus, and the vaginal parts of the Mullerian duct. Cervical atresia/dysgenesis is still a rare uterovaginal anomaly that can be congenital or acquired leading to fertility problems. Transverse vaginal septum when it coexists with cervical dysgenesis, it becomes a rare combination where management becomes highly complex. This case report deals with interdisciplinary role of conservative surgical management and custom made prosthetic appliances in the management of transverse vaginal septum and cervical atresia at an early stage and perhaps this goes to be the first-line treatment option with the expertise in laparoscopic surgery along with prosthetic management.

KEY WORDS: Cervical dysgenesis, prosthetic dilator, prosthetic management, transverse vaginal septum, urogenital anomalies

INTRODUCTION

Transverse vaginal septum is a rare anomaly that results from incomplete fusion of urogenital sinus and the vaginal parts of the Mullerian duct.[1] This septum is usually found in the upper and mid-vagina but can be located at any level in the vagina and varies in thickness too.[2,3] Clinical manifestations depend on whether it is complete or partial septum. In case of complete septum, it results in hematocolpos and hematometra due to accumulation of menstrual blood resulting in distension of the structures above the septum postpuberty. These patients present with symptoms of lower abdominal cyclic pain with ultrasonic findings of hematocolpometra. Occasionally, a palpable mass is found in the lower abdomen (hematometra). In case of incomplete septum, patients complain of cryptomenorrhoea, dysmenorrhoea, and dyspareunia due to limited egress of menstrual blood.

Cervical atresia/dysgenesis is still a rare uterovaginal anomaly that can be congenital or acquired leading to fertility problems.[4] Having said about two rare anomalies, here, we present the case of a 16-year-old girl with cyclic abdominal pain who had the rare combination of transverse vaginal septum and cervical dysgenesis with severe anemia and amenorrhea. Resection of the septum with end-to-end anastomosis is the first surgical management of transverse vaginal septum, which might lead to scarring, and development of contractures. Custom-made prosthetic stents can be used to prevent these postsurgical contractures and maintain the patency of the vagina and cervix.

This case report deals with interdisciplinary role of conservative surgical management and custom-made prosthetic appliances in the management of transverse vaginal septum and cervical atresia at an early stage.

CASE REPORT

A 16-year-old girl reported with cyclical abdominal pain for past 4 months with

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amenorrhea. Minimal pubic and axillary hair growth (Tanner II) with normal breast development was observed. Height and weight were not appropriate for the age, and no tenderness or mass on palpation was observed. The history of “never menstruated” was obtained during discussion with the patient’s mother. There was no family history of consanguineous marriage of the parents or relatives. Ultrasonographic (USG) studies showed that the liver, kidneys, spleen, ureters, and urinary bladder were all normal and uterus and ovaries of normal size, with hemoglobin of 7.1 g/dl. The patient was diagnosed with transverse vaginal septum with probable cervical dysgenesis with the help of USG [Figure 1]. Surgery was planned with the vagina being atretic; dissection was done in the loose areolar space between the bladder and rectum toward the cervix. Cervical stroma was identified with a small dimple. Then, canalization of the cervix was done through the identified dimple using mosquito artery forceps and with the help of abdominal ultrasound probe as a guide. A 4 cm long, 2.5 cm diameter hollow prosthetic stent (acrylic) was subjected to low-steam sterilization before placing and sutured to the cervical wall to hold the cannula in place. This hollow stent helped in flushing of the blood during the menstrual period along with maintaining the patency of the cervix. Ethical clearance and patient consent were obtained for publishing this case report in the journal.

**Fabrication of stent**

A 20 ml syringe and suction tip were used as the base model [Figure 2]. The syringe was modified according to the specification of 30 mm long and suction tip was cut to 10 mm. The putty impression material was used to occupy the mold space, to obtain a hollow cylinder configuration. Modeling wax was used for fabrication of the wax pattern over the putty [Figures 3 and 4]. The wax pattern along with the putty mold was flasked and processed with heat cure acrylic resin followed by finishing and polishing [Figure 5].

**DISCUSSION**

Transverse vaginal septum is a rare occurrence. When it coexists with cervical dysgenesis, it is even rarer. Transverse vaginal septum is found between the upper one-third (Mullerian origin) and lower two-third of the vaginal canal (urogenital sinus origin). It is categorized as Class II congenital uterovaginal anomaly under the Rock and Adam’s classification.

Patients with transverse vaginal septum experience pain, retrograde menses, difficulty during sexual intercourse and childbearing, and delivery and are exposed to high risk of infection. Hence, surgical correction becomes a necessity. After surgical correction of the septum is done, end-to-end anastomosis of the vagina is required. When transverse septum is diagnosed, generally a major portion of the vagina is missing, making it difficult for the anastomosis of the upper and lower segments, postpuberty. To overcome this difficulty, Z-plasty and simpler flap methods have been advocated. However, neither of the methods were used in this case. A simple excision and dissection through loose tissue were done to create a neovagina. To prevent stenosis during the phase of epithelialization, prosthetic vaginal dilator was used.

The process of re-anastomosis becomes easy due to distension of the upper vagina with menstrual blood, which acts as tissue distenter; however, in cases where this is not the situation, the use of a vaginal dilator is advised to thin the septum and ease re-anastomosis. The dimension of the canal was measured and a custom-made hollow prosthesis (dilator) was fabricated. After 2 weeks, the dilator was removed under general anesthesia to make the procedure pain-free and for proper evaluation, and new
one was fabricated with which the patient was trained to use until re-anastomoses was achieved to a satisfactory level. The main advantages of this technique are (a) the patency of the canal was maintained, (b) the hollow in the stent acted as a vessel for collecting the blood and provided a path for its removal, thereby eliminating the risk of canal closure reducing the risk of infection due to pooling of blood.

CONCLUSION

Detailed medical history, clinical examination, and pelvic ultrasound are the ways and means to diagnose the conditions of transverse vaginal septum and cervical dysgenesis/atresia. Diagnosis of cervical obstruction should be made as early as possible so that aggressive surgical procedures such as hysterectomy can be avoided. This conservative surgical management was made possible with the emerging trends in reproductive technology and laparoscopic techniques and was perhaps going to be the first-line treatment option with the expertise in laparoscopic surgery along with prosthetic management.

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Conflicts of interest

There are no conflicts of interest.

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